THE HOP PRESS

A Memorandum of What's Brewin'
Compiled for the convenience of County Agents

By G. R. HOERNER, Hop Specialist

October 18, 1948

BLAME THE BRASS

The 9-page "communique" dated August 6, 1948 from GHQ located in Room 126 Agriculture Building, Campus, impressed me as a directive no cooperatively minded Extension Serviceman should sidestep. So-o-o, Section VIII, B. 1. thereof is being belatedly implemented herewith.

Any Extension Specialist, it seems, who is able to report his mission accomplished within ninety days from the deadline date is doing pretty well!

I’m a little loathe to add my "two bits-worth" to the ponderous pile of printed matter some of you are so carefully composting in the corners of your already overstuffed offices but "orders is orders"! I like to liken myself to one of the British bully-boys at Balaclava, as immortalized by Lord Tennyson.

Dig up grandma's copy of this old-time favorite, sometime, and peruse the poem entitled "The Charge of the Light Brigade". There's a meaty moral mentioned. It's a sure-fire way to "make friends and influence people", especially undertakers!

READ IT AND WEEP

The pristine purity of each first page will be preserved for editorial effulgence. I definitely do not propose to do all the work without having any fun. Such a situation would indeed "make Jack a dull boy".

A table of contents will not be tolerated. After all, my readers, if any, should be willing to open their own oysters if they expect to find any pearls!

This course of study is strictly optional. I'm telling you truly; if you don't care to trifle with "tripe" you better skip the title page in its entirety and browse about in greener pastures beyond. Shop-talk will be confined to the back of the bindery.

OCCIPITAL OCCUPATION FOR OCTOBER

"The men who try to do something and fail are infinitely better than those who try to do nothing and succeed."
OLD STUFF

Hop-growing is one of the oldest agricultural activities in the United States. Reliable records indicate hops were among the plants which the Pilgrims brought with them on the "Mayflower".

The kick-off of hop culture in Oregon was made around 1845.

Walter Everest of Newberg claims to be the oldest grower in Oregon. Since 1880 he has been growing hops on the same piece of ground that was homesteaded by his grandfather.

John Morley's father set out the first family yard at Silverton in 1885. John has been growing hops himself since 1896. He has just completed his fifty-third straight year without missing a season.

The WALPORT RECORD recently ran a stimulating story about L. R. (Dewey) Hill, a reclusive resident on Eckman Creek in Lincoln County. "Dewey" was a pioneer Polk County hop producer, proud of his old-time title of "hop king".

THERE'S BULLION IN THEM THAR BALES

The average gross price received by Oregon hop growers in 1947 was 71 cents per pound, dry weight. Verily, lupulin is lucrative! Here's the account:

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>TOTAL POUNDS</th>
<th>DOLLAR VALUE</th>
</tr>
</thead>
<tbody>
<tr>
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<td>197,337</td>
<td>353,109.27</td>
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<tr>
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<td>1,339,723</td>
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<td>Jackson</td>
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<td>Josephine</td>
<td>2,086,100</td>
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<td>Lane</td>
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</table>

CROOK COUNTY A CASUAL

The 40-acre hop planting near Prineville was abandoned during the year. The baby industry died a'bornin', almost. Delbert Haener, an experienced Willamette Valley grower fathered the venture. He even imported a picking machine to harvest the modest 1947 crop of 239 pounds per acre. A blazing dryer, during last year's harvest, seems to have burned out his enthusiasm and given the business a black eye. Too bad!

Just a dozen hop-growing counties left in the state now.

DAISIES WON'T TELL

Every single Saturday, at 12:15, KOAC has carried my "Timely Hints For Hop Growers" from March 6 to September 25, that is. Thirty times I've "told 'em", and it's no small chore to prepare the pertinent paragraphs. I've been wondering if it's worthwhile.
Now I'm eager, like Arnold Ebert, to advocate the advantages of the air waves as a tool for extension teaching. But I yearn for a yardstick with which to measure my messages.

Do you boys want bottle tons to turn in as indicators or is it just too much trouble to tell me: (1) that you, and perhaps some of your hop growers, have been listening, or (2) that you're too busy to be bothered, or (3) that you tried it once and didn't like it?

FOREIGNERS AFIELD

Aside from the many foreign varieties growing in the experimental hop yards at the College, growers in Josephine, Marion and Polk counties have recently done some importing on their own.

Except for the patented "Bavarian" hop, all commercial plantings of foreign varieties are of English origin and the developments of E. S. Salmon, South-Eastern Agricultural College at Wye, Kent. They are: Brewer's Gold, Brewer's Standby, Bullion, Concord, Early Promise, Fillpocket, L 21, an unnamed seedling, Quality Hop and Nonesuch Hop.

I can present the pedigrees of any or all of these immigrants if you or any of your growers are curious.

SHEEP SHY

As a hop fertilizer sheep manure is definitely deficient. An average analysis of N, P₂O₅, and K₂O would run 1.9 percent, 1.25 percent, and 1.15 percent respectively.

To be of much value in connection with hop production at least 1000 pounds per acre should be used. It can be broadcast with a manure spreader and should be followed by a light discing to thoroughly incorporate the manure in the soil.

FROSSER PROSPECTUS

Superintendent H. P. Singleton of the Irrigation Experiment Station at Prosser, Washington has prepared an interesting outline of the activities at the station under the title, "Research Program 1948". Send for a copy. You'll find it fascinating.

I was invited to attend the Field Day on June 24 and led a discussion in which some fifty persons participated, mostly hop growers and members of their families.

Dr. Stanberry of the Station staff presented a preliminary report on the work with hop fertilizers. The experiments were started in 1944 and are to be concluded at the close of the 1948 season. Ten different treatments were replicated three times in a 15-acre field. Eight treatments consisted of different combinations and rates of N, P and K; one was a barnyard manure. The check plots were untreated.

Yields the first three years indicate a combination of 80 pounds of Nitrogen and 60 pounds of P₂O₅ per acre were most satisfactory.

Dr. Viets reported on an experiment with fall and spring planted cover crops, begun in the fall of 1947, compared with ammonium sulphate and manure.
Some of the plots were cultivated and some were not. Forty different treatments were compared. Legumes proved to be a means of supplying some nitrogen more cheaply than it can be supplied in the form of manure or commercial fertilizers.

**BETTER LATE THAN NEVER**

March 10 it was when I wrote you men a letter in which I said something about a suggested "Soil Balance Sheet For Hop Growers". I even offered to supply stenciled copies for grower use. Only Clackamas and Washington counties asked for them!

I still think it was the germ of a good idea that could and should be cultivated with credit to yourselves and profit to your growers.

It's a bit tardy to be talking about a cover crop-fertilizer program this fall but how's about starting something along this line next spring?

**CUM GRANO SALIS**

Lagging in your Latin, lads? The well-worn grammar that lies on my lap as I write defines the horrendous heading for this paragraph as, "With a grain of salt!" That's a good way to take some of the current commercial conversation relative to "minor elements" in connection with soil fertility—at least as applied to hops. We desire data, not diatribes!

**SOME GOES UP – SOME GOES DOWN**

Acreage trends are indicated by the following table:

<table>
<thead>
<tr>
<th>STATE</th>
<th>1947</th>
<th>1948</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>9,017</td>
<td>9,166</td>
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<tr>
<td>Idaho</td>
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<td>627</td>
</tr>
<tr>
<td>Oregon</td>
<td>19,185</td>
<td>17,619</td>
</tr>
<tr>
<td>Washington</td>
<td>11,894</td>
<td>13,019</td>
</tr>
</tbody>
</table>

These figures were secured through the courtesy of Paul Rowell, Associate Manager of the U.S. Hop Growers Association.

**HOP MARKET REVIEW**

According to latest official figures, hop acreage in Oregon dropped from 19,000 acres in 1947 to 17,700 in 1948. As of October 1 the expected yield per acre in 1948 will average 40 pounds more than in 1947. The total yield is expected to be 2 percent below last season and 12 percent below the 10-year average covering the period 1937 to 1946.

The Washington crop is estimated at 13 percent above last season and 66 percent above the 10-year average.

The California crop is estimated at 17 percent below last season and 3 percent below the 10-year average.

So far this season, up to September 23, the weighted average percentages of leaf, stem and seed content of the Oregon crop is — but what the heck! All this sort of data is summarized for you in the "Hop Market Review".
Look up the letter I wrote you all last February 5 and check to see if
you have been getting items 1 and 2, listed in the penultimate paragraph of
said circular.

The "Review" was discontinued in February but publication was resumed on
September 28 and from now on there will be two issues a month. They're well
worth having on, not in, file.

THE HOPPER HELPS

Early in the year I asked Secretary Ed Markell of the U.S. Hop Growers
Association to place the names of each "chief" County Extension Agent, and in
addition "field man" Full of Umatilla County, on The Hopper's mailing list,
for free!

I informed you all of what I had done early in February but there has been
no comment from any of you "keystones in the arch of the Extension Service."

This little monthly is the official publication of the Association. It's
the only magazine I know of devoted entirely to the hop-growing enterprise.
All members of the Association receive the magazine but probably about a third
of the hop growers are not members of the Association. There's a lot of copy
in the columns of this magazine you could use in newspaper articles and radio
script. You ought to give it a glance anyhow just to augment your own know-
ledge of the hop industry. It's a swell way to inflate the ego; ergo, let me
know if you do not receive your copy regularly, I'll "put on the pressure" to
see that you do.

DEAN DONE IT

Dean Omans, Manager of the Independence Hop Growers, is a hustler. The
past season he ground out, in his little coffee mill, the following quantities
of dusting materials for his membership:

- Copper dusts — 122,415 pounds
- Nicotine dusts — 45,505 pounds
- DDT dust — 5,825 pounds
- Total — 173,805 pounds

Seriously, his power-operated mixer, of 1,000 pounds capacity, does an
entirely adequate job and the end-products are above reproach. They are pack-
aged in attractively labeled 50-pound paper bags.

THE COST OF CARE

Some detailed data was obtained covering the cost of disease and pest con-
trol on one Willamette Valley hop yard during the 1917 season. This yard com-
prised a total of 343 acres. The yield was 21,50 bales or 1428 pounds of dry
hops per acre.

To control downy mildew, 8 airplane and 10 ground duster applications were
made. To control aphis, or lice, 2 airplane and 1 ground duster applications
were made. To control red spider mites, 2 ground duster applications were made.
MATERIALS:
- 153,200 pounds copper-lime dust (downy mildew) $7,510.00
- 9,580 pounds nicotine concentrate dust (aphis) 1,411.00
- 18,600 pounds nicotine sulfate dust (aphis) 2,976.00
- 13,800 pounds DN D8 dust (red spider mites) 1,152.00

Total $13,349.00

APPLICATIONS:
- Airplane 3,204 acres @ 1.50 $4,806.00
- Duster 3,113 acres @ .50 (downy mildew) 1,556.00
  332 acres @ 1.50 (aphis) 498.00
  529 acres @ 1.00 (red spider mites) 529.00

Total $7,389.00

The total costs were $60.46 per acre, $4.23 per cwt., or 4.23 cents per pound of dry hops.

THEY COUNT 'EM AT KAMLOOPS

Kamloops, British Columbia is the source of some tall tales about trout. Harry Ord, who used to manage some big hop yards in the Willamette Valley, grows hops at Kamloops, and how! Eighteen bales to the acre, he wrote me recently, is his record and he sent a pretty picture to prove it. His prime problem, he says, is to cut the yield to about eleven bales so his picking machines will do a better job! Downy mildew has recently been reported in the Kamloops country, which may help to accomplish his objective!

There are a hundred lakes within a radius of a hundred miles of Harry's hops. I've a standing invitation to use his facilities on a hop inspection tour and he told me to be sure and bring my tackle!

Any of you fishermen, in addition to Johnny Inskeep, want to accompany me to Kamloops to take a look at Canadian hops, come trout-time?

IT AIN'T TRUE

Official figures from 1899 to date indicate the acreage of hops has fluctuated widely with possible lows of 1,129, 5,629 and 3,300 and highs of 11,700, 26,000 and 114,400 in Washington, Oregon and California, respectively. Total annual production has varied with variations in acreage and yield per acre.

Downy Mildew has been held primarily responsible for the low yields obtained last year, in certain areas at least, of all three states. That it was an important factor cannot be denied. That it was the sole factor is subject to serious question.

It is of interest to note that during the 25 year period from 1905 to 1929, yields as low or lower than those in 1947 were recorded for 17 of those years in Washington, 9 in Oregon, and 12 in California.

Certainly some other factors responsible for low yields are to be found because downy mildew was first discovered in Japan in 1905 and not found on our Pacific Coast until 1929.
PRESSING PROBLEMS

There are at least five serious problems confronting Oregon hop growers. They are: (1) overproduction, (2) unstable conditions of export and import markets, (3) relatively low yields per acre, (4) necessity of maintaining and improving quality, both physical and chemical, (5) control of diseases and insect pests.

The "number one" disease is downy mildew.

There are two avenues of approach to a solution of the problem it presents to profitable hop production: (1) the development and full use of field practices or control measures and (2) the selection from available planting stock or the breeding of new varieties which combine: (a) resistance to downy mildew, (b) productiveness and (c) quality superior to the varieties now in commercial production.

In order to avoid the expense of spraying or dusting and perhaps other control practices, hop breeding and selection work should and doubtless will be continued until one or more commercially desirable hop varieties are developed which will not be seriously affected by the disease.

SERVING SERVICEMEN

On the first of April and October I wrote to all Veteran Instructors connected with Institutional On-Farm Training in hop-growing counties. I offered to supply them, and any students they desired to designate, copies of any or all of the available items of literature dealing with hops. I agreed to confer with their classes to discuss hop production problems if suitable schedules could be arranged.

A meeting was attended at Dallas on March 11 and sets of hop literature were supplied Instructor Peyree and five of his students in-training on hop farms. My audience was interested; in fact they became enthusiastic when my "dry" discussion was moistened by mention of the relative merits of domestic and foreign "brow"!

A request by Instructor Faris to meet with his group at Vale could not be granted.

So far this fall Instructor Meyer at Sherwood, Instructor Underhill at Forest Grove and one student and Instructor Cline at Grants Pass and two students have been supplied with sets of literature.

Arrangements were made by Instructor Coffield for me to meet with his class at Gervais on October 12. There was an attendance of 69! I plan to meet, maybe six more times with a class of about 20 trainees who are "hopped up" about hops.

Frankly, I don't relish night driving in winter weather nor "after-hour" oratory, but from where I sit it seems only fitting that a Specialist should be willing, and even eager, to do occasionally what you County Extension Agents are called upon to do all the time!
Anyhow, I'm definitely for the on-farm training program and consider it a privilege to participate therein. To my way of thinking it's an appropriate Extension activity, and I hanker to help the cause all I can.

CONSUMER COMMENT

At present there are only two "manufacturers in Oregon who are possible consumers of Oregon hops.

1. Blitz-Weinhard Company, Inc., of Portland. They make 350,000 barrels annually. That's an outlet for about 70 tons of hops. The Master Brewer is H. A. Walters. He speaks Spanish fluently, in case you care!

Bill Blitz, Company Treasurer, is a graduate of Oregon State College.

2. Sick's Brewing Company of Salem. They make 100,000 barrels annually. That's an outlet for about 20 tons of hops, some of which they grow on the company's own yards in Yakima county, Washington. The Master Brewer is John A. Meyers.

Any of you County Extension Agents would find it profitable to take a tour of either or both plants at the first convenient opportunity to see for yourselves the part which hops of quality play in producing quality products.

A LITTLE GOES A LONG WAY

The Oregon hop crop may reach 15,753,000 pounds this year when the tallying terminates.

Less than half a pound of hops is used in the manufacture of each 31-gallon barrel of "brew".

There should be 500 good, big, glasses in a barrel.

If the entire Oregon crop ends up in brewhouses it will provide a "hop-nose" to nigh onto 15,753,000,000 "schooners of suds" and that, burp, burp, is a lot of beer!

CLOTH OF GOLD

A kiln-cloth commonly consists of an extensive expanse of jute, an East Indian fiber, woven into a fabric known as gunny bagging or burlap. It is affixed mid-way between the draft-boards and the cupola. Through its mesh passes an absolutely amazing amount of hot air. Almost human, eh?
ALL FLESCH - NO VEGETABLES

Have you heard the story about the two little lads on the street car? No, I can't recount it here.

Now, basic policies I can ponder with pleasure but basic English—bah! You take all the fancy out of fiction if you fuss with the frills that enfold the King's English. A bald head, in popular parlance, is a cue-ball. There's no future there. A denuded cranium has possibilities. Language is like that.

A mind is like a muscle. You've got to exercise it if you want it to develop.

"That's what you think", snorted my stenographer impatiently. "You better forget those 'four-bit' words and tend toward sensible simplicity." "Sir," she said, "suppress your penchant for alliteration, hyperbole and metaphor! They mean nothing but mental fatigue for most folks. I hope you don't mind my saying so, but my task is to type your stuff and it stin--; I mean it's terrible."

"Sister," I replied after dignified reflection, "maybe you've got something there."

Then I glanced at the third line of THE HOP PRESS "mast head". All of a sudden it dawned on me that maybe these news letters were not intended to furnish fun for the fellow who writes them.

Ought I, for the more complete "convenience of County Agents", devote the space to something more serious and perhaps more serviceable?

Could it be the fellows out in the field have no flair for floundering about in all this front-page froth? Better I poll the personnel for their opinions despite the fact that even Gallup got let down on his last one!

A motto of Maryland reads, "When deeds are needed words will not suffice."

A THOUGHT FOR THANKSGIVING

"Countries are well cultivated not as they are fertile, but as they are free."
MY MISTAKE

Robert Burns, Celtic songster, once wrote, "The best laid plans o' mice an' men aft gang aglee"— "haywire", in other words! Darn disconcerting, but true!

I'm referring, of course, to several more or less minor mistakes in grammar, punctuation, spelling and typography in the October 18 issue of THE HOP PRESS. Picked 'em up, naturally, after the mimeos had been made. While some of the errors were "mechanical", most of them were mine. So sorry! Like good cheese, maybe we'll improve with age!

READER REACTION

Our office boy broke down under the loads of letters we received from appreciative recipients of the first "bale" from THE HOP PRESS. Thanks, boys, for your support and encouragement!

I surely must share some of the kind comments:

Kenny Keller, my office desk-mate, had first glance at the October output of THE HOP PRESS. "What in heck", he remarked wryly, "is an occipi-tal occupation?" "It's a lot of fun", I replied roguishly. "Play it sometime on your tympanum."

Don Wilson, one-time Owner-Editor of the BENTON COUNTY HERALD and the CAMP-JADIR SENTRY gave our amateur mimeo the o.o. and his professional O.K.

Bob Fowler, Information Specialist, said he thought the "mast head" was quite cute and the green paper pretty.

Paul Rowell, Associate Manager of the U. S. Hop Growers Association wrote, upon receipt of his complimentary copy, "This is certainly a snappy and attractive dose of hop culture -- How often do you plan to issue this epistle?" Paul, that word epistle appeals to me, even though I'm not an Ephesian!

E. L. Markell, Secretary of the U. S. Hop Growers Association wrote, upon receipt of his complimentary copy, "Thanks for your bulletin from THE HOP PRESS. This is very impressive. How often do you expect to publish this bulletin?"

Can't quite decide whether to be pained or pleased that Paul and Ed were both concerned about future issues. If they fear there will be, I'm sad. If they fear there won't be, I'm glad!

O. S. Fletcher, Lane County co-worker remarked, "The circular contains a great deal of valuable information that I am glad to have on file." "Fletch" figures he can tell Johnny Inskeep a thing or two when it comes to flipping a fly. Looks like I'll have to borrow a big bus somewhere to carry all the prospective participants on that proposed hop inspection invasion of Kamloops. Being only a fair fisherman, I'll promise to pilot the pick-up if they'll consider me for camp cook. Some of my camp cookery may be bewildering -- but good!

Your comments, comrades, are solicited herewith. Good, bad or indifferent, they will not be used against you!
Pardon, please, for my flaunting of Latin languages. I may swing south of the border sometime so I'm getting into practice! Anyone who has ever manhandled a mandolin will recognize the title of this Mexican masterpiece which, in English, is tantalizingly translated as "Over The Waves".

The waves I have in mind at the moment are "air waves". Thought you might be interested in a fairly complete list of Radio Stations Serving Oregon Hop-Growing Counties. Here it is, with thanks to Arnold Ebert.

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</tr>
<tr>
<td>Yamhill</td>
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<td>Portland</td>
</tr>
</tbody>
</table>

**DARKEST AFRICA DITTO**

A correction came from a cooperative correspondent recently. In my contribution to KOAC on October 21, I said that "hops are grown on five of the six continents, Africa only being excepted....."

Ed Markell, Secretary, U. S. Hop Growers Association, asked permission to put my script in THE HOPPER and presented proof of a proposed re-write for approval of a few minor changes and a big blunder! "We know," quoth he, "that
they (hops) are grown successfully in South Africa."

I do "care a continental", Ed, about authoring such an awful error. To err is human — that's me. Hope my readers will be divine and forgive.

EIFFEL TOWER TALK

In evaluating the 1947 Oregon hop crop by counties in our offering of October 18, my multiplier apparently was high — like the Eiffel Tower, long-famous Paris landmark!

Mumbling in my beard, I hasten to make amends by printing posthaste, data derived from D. C. Mumford, Head, Department of Farm Management.

HOPS IN WESTERN OREGON: Estimated Cost of Production and Seasonal Average Price per Hundredweight, 1934-1948.*

<table>
<thead>
<tr>
<th>Year</th>
<th>Yield per acre</th>
<th>Labor</th>
<th>Other cost</th>
<th>Total costs</th>
<th>Cost per pound</th>
<th>Price per pound</th>
<th>Percent of cost</th>
</tr>
</thead>
<tbody>
<tr>
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<td>873</td>
<td>$92.76</td>
<td>$69.49</td>
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<td>163.87</td>
<td>16.8¢</td>
<td>10¢</td>
<td>60%</td>
</tr>
<tr>
<td>1937</td>
<td>706</td>
<td>86.99</td>
<td>67.61</td>
<td>154.63</td>
<td>21.9¢</td>
<td>29¢</td>
<td>132%</td>
</tr>
<tr>
<td>1938</td>
<td>1100</td>
<td>125.8h</td>
<td>72.82</td>
<td>198.66</td>
<td>18.1¢</td>
<td>15¢</td>
<td>83%</td>
</tr>
<tr>
<td>1939</td>
<td>830</td>
<td>107.32</td>
<td>68.31</td>
<td>176.93</td>
<td>15.2¢</td>
<td>20¢</td>
<td>94%</td>
</tr>
<tr>
<td>1940</td>
<td>925</td>
<td>112.76</td>
<td>67.43</td>
<td>180.19</td>
<td>19.5¢</td>
<td>25¢</td>
<td>128%</td>
</tr>
<tr>
<td>1941</td>
<td>1035</td>
<td>129.17</td>
<td>75.15</td>
<td>204.82</td>
<td>19.8¢</td>
<td>25¢</td>
<td>131%</td>
</tr>
<tr>
<td>1942</td>
<td>840</td>
<td>112.21</td>
<td>77.95</td>
<td>220.16</td>
<td>26.2¢</td>
<td>30¢</td>
<td>115%</td>
</tr>
<tr>
<td>1943</td>
<td>680</td>
<td>162.38</td>
<td>87.59</td>
<td>219.97</td>
<td>36.8¢</td>
<td>96¢</td>
<td>125%</td>
</tr>
<tr>
<td>1944</td>
<td>880</td>
<td>268.4h</td>
<td>96.71</td>
<td>365.20</td>
<td>41.5¢</td>
<td>62¢</td>
<td>119%</td>
</tr>
<tr>
<td>1945</td>
<td>920</td>
<td>296.33</td>
<td>101.20</td>
<td>397.53</td>
<td>43.2¢</td>
<td>66¢</td>
<td>153%</td>
</tr>
<tr>
<td>1946</td>
<td>1025</td>
<td>322.67</td>
<td>104.76</td>
<td>427.43</td>
<td>41.7¢</td>
<td>64¢</td>
<td>153%</td>
</tr>
<tr>
<td>1947</td>
<td>940</td>
<td>327.12</td>
<td>116.37</td>
<td>443.49</td>
<td>47.2¢</td>
<td>62¢</td>
<td>131%</td>
</tr>
<tr>
<td>1948</td>
<td>810</td>
<td>321.89</td>
<td>133.73</td>
<td>455.62</td>
<td>54.2¢</td>
<td>62¢</td>
<td>114%</td>
</tr>
<tr>
<td></td>
<td>923</td>
<td>364.21</td>
<td>118.12</td>
<td>521.33</td>
<td>55.5¢</td>
<td>63¢</td>
<td>113%</td>
</tr>
</tbody>
</table>

Average 907 $197.28 $90.70 $287.98 32.0¢ 40¢ 118%

* Data for 1934 to 1936 are taken from Oregon Agricultural Experiment Station Bulletin 364, "Cost and Efficiency in Producing Hops in Oregon."

Yields for 1937 to 1947 and prices for 1934 to 1947 are taken from Agricultural Statistics. Estimated yield and price for 1948 are based on the 5-year average (1943-1947) of hop yields and prices in Oregon.

The estimates of labor costs are based on Oregon farm wages per month without board as reported by the Bureau of Agricultural Economics, U.S.D.A. The estimates for other costs are based on the index of production costs (prices paid by farmers for commodities interest and taxes) as reported in "The Agricultural Situation" published monthly by the Bureau of Agricultural Economics, U. S. D. A.
The department of Agriculture announced that a public hearing will be held to consider a proposed Federal marketing agreement and order regulating the marketing of hops grown in Oregon, California, Washington and Idaho. The hearing will begin at 9:30 a.m., p.s.t., November 29, 1948, at the Chamber of Commerce, Yakima, Washington; 9:30 a.m., p.s.t., December 2, 1948, at the Chamber of Commerce, Salem, Oregon; and 9:30 a.m., p.s.t., December 6, 1948 at Native Sons Hall, Santa Rosa, California.

RADIO REPRINTS

My monthly broadcasts, over station KOAC, began in October and will follow through February.

Copies of the script of these "radio readings" on hop topics are being mimeographed with reasonable promptness following presentation and forwarded, by request, to County Extension Agents in Josephine, Lane, Linn, Malheur, Polk, and Umatilla counties.

It is hoped the subject matter may be of some service as a basis for rebroadcasts, in whole or in part, over local radio stations or for news notes in local papers.

In March 1949 it is anticipated that "Timely Hints For Hop Growers" will be resumed on a weekly basis.

My "signature" platter, played at the conclusion of each weekly broadcast, apparently appealed to those who recognized the record as being absolutely apt! In case you haven't already guessed, it's the "Beer Barrel Polka"!

FEDERAL FORMULA

According to my capable contemporary and fellow-editor, Bob Fowler (fowl-er) of RURAL OREGON, a certain well-known radio commentator, strongly suspected of being "anti-administration!", is responsible for the uncomplimentary canard which accuses all government employees of being animal husbandmen

"Approved procedure for the civil servant", this off-base oaf (the commentator, not Bob) is reported to have announced, "is to shoot the bull, pass the buck and make seven copies."

Shameful slander, definitely not subscribed to by your Editor or his able and honorable associates!

SERVANTS' QUARTERS

Oregon State College serves as headquarters for the following part- and full-time Federal personnel participating in a nation-wide experimental hop project, a "master plan" for which, is in the making.

J. M. Barnes, Mrs.; Clerk-Stenographer, part-time.
D. E. Bullis, M.S.; Collaborator, part-time.
R. E. Fore, Ph.D.; Agent (Associate Agronomist), part-time.
C. R. Hoerner, M.S.; Agent (Plant Pathologist), part-time.
R. A. Magee, B.S.; Chemist, part-time.
K. R. Keller, Ph.D.; Agent (Agronomist), full-time.

-5-
Augmented appropriations will eventually make possible full-time Federal appointments of a Chemist at Corvallis and Agronomists at both Davis, California and Prosser, Washington.

HUMULUS TO PISUM

The 3½-acre Lakebrook Hop ranch in Marion County is reported by Messrs. R. M. and T. D. Livesley, the operators, as a probable pea patch. They are toying with the idea of removing the hop vines and replacing them with peas. Perish the thought! There's a downy mildew menace to peas that's a "toughy" too!

THE SIX WHO SERVE

Members of The Oregon Hop Industry Research Advisory Committee who accepted appointment by Experiment Station Director Wm. A. Schoenfeld several seasons ago are: Messrs. H. Eismann, R. J. Glatt, C. W. Murphy, C. F. Noakes, C. W. Paulus and D. H. Walker.

These men meet on call, furnish their own transportation, and receive no remuneration of any kind except the simple satisfaction which may stem from a realization that their advice and counsel contributes to the welfare of the industry they represent.

F. T. Rowell, Associate Manager, and E. L. Markell, Secretary of the U. S. Hop Growers Association sometimes "sit in" at the sessions as ex-officio members of the committee.

MANY METHODS

My! My! In the "Iowa Extension Plan of Work for 1918" there are listed 52 different methods or techniques that are used in conducting the extension program. How many might be helpful on the hop project, I wonder.

Here they are alphabetically arranged: achievement days, advertising service, audiovisual aids -- film strips, movies, slides, etc., bulletins, campaigns, camps, charts, check sheets (alternate viewpoints and true-false statements), circulars, conferences, contests, debates, demonstrations, discussion groups, entertainment -- games, songs, etc., exhibits, feasts, fairs and home visits, festivals, field days, forum meetings, institutes, lectures, letters, local volunteer leaders, mat service, news releases, news stories, offce callers, pageants, pamphlets, panels, plays, posters, prizes and awards, program service, questionnaires, radio broadcasts, refresher courses, reports, short courses, shows, signs, skits, slogans, surveys, talkfests, training schools, tours, township and community meetings, yearbooks, workshops!

The source of this subject matter was a mimeo addressed to State Extension Plant Pathologists and Horticulturists dated October 21, 1918 by Dr. R. J. Haskell, Extension Plant Pathologist and Acting Extension Horticulturist, U. S. D. A. Extension Service, Washington, D. C.

AGRICULTURE BULLETIN

This quality quarterly published by the Oregon State Department of Agriculture makes reliable reading. Every once in a while it includes items pertaining to some phase of the hop industry in Oregon.
The issue of September 1948 is worth referring to for a detailed discussion on the physical analysis of hops in an official offering by A.J. Fleming entitled, "Three Years of Hop Inspection".

CALL FROM CALCUTTA

Believe it or not, among several similar suppliants is a Hindu who wants to know what he kindu about hop cultivation in Calcutta. Indirectly, he unreservedly requested "varieties of hops (Humulus lupulus)". Some order, Sahib!

KILNS AKINDLE

Fire losses in 1947 consumed an estimated 513 bales of hops in Oregon. These burned bales averaged 191.8 pounds each for a total of 98,393 pounds with a grower-value of $61,003.91. It actually cost 54.2 cents per pound to pamper those sweet-smelling strobiles to the point where they could be surrounded by sacking. That's a neat $53,329.22. But hell's fire, that's not the whole of it!

The insurance adjusters alone know the total additional value of buildings and machinery and other equipment and supplies that went up in flames. They're not telling, partly because I don't know who all of them are and consequently can't ask them!

To store loose or baled hops in or near a dryer still in operation is about as safe as storing a can of kerosene behind the kitchen stove. But I've seen it done, brethren!

A red inkling of what seems to me to be a staggering total was provided by Homer H. Smith of Salem who has been writing fire insurance for hop growers since 1897. In 1947 his office had losses of approximately $100,000.00. As Mr. Smith says, "This is a lot of losses!"

His article in the May, 1948 issue of THE HOPPER entitled "Hop Fire Losses" is recommended reading.

This is a good time of year for hop growers to consider the causes for fire losses and follow some of Mr. Smith's suggestions for preventing them.

PICKERS VS POLLEN

In all three Pacific Coast states, as we go to press, the average percentages of leaf and stem content of the current hop crop were down. The percentages of the crop classified as "seeded" were up. Mechanical picking probably produced the low percentages of leaves and stems. "Mother Nature", no doubt, had something to do with the high "set" of seed.

<table>
<thead>
<tr>
<th>Percentage Leaves and Stems</th>
<th>Percentage Seeded Hops</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1947</td>
</tr>
<tr>
<td>Oregon</td>
<td>8.09</td>
</tr>
<tr>
<td>Washington</td>
<td>5.28</td>
</tr>
<tr>
<td>California</td>
<td>6.10</td>
</tr>
</tbody>
</table>
Hops, for all present practical purposes, are employed primarily in the manufacture of malt beverages.

It's true, they're testing the antibiotic properties of hop resins at the Albany, California Western Research Laboratory but the probable outlet for any great quantity of surplus hops for this purpose is not very promising.

Some years ago, at my suggestion, the Pacific Roofing Company of Portland made trial tests of hop vines as a source of fiber in the manufacture of felt roofing.

Mr. Howard M. Wall, President of the company, reported under date of September 17, 1913 as follows: "We carried on quite extensive experimental work on the use of hop vines in the manufacture of roofing felt, and our conclusions, briefly, were as follows: (1) the fiber in hop vines could be used to a limited extent in the manufacture of saturating papers (2) their value from a dollar and cents standpoint was too nominal to justify the extensive setup that would be required in order to use them commercially (3) it was also concluded that hop vines were too bulky for year round storage at our plant and that if anything further were to be done on it, it would have to be done by the hop growers. It would be necessary for the growers to do the decortication and separating the husk from the fiber so that the resulting fibers could be baled and stored in an economical manner."

"I should mention too that our chemist felt that there was danger of the finished sheet shrinking after exposure to the weather for a period of time."

G I GESTURE

Earl A. Britton, Veteran Instructor at Eugene recently wrote for a lot of hop literature for his sole student in-training on a hop farm. The packet was posted promptly.

I finally finished the sum total of six sessions with Veteran Instructor Coffield's classes at Gervais. Those groups gathered from 7:30 to 10:30 one night apart, two nights a week. Some schedule! A total of 160 contacts with fact-famished veterans were made before I was through. Nineteen neat bundles of bulletins were handed out just in case the ex-G.I.'s were remiss in remembering my remarks. I'll never forget theirs. They were pointed and plenty pungent!

I suffered two awful ailments from the assignment. The first, a temporary trouble, was diagnosed as "Gervais Jitters". It was due to my doubts about being able to transmit all the things I had learned about hops in eighteen years in an even eighteen hours!

The second set of symptoms, which will linger long, were pronounced "Pool-Car Palsy". They were acquired from fighting fog on at least four tedious trips. With a degenerated generator, which caused one car to "conk out" completely at midnight, nine miles from nowhere; "haywire" headlights and other more or less minor mechanical mishaps -- 'twas hectic, so help me, but fun!
HAMBURGER OR HEMLOCK

An adage still apt is that "One man's meat may be another man's poison."

Lieutenant General Lauris Norstad, according to a recent issue of LIFE, is the U.S. Air Force's "Thinker". It was reported that, on occasion, he relaxes by reading THE FEDERALIST!

That's all the General and I have in common. I'm a navy man myself, and I dote on the dictionary for diversion. There's no accounting for tastes. Some of the General's Norwegian relatives, it is rumored, resort to fishing—in the summer!

Alexander Hamilton's political papers, brilliant brochures in defense of our country's Constitution, can hardly be hoped to compete with a cogent comic strip like "Li'l Abner" in the minds of a majority of our citizens. That's quite all right by me because I rave with the essayist Addison, "One should take good care not to grow too wise for so great a pleasure of life as laughter."

The pioneer producers of Oregon hops were hairy-chested he-men and their successful survivors are, for the most part, cut from similar cloth. The youngsters who are following in their forebears' footsteps find the school of experience still the most profitable preparation for their profession. I, for one, feel that their fund of formal education is not a true measure of their mentality. Any agriculturist who can average a gross income of $1,339.76 an acre has my profound respect.

FIFTY FIFTY

As a youthful and fatuous father, I used to read reams of nursery rhymes to my trio of receptive offspring. They were fond of folk-tales too. There was one, of Spanish origin, you may remember. It was intriguingly entitled, "Little Half-Chick". That appellation is applicable to your Editor who presumably devotes one-half of his wage-earning week to service as an experimental Plant Pathologist and the other half in earnest Extension endeavor. I am forced, forsooth, to do the best I can with what I've got in the way of the half-days, and nearly all of the nights, at my disposal for dreaming up data which I hope may be of some assistance in rendering my readers helpful to their hop-growing constituents.

SEASONAL SALUTE

Cripes, it's tinsel-and-tinsel time again. A Merry Christmas to you and yours!
MAIL BAG BULGES

Recently placed on my mailing list, by request, were the County Farm Advisors in Mendicino, Sacramento, Sonoma, Tehema, Yolo and Yuba counties, California; County Extension Agents in Ada, Canyon, Payette, and Washington counties, Idaho; County Agents in Franklin, Oneida and Schoharie counties, New York.

Other privileged personages from out-of-state are: Loren L. Davis and Milton D. Miller, Extension Specialists in Agronomy at Davis, California; J. D. Harlan, Associate Professor of Pomology at Geneva, New York; W. R. Harris, Extension Plant Pathologist at Pullman, Washington; and R. J. Haskell, Extension Plant Pathologist at Washington, D. C.

RE: READER REACTION

M. R. Harris, Extension Plant Pathologist, Pullman, Washington. "I found your copy of the newsletter extremely interesting and I would appreciate it very much if you would place me on your mailing list. This type of publication is just the thing I need to keep in touch with what is going on in the hop industry."

Dr. R. J. Haskell, Extension Plant Pathologist, U.S.D.A. Extension Service, Washington, D. C. "The copy of THE HOP PRESS has just been received. Permit me to congratulate you on getting out this interesting and newsy publication....."

BIG LITTLE BUSINESS

There was a total of 4,748 hop growers of record in Oregon in 1948 with a total of approximately 17,505.16 acres under cultivation.

A grouping of yards by acreage shows:

<table>
<thead>
<tr>
<th>Acreage</th>
<th>Number of Growers</th>
<th>Percent of Growers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 25</td>
<td>290</td>
<td>61.2</td>
</tr>
<tr>
<td>26 to 50</td>
<td>95</td>
<td>20.0</td>
</tr>
<tr>
<td>51 to 75</td>
<td>34</td>
<td>7.2</td>
</tr>
<tr>
<td>76 to 100</td>
<td>24</td>
<td>5.1</td>
</tr>
<tr>
<td>Over 100</td>
<td>31</td>
<td>6.5</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>4,748</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

The smallest yard, located in Marion County contained 1.48 acres. The largest yard, located in Polk County contained 1,930.04 acres.

Yields per acre, dry weight, ranged from none, reported by one grower each in Josephine, Linn, Polk, Washington and Yamhill counties, and five growers in Marion County, to 2126.5 reported by one grower in Marion County.

Since the majority of our yards consist of relatively small holdings, it should be possible to push the per acre production level to a much higher point than is the case at present.
<table>
<thead>
<tr>
<th>COUNTY</th>
<th>NUMBER GROWERS</th>
<th>PERCENT OF TOTAL</th>
<th>AV. NO. ACRES PER GROWER</th>
<th>NUMBER ACRES</th>
<th>PERCENT OF TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denton</td>
<td>11</td>
<td>2.3</td>
<td>49.9</td>
<td>549.08</td>
<td>3.1</td>
</tr>
<tr>
<td>Clackamas</td>
<td>73</td>
<td>15.4</td>
<td>22.4</td>
<td>1,635.79</td>
<td>9.3</td>
</tr>
<tr>
<td>Jackson</td>
<td>1</td>
<td>0.2</td>
<td>65.0</td>
<td>65.00</td>
<td>0.4</td>
</tr>
<tr>
<td>Josephine</td>
<td>31</td>
<td>6.6</td>
<td>43.4</td>
<td>1,499.43</td>
<td>8.6</td>
</tr>
<tr>
<td>Lane</td>
<td>12</td>
<td>2.6</td>
<td>15.4</td>
<td>544.44</td>
<td>3.1</td>
</tr>
<tr>
<td>Linn</td>
<td>11</td>
<td>2.3</td>
<td>36.9</td>
<td>406.01</td>
<td>2.3</td>
</tr>
<tr>
<td>Malheur</td>
<td>6</td>
<td>1.3</td>
<td>35.7</td>
<td>214.29</td>
<td>1.2</td>
</tr>
<tr>
<td>Marion</td>
<td>266</td>
<td>56.2</td>
<td>31.5</td>
<td>8,386.62</td>
<td>48.0</td>
</tr>
<tr>
<td>Polk</td>
<td>46</td>
<td>9.7</td>
<td>72.8</td>
<td>3,672.08</td>
<td>21.0</td>
</tr>
<tr>
<td>Umatilla</td>
<td>1</td>
<td>0.2</td>
<td>95.7</td>
<td>95.78</td>
<td>0.5</td>
</tr>
<tr>
<td>Washington</td>
<td>9</td>
<td>1.9</td>
<td>32.5</td>
<td>292.89</td>
<td>1.7</td>
</tr>
<tr>
<td>Yamhill</td>
<td>6</td>
<td>1.3</td>
<td>24.1</td>
<td>144.33</td>
<td>0.8</td>
</tr>
<tr>
<td>TOTALS</td>
<td>473</td>
<td>100.0</td>
<td>47.3</td>
<td>17,505.16</td>
<td>100.0</td>
</tr>
</tbody>
</table>
OREGON HOP YIELDS BY COUNTIES - 1918

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>TOTAL BALES</th>
<th>TOTAL POUNDS</th>
<th>AV. POUNDS PER ACRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benton</td>
<td>2,128</td>
<td>409,610</td>
<td>746</td>
</tr>
<tr>
<td>Clackamas</td>
<td>6,522</td>
<td>1,225,485</td>
<td>768</td>
</tr>
<tr>
<td>Jackson</td>
<td>310</td>
<td>59,675</td>
<td>918</td>
</tr>
<tr>
<td>Josephine</td>
<td>7,228</td>
<td>1,391,390</td>
<td>928</td>
</tr>
<tr>
<td>Lane</td>
<td>2,219</td>
<td>427,158</td>
<td>785</td>
</tr>
<tr>
<td>Linn</td>
<td>1,431</td>
<td>275,468</td>
<td>678</td>
</tr>
<tr>
<td>Malheur</td>
<td>1,217</td>
<td>240,048</td>
<td>1,120</td>
</tr>
<tr>
<td>Marion</td>
<td>39,622</td>
<td>7,627,235</td>
<td>910</td>
</tr>
<tr>
<td>Polk</td>
<td>16,699</td>
<td>3,214,558</td>
<td>875</td>
</tr>
<tr>
<td>Umatilla</td>
<td>806</td>
<td>155,155</td>
<td>1,620</td>
</tr>
<tr>
<td>Washington</td>
<td>1,084</td>
<td>208,670</td>
<td>712</td>
</tr>
<tr>
<td>Yamhill</td>
<td>669</td>
<td>128,783</td>
<td>892</td>
</tr>
<tr>
<td>TOTALS</td>
<td>79,965</td>
<td>15,393,265</td>
<td>913</td>
</tr>
</tbody>
</table>
PROTECTION FOR POLES

Whether we like it or not, a hop vine is a liana — to a botanist! A liana is a climber. In the good old days any old pole would do. Modern hop yards provide a single-wire or cross-wire trellis. The wire is supported by poles. The number of poles required to support an acre of trellis depends on: (1) the distance between rows; (2) the distance between plants in the rows; and (3) the poling pattern employed. The state average is around 50 poles per acre. In 1943 that would mean approximately 885,000 poles, not to mention the "dead-men" needed to anchor them.

Away back around 1934, the cost of poles and anchors in establishing new yards averaged $10.73 per acre. Annual replacement costs thereafter averaged $1.90 per acre. But that was in the "good old days", remember, when a 12-foot unpeeled round fir pole cost four cents and a 20-foot split cedar pole cost fifty cents. Them days are gone forever! Those same cedar poles today would cost $1.50 each or $75.00 per acre. That investment is worth protecting. It is even more important to avoid losses resulting from a collapsed trellis which is usually due to pole failure. Rotten poles are the first to fail.

Charles R. Ross, Farm Forestry Specialist, under date of October 15, 1948 addressed a letter to Western Oregon County Agents offering to assist them in demonstrating the uses of pentachlorophenol as a pole preservative.

"In the Willamette Valley the grubs of one of the wood-boring beetles are often found in the buried butts of rotting hop poles. These large white grubs often attain the size of one's thumb! Their tunnels certainly aid in weakening the poles in which they occur. It is possible that penta-treated poles may be beetle- as well as rot-resistant."

Some difficulty may be experienced in treating the butt ends of 20-foot hop poles by the barrel method. When I suggested this to Ross, he came right back with a reference!

A bulletin was published in March 1948 by Ernest Wohletz and Vernon Ravenscroft of the University of Idaho School of Forestry. The title is, "Cold-Soak Wood Preservation". Figure 20 on page 39 pictures a tank suitable for treating long poles. A copy of this bulletin is well worth having on hand.

PLANTING PATTERNS

The comparative yields of hop acreages both at home and abroad, to be of maximum value, should be based on plantings of a comparable number of hills per acre.

Commonly, though not always, hop hills are planted on the square; i.e. the rows are the same distance apart as the hills are in the rows.

The planting pattern employed makes an appreciable difference in the number of hills per acre which, in turn, affects the per acre yields.

<table>
<thead>
<tr>
<th>Hill Spacing</th>
<th>7 x 7</th>
<th>7 1/4 x 7 1/4</th>
<th>7 1/2 x 7 1/2</th>
<th>8 x 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rows per Acre</td>
<td>29</td>
<td>29</td>
<td>28</td>
<td>27</td>
</tr>
<tr>
<td>Hills per Acre</td>
<td>889</td>
<td>829</td>
<td>774</td>
<td>680</td>
</tr>
</tbody>
</table>
YARDS YANKED

A total of 106.5 acres of Oregon hops have been reported plowed out during 1948.

Counties affected and acreages involved are listed herewith:

Clackamas -- 24, Linn -- 21.36, Marion -- 47.68, and Yamhill -- 13.

DISCONTINUOUS CULTURE

P. C. Magness of Yamhill County plowed out his 28-acre yard this year. This was the second hop yard set out in the county. It had been in hops continuously for 74 years.

UP IN THE AIR

The Civil Aeronautics Administration's register carried, at last count, names of 463 airplane dusting and spraying operators who are using a total of 1,303 planes.

The use of airplanes in applying insecticides and fungicides in dust form, is no longer a novelty even in hop yards.

During 1947, the California State Department of Agriculture recorded a total of 959 acres of hops dusted by planes.

Planes were used in Oregon and Washington too, but a complete record of acres covered is not available; neither are the names and addresses of all operators nor a schedule of their charges.

Ace Flying Service of Salem and Ivan Esau of Dallas, among others perhaps, were available for hop dusting in the Willamette Valley for a flat charge of $1.50 per acre. Some dusting was done by plane around Ontario for a flat charge of eight cents per pound of dust applied.

There is need for further improvement in equipment used and application procedure. More complete and uniform coverage should result in better control of both pests and diseases.

The possibilities of aerial applications of small amounts of finely dispersed liquids have not as yet been demonstrated on hops.

Recent references on the subject may be of interest. They are:

2. FARM RESEARCH, Volume 11, Number 3, July 1918 contains two articles on the use of aircraft in making applications of fungicides and insecticides; (a) "Aircraft Apply Insecticides Thoroughly, Efficiently", by W. A. Rawlins and (b) "Fungicide Cover Important In Tomato Disease Control", by W. T. Schroeder and G. L. Mack.

FEDERAL FIGURES

FOREIGN AGRICULTURAL CIRCULAR is published by the Office of Foreign Agricultural Relations, U. S. Department of Agriculture, Washington, D. C. The issue of November 20, 1948 is devoted to "World's Production of Hops Continues Below Prewar Level". These 36 pages of mimeographed matter are something worth sending for.
BELGIAN BUSINESS

A recent report from a Belgian Experiment Station presents information of interest on "Absorption of Soil Nutrients by Hops during 1945".

There were four varieties under observation: two of them for one year and the other two for four years. They were Buvrinne, Groene Bel, Hallertau and Loerenop. None of these varieties are grown commercially in the United States. In the one-year test it was found that: (1) Buvrinne was much more active at the outset than the other varieties, but its rate of absorption slowed down more rapidly so that its total absorption was similar to that of Groene Bel. This suggests that Buvrinne required a quick-acting manure. (2) The demands of Loerenop and Hallertau were alike and less than those of the other two varieties.

In the four-year tests it was found that: (1) absorption of nutrients continues during the whole of the period of growth, and there is not, as in the case of other plants, a demand for one particular element at any given time; (2) Groene Bel requires more feeding than Hallertau; (3) the requirements for phosphorus are less than those for nitrogen, calcium and potassium; (4) contrary to traditional belief, hops absorb calcium during the whole of their growing period, and in an amount exceeding the demand for potassium.

HOP STORAGE

An international journal, during 1947, carried an account of a "Study of the Keeping of Hops".

Hops of the Zatac variety, from Czechoslovakia, the 1945 crop, were stored for a year in three different lots.

The first lot was in paper packages at a temperature of 32° F., the second in tinplate boxes at 53° - 66° F., and the third in tinplate boxes at room temperature.

At the beginning and end of the storage period, determinations were made on each lot for moisture, total resins, alpha and beta soft resins and hard resins.

The lot kept in paper showed a large increase in moisture content, that kept in boxes at 53° - 66° F. showed no change in moisture, and there was a decrease in moisture content of the hops kept in boxes at room temperature.

The change of soft resins was only slight, but the reduction of alpha resin, with corresponding increase in the beta-fraction, was more marked, and increased rapidly with storage temperature.

The bittering (brewing) values of the year-old hops compared with a value of 100 on the fresh hops, were 85, 72 and 38 for the lots stored at 32° F., 53° - 66° F. and room temperature, respectively.

BURNED BALEs

During 1948 an estimated 300 bales of Oregon hops were lost from fire: 80 in Malheur County and 220 in Marion County. This is a total of 57,750 pounds.
FOUNDATION AFOOT

In the August 1948 issue of the WEST COAST BREWER, which recently reached me, I ran across a provocative paragraph. It announced that the Master Brewers Association of America was sponsoring an industry Research Foundation in the eventual total sum of a tidy $300,000.00.

The M.B.A.A. proposes to provide $50,000.00 of the total and hopes to encourage other elements of the industry to put up the balance.

Foundation funds will be used to sponsor various experimental activities in the industry's interest. Hops, we hope, will be given merited consideration.

The Agricultural Research Foundation of the Oregon Experiment Station has over the years, been the recipient of generous contributions from the Brewers Hop Research Institute. These funds have been used effectively in furthering experimental work with hops.

CHINAMAN'S CHANCE

Centuries before occidentals' eyes were even open, there were some pretty alert orientals. One of them described his bygone business world thus: "Big fish eat little fish; little fish eat shrimp; shrimp eat mud."

According to the November 3 issue of the Pacific Coast Edition of the WALL STREET JOURNAL, a similar situation is facing the consumers of hops. Under a heading "Blues At The Brewery" it was stated that in 1947 three of the largest manufacturers made 20 percent of the national sales. One of the smaller manufacturers prophesied that 25 percent of the "small fry" would fail in the next two years. If this contraction of market outlets continues the position of the American hop producer may become precarious.

AUSSIE CROP AUGMENTED

The following note was noted in SCIENCE NEWS LETTER for November 20, 1948.

"Although Australia produces nearly 2,500,000 pounds of hops each year, it does not grow enough to meet the needs of the domestic breweries."

WIRE WEIGHTS

Thought you might like to know the number of feet per pound of hop trellis wire. Here's the "info" on a few of the common gauges.

The heavy gauges, used for the framework, are usually black. The lighter gauges, used for cross or "drop" wires, to which the strings are attached, are usually galvanized.

<table>
<thead>
<tr>
<th>Gauge</th>
<th>No. 6</th>
<th>No. 8</th>
<th>No. 10</th>
<th>No. 0</th>
<th>No. 00</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. Ft. Per Lb.</td>
<td>10.17</td>
<td>14.29</td>
<td>20.57</td>
<td>3.91</td>
<td>2.92</td>
</tr>
</tbody>
</table>

RADIO REPRINTS

Since my reference to this item in the November 15 issue of THE HOP PRESS Clackamas and Washington counties have been added to the list of those receiving copies of my monthly broadcasts.

Sp-33-27
January 29, 1949

PERSIAN POETRY

Edward Fitzgerald's translations of the querulous quatrains of OMAR, ancient astronomer and playful poet, are relished by the recluse. The four most oft-quoted lines refer, among other enticing emoluments, to a loaf of bread and a jug of wine! Personally, I prefer the "beer and pretzels" philosophy of the less familiar KASIDAH, as translated by Sir Richard Francis Burton.

Diet and erudition are inseparable!

More forthright literature than that prepared by the Persians sometimes serves a particular purpose most satisfactorily when interpreted by a competent commentator cognizant of the poetic license allowed the translator.

Let's take, for example, a highly commendable compilation entitled "Oregon Farms An $850,000,000 Plant" issued last October as Oregon Extension Circular 524.

The word "hops" appears but twice, which furnishes my cue for comment here.

In 1946 the average hop yield was 940 pounds per acre on 20,000 acres. The average price per pound received by growers was 62 cents for a total of $11,656,000, and that neighbors, ain't hay!

Per capita grower income compares favorably with that from many more highly publicized agricultural products.

Hops lead the list of the eleven items mentioned in estimated percent sold outside Oregon. This situation places the crop, in cogitating "opportunities ahead", in a conspicuous position. It becomes increasingly essential for producers to concentrate upon quality, both physical and chemical.

To improve quality in view of progressively increasing costs of production necessitates, as a goal, more pounds per acre in order to minimize the cost of production per pound.

FORMULA FOR FORTY NINE

Appropriate procedure for insuring increased output is predicated upon:

DISCUSSION - DECISION - PLAN - ACTION!
FORGOTTEN FOOTNOTE

Reference is made to the tables on pages 3 and 4 of the December 20, 1948 issue of THE HOP PRESS.

In my haste to complete the copy so that the Yuletide respite could be spent with a parent in distant parts, I failed to give credit to the U. S. Hop Growers Association as the source of basic information. Amends are made herewith.

It should have been indicated too that in arriving at poundages, bale weights were figured at 192.5 pounds each.

NEW NAMES

Added to THE HOP PRESS mailing list, by request, since our December issue, are County Agents in Benton, Franklin, Grant, Pierce and Yakima counties, Washington.

Dr. P. F. Knowles, Division of Agronomy at Davis, California has been similarly served.

METHODS OF HOP IMPROVEMENT

The following account by a Belgian author appeared in an English journal late in 1948. "Apart from methods of cultivation, the standards of hop quality can be raised either by selection and propagation of plants of established varieties which are seen to show superior qualities, or by hybridization. The author prefers the former means as being of more practical value and giving quicker results. The most important factors in judging a hop are given as (1) the type of cone, (2) the aroma, (3) the alpha resin content and bittering value, and (4) the cultural behavior and yield. Complementary of these are the density of the cones and the length/breadth ratio of the petals, which indicate deviations in the normal form of a variety, and enable one variety to be distinguished from another even in a mixture of hops. A point system of evaluating hops based on these qualities is put forward, with deduction of points for the presence of dirt, seeds, or for bad handling. Using the foregoing criteria, a number of selected strains of the Tettnang and Hallertau varieties have been grown successfully in recent years. As an example, 5 sets of a Hallertau were selected in 1941 and by 1945 the plantation of hops derived from these sets was uniform, all plants of inferior or divergent type having been eliminated. Hops from this plantation were awarded 71 points out of a possible 90 in 1945 and again in 1946, and gained first place among Belgian hops in both years. By comparison, the original field of hops from which the selections had been made in 1941 were awarded only 61 points at that time."

SELF-SERVICE

Referring to the Oregon Hop Producers Co-op, a local sales set-up, the MOUNT ANGEL NEWS in its issue of November 25, 1948 stated "manager Willig reports that all the 1948 hop crop in the Oregon Hop Producers Co-op have been sold. At present the Co-op is working, trying to sell hops for the members that have joined since its Co-op pool has been marketed."
From Yakima, under date of December 22, 1948 came the following account of the "Outlook For State Hops".

"Hop growers in Washington, the nation's leading hop-producing state, are in a strong position in spite of declining market prices, a Washington State College economist said here today.

Karl Hobson, associate extension economist in prices, said today that Washington growers are favored by high per-acre yields and a high quality product. Washington produces a higher proportion of seedless hops than other producing areas in the United States, a favorable factor in itself as far as demand is concerned.

Current hop prices, Hobson said, are about half what they were a year ago. Quotations in late November varied from 35 to 50 cents a pound, depending on leaf and stem content, and whether seeded, semi-seedless, or seedless.

The weaker hop market, the WSC expert explained, is the result of larger world supplies of hops and the tendency of breweries to use a smaller quantity of hops per barrel of beer.

Hobson pointed out that North-central European countries, large pre-war hop producers, are gradually coming back into production and are beginning to supply part of the world markets again. Before the war, these countries produced over 10 percent of the world's hops. At present they are producing about 25 percent of the world's total and their competition is again being felt. Their output is still about 10 percent below pre-war figures as it takes time to get hop yards back into production.

The United States' wartime 30 percent increase in hop production was a move to help fill the gap in world supply left by the drop in exports from North-central Europe. At the same time, hop production in the United Kingdom increased 20 percent.

The state of Washington was responsible for the biggest wartime increase in this country. State hop production shot up 140 percent from 1939 to 1948. California registered a 6 percent increase, and Oregon a 13 percent decrease.

Before the wartime increase, Washington was the third state in hop production, accounting for less than one-fourth of the nation's supply. At the present time, state hop growers produce over half the nation's supply. Washington acreage is still below that of Oregon but yields are much higher since most of Washington's hop yards are irrigated, and are free from downy mildew which is prevalent in competing areas."

The only comment I care to make refers to the last line of the above quotation. Downy mildew was well established in Washington before it was found in Oregon. Western Washington growers were forced to favor Fuggles because of the severe damage done by this disease to their Clusters varieties. Last season considerable concern was occasioned by the downy mildew damage reported from Yakima.
Reported high point of hop prices to producers during 1948 was 73 cents per pound. Current quotations are 25 to 30 cents per pound. That's fluctuation with a vengeance! For western Oregon, the estimated cost of production was officially placed at 55.5 cents per pound.

MERE MENTION

M. L. Unchurch is author of an interesting bulletin entitled, "Oregon's Capacity To Produce". It was issued in October 1948 as Oregon Station Bulletin No. 459. There's a reference to hops on page 16, but you'll have to get out grandpa's reading glass to find it!

LOUSY LITTERS

Under favorable environmental conditions, in Oregon, a mama hop louse may be responsible for as many as twelve generations from the time she hatches from an egg on a prune tree, usually late in May, up to the time the hops are ready for harvest.

She may produce, with a paucity of paternal patronage, forty living young in each of the 12 generations.

Now if all of her descendants should live, there would be alive at one time 560 quadrillion aphids. They would weigh about 8 times as much as all the human inhabitants of the earth!

BUG BULLETIN

A relatively new pest on hops which did little commercial damage but created considerable interest among hop growers in the Willamette Valley the past season was the oblique-banded leaf roller.

A recent bulletin tells all about this pest. It was published in April 1948 by the Oregon Agricultural Experiment Station as Technical Bulletin 13. The authors are Joe Schuh and Don C. Mote. The title is, "The Oblique-Banded Leaf Roller on Red Raspberries."

INDUSTRY INFORMATION

The A.I.F. NEWS is published periodically by the Agricultural Insecticide and Fungicide Association, 205 Madison Avenue, New York 17, New York. Trade topics of current concern are covered in condensed form. Contents may be quoted or reprinted without special permission.

County Extension Agents in hop-growing counties may find it worthwhile to write direct to the Association to have their names placed on the free mailing list.

WISHFUL THINKING

Word came recently through the California State Department of Agriculture that there had been an inquiry from Sacramento relative to adding certain chemicals to liquid fertilizers to control downy mildew of hops. Two chemicals mentioned were malachite green and fluorocine. We're awaiting further details before we care to make critical comment.
LAW ON THE FARM

I used to sell books, or try to, when I was a college boy but I'm not working at it now. I did run across a reference recently that might be of interest. It's a book entitled "Law On The Farm" by Harold W. Hannah, Professor of Agricultural Law, University of Illinois. The Macmillan Company published it in 1948. If interested, write them for details.

CALIFORNIA CONTRIBUTION

THE BULLETIN, official monthly publication of the California State Department of Agriculture, at Sacramento is "Devoted to agriculture in its broadest sense."

This is a first class way of securing first hand information sometimes applicable to the solution of some of the hop production problems of the Pacific Coast. I'm not sure you can get on the mailing list, but it won't do any harm to try.

CHEMICAL COMMENTS

The NEWS LETTER, published monthly by the Stauffer Chemical Company (Pacific Northwest Division) North Portland, Oregon occasionally contains items of interest to hop growers.

If you are not receiving this Letter and would like to look at it regularly I am sure the company would add your name to their mailing list with alacrity, upon request.

CROWN TREATMENT

AMERICAN CYANAMID is published by the American Cyanamid Company, Agricultural Chemicals Division, 30 Rockefeller Plaza, New York 20, N. Y. This is another pretty neat pocket-size production of an industrial organization alert to the possibilities of their products in the advancement of agriculture. One of their products, calcium cyanamid, is being recommended for use as a crown treatment in hop downy mildew control. Early in 1947 this company published a leaflet entitled "Control Downy Mildew". Unfortunately, they used some of our early experimental data without giving us an opportunity to bring them up to date. The leaflet suggests the use of 4 to 8 ounces of AERO Cyanamid, Granular, per hill. Our current recommendation is 2 ounces per hill. Even on well-established hills, some burning may result if the larger amounts of material are used when the crowns are not completely dormant. It should not be used on replants.

DOW DIVULGES

DOWN TO EARTH, A REVIEW OF AGRICULTURAL CHEMICAL PROGRESS is published by the Dow Chemical Company, Midland, Michigan, Eugene Perrin, Editor. This is a well-illustrated trade magazine that makes informative and interesting reading.

In Volume 4, No. 2, published in the fall of 1948, a timely article appeared under the title, "Pentachlorophenol Treating Plants For Farm Communities".
DU PONT DOPE

The AGRICULTURAL NEWSLETTER published by the Extension Division, Public Relations Department, E. I. du Pont de Nemours & Company (Inc.), Wilmington 98, Delaware contains much useful information, some of it applicable to the hop-growing enterprise. If you do not receive this publication regularly, you might find it worthwhile to request that your name be placed on the mailing list. Your request will be promptly granted, gratis!

FERTILIZER FACTS

POTASH NEWS LETTER FOR WESTERN TERRITORY is published by the American Potash Institute, Inc., 311 First National Bank Building, San Jose, California. Reprint privilege is granted. This organization also issues a number of reprints and wall charts, in color, for free.

OFFICIAL OFFERING

USDA is published fortnightly for distribution to employees only. Lots of interesting information appears in this little leaflet. If interested, write Mrs. Monica T. Crocker, Division of Training, Office of Personnel, U.S.D.A., Washington 25, D.C., Room 317 W.

POTASH PUBLICATION

BETTER CROPS WITH PLANT FOOD is published by the American Potash Institute, Inc., R. H. Stinchfield, Editor, 1155 Sixteenth Street, N.W. Washington, D.C.

If this little monthly mag does not reach your desk regularly, it should! It's pocket-size, printed on slick paper with good illustrations. The "Reviews" section carries an imposing current list of references to agricultural publications. Personally, Jeff McDermid's feature stories have been a source of pleasure for many years. There's always a page of "Whinnies", in case you prefer them to the section devoted to "The Editors Talk".

BRITISH COLUMBIA BROCHURE

Walter Jones, Plant Pathologist, Dominion Laboratory of Plant Pathology, Saanichton, B.C., recently sent me a typed copy of a paper he prepared March 21, 1948. The title was, "DISEASES AND PESTS OF HOPS IN BRITISH COLUMBIA". The paper presents brief description of, and suggested control measures for the following: downy mildew, virus diseases - chlorosis and mosaic, hop aphid, flea beetle, red spider, needle-nosed hop bug.

BRITISH BUSINESS

BREWER AND DISPENSER, issue for October 1948, carried the account that Britain this year for the first time in many years will grow enough hops to supply her own needs and sell some abroad. The Union of South Africa may take some. England will buy 600 cwt. from Bavaria and Czechoslovakia for special lagers providing the British government will authorize the necessary currency exchange.
COOKING WITH BEER

COLLIER'S issue of January 22 carried a two-page spread, in color, featuring this culinary caprice. Any additional outlets for fermented malt beverages would bring about an enlarged market for hops which would be helpful during the current hop supply and demand situation which has sharply reduced the price-per-pound to producers.

INVESTMENT ITEMS

The following facts were obtained from a report by G. W. Kuhlman, Farm Management Department. They show the "estimated investment per acre represented in hop yards, exclusive of land and of farm buildings other than those used in the hop enterprise, Willamette Valley, Oregon."

<table>
<thead>
<tr>
<th>Item</th>
<th>Base Period</th>
<th>Ratio</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor on trellis and growing</td>
<td>$55</td>
<td>1.75</td>
<td>$253</td>
</tr>
<tr>
<td>Materials and equipment</td>
<td>$14</td>
<td>1.94</td>
<td>85</td>
</tr>
<tr>
<td>Drier and storeroom</td>
<td>$17</td>
<td>1.94</td>
<td>91</td>
</tr>
<tr>
<td>Machinery</td>
<td>$50</td>
<td>1.94</td>
<td>97</td>
</tr>
<tr>
<td>Total</td>
<td>$196</td>
<td>263</td>
<td>$526</td>
</tr>
</tbody>
</table>

* Data from Station Bulletin 364, "Cost and Efficiency in Producing Hops in Oregon."

** The index of labor is based on Oregon farm wages per month without board as reported by the Bureau of Agriculture Economics, U.S.D.A. The index for other costs are based on the index of production costs (prices paid by farmers for commodities interest and taxes) as reported in "The Agricultural Situation" published monthly by the Bureau of Agricultural Economics, U.S.D.A.

OREGON'S RANK

In 1948, Washington, Oregon and California ranked one, two and three in the order named in hop production. Washington's crop of 22.70 million pounds was 12 percent greater than in 1947. The Oregon crop of 15.75 million pounds was 2 percent under last year while California's crop was down 16 percent to around 11.33 million pounds.

ORDER NITROGEN NOW

The DAILY SUMMARY published by the U.S.D.A., Washington 25, D.C., for December 8, 1948 printed the following paragraph. "Despite a generally brighter outlook for fertilizer this year, prospects for nitrogen are only slightly better than last year and supplies can be expected to continue tight. Their estimate for the 1948-1949 fiscal year indicates that instead of an earlier estimated increase of 10 percent, supplies of nitrogen for the current fiscal year will level off at about 7 percent increase. About 5 percent more phosphate and 10 percent more potash will be available.
### Growers and Acreage

<table>
<thead>
<tr>
<th>State</th>
<th>No. of Growers</th>
<th>Percent of Total</th>
<th>Av. No. Acres Per Grower</th>
<th>No. of Acres</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>126</td>
<td>12.37</td>
<td>72.75</td>
<td>9,166.54</td>
<td>22.6</td>
</tr>
<tr>
<td>Idaho</td>
<td>9</td>
<td>0.88</td>
<td>69.71</td>
<td>627.40</td>
<td>1.5</td>
</tr>
<tr>
<td>New York</td>
<td>34</td>
<td>3.34</td>
<td>6.97</td>
<td>237.00</td>
<td>0.6</td>
</tr>
<tr>
<td>Oregon</td>
<td>473</td>
<td>46.42</td>
<td>37.00</td>
<td>17,504.09</td>
<td>43.2</td>
</tr>
<tr>
<td>Washington</td>
<td>377</td>
<td>36.99</td>
<td>34.53</td>
<td>13,019.54</td>
<td>32.1</td>
</tr>
<tr>
<td>Totals</td>
<td>1,019</td>
<td>100.00</td>
<td>44.19</td>
<td>40,554.57</td>
<td>100.0</td>
</tr>
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</table>

### Yields, Dry Weight

<table>
<thead>
<tr>
<th>State</th>
<th>No. of Bales*</th>
<th>No. of Pounds</th>
<th>Percent of Total - Pounds</th>
<th>Av. No. Pounds Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>59,209</td>
<td>11,297,077</td>
<td>22.46</td>
<td>1,232.42</td>
</tr>
<tr>
<td>Idaho</td>
<td>3,355</td>
<td>659,258</td>
<td>1.31</td>
<td>1,050.77</td>
</tr>
<tr>
<td>New York</td>
<td>1,005</td>
<td>193,563</td>
<td>0.39</td>
<td>816.72</td>
</tr>
<tr>
<td>Oregon</td>
<td>79,791</td>
<td>15,678,932</td>
<td>31.17</td>
<td>895.73</td>
</tr>
<tr>
<td>Washington</td>
<td>117,880</td>
<td>22,467,928</td>
<td>44.67</td>
<td>1,725.70</td>
</tr>
<tr>
<td>Totals</td>
<td>260,235</td>
<td>50,296,758</td>
<td>100.00</td>
<td>1,235.45</td>
</tr>
</tbody>
</table>

* Average number of pounds per bale: California - 190.8; Idaho - 196.5; New York - 192.6; Oregon - 196.5; Washington - 190.6. Average of all states - 192.6.

Data furnished, in large part, by the U. S. Hop Growers Association.
February 23, 1949

NAUGHTY NERO

Claudius Caesar Drusus Germanicus Nero was not a nice man! He was brutal, cruel and licentious. His fourteen-year rule over the Romans was characterized by song, wine, women — and worse! The old "so-and-so" was a suicide in 68 A.D., aged thirty-one!

The mists of time, fortunately, obscure many of the details of his dire doings. Posterity pictures him as "fiddling while Rome was burning".

So serious has this shortcoming been considered by succeeding generations of service-minded men that it has become a proverb of procrastination or postponement; of putting off until tomorrow what should be done today!

Many otherwise highly intelligent hop growers in these United States, it would seem, have elected to emulate Nero in "plucking the fiddle strings" when they should be more constructively concerned with their own interests.

I know of no agricultural enterprise that means so much to so few as hop growing.

The U. S. Hop Growers Association is a "grass-roots" group open to all of the nation's 1,019 growers. Active participation in Association activities is based upon a self-imposed annual "baleage tax" of 20 cents per bale produced. The average contribution in 1948 would have been $51.00 per grower-member.

The Association would have been blessed with a relatively bounteous budget of $52,000.00. Such a sum would provide the means by which the collective interests of the industry can best be served.

The ogre of overproduction, alone, should supply sufficient stimulus for all hop growers to pull together. Current market conditions, for many, may mean a choice between "collective bargaining" and bankruptcy.

Aesop, the celebrated fabulist, lived some six centuries before naughty Nero was born. He was a pioneer exponent of cooperation. The "moral" of one of his fables was, "In Unity Is Strength"!

FARM TRIO FOR FEBRUARY

Three weighty words for hop growers and those who work with them: INTEREST - ENTHUSIASM - IMAGINATION
MORE MAILINGS

Recently added to our roster of recipients of THE HOP PRESS were:

A. Irving Dow, M.S., Assistant Agronomist. Dow was recently appointed a joint representative of U.S.D.A., Division of Tobacco, Medicinal and Special Crops and the Washington Agricultural Experiment Station. He will be stationed at the Irrigation Experiment Station, Prosser, Washington and will devote full-time to the regional hop production, breeding, disease and quality investigations.


HOP GROWERS ELECT

At the recent district meetings, the following Growers Advisory Committee members were elected for the Oregon-Idaho area for 1949:

<table>
<thead>
<tr>
<th>DISTRICT NO.</th>
<th>COMMITTEE MEMBERS</th>
<th>ADDRESSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ben Hull</td>
<td>Rt. 2, Box 396, Grants Pass</td>
</tr>
<tr>
<td>2</td>
<td>L. S. Christofferson</td>
<td>P.O. Box 366, Eugene</td>
</tr>
<tr>
<td>3</td>
<td>J. A. Winn</td>
<td>Rt. 1, Albany</td>
</tr>
<tr>
<td>4</td>
<td>G. F. Hadley</td>
<td>Route 2, Independence</td>
</tr>
<tr>
<td>5</td>
<td>Herman Goschie</td>
<td>Route 1, Silverton</td>
</tr>
<tr>
<td>6</td>
<td>Ray Kerr</td>
<td>3650 Portland Blvd., Salem</td>
</tr>
<tr>
<td>7</td>
<td>Donald Batt</td>
<td>Wilder, Idaho</td>
</tr>
<tr>
<td>8</td>
<td>V. O. Kelley</td>
<td>Box 38, Ontario</td>
</tr>
<tr>
<td>9</td>
<td>Joe Serres</td>
<td>Route 1, Woodburn</td>
</tr>
<tr>
<td>10</td>
<td>Ray J. Glatt</td>
<td>Woodburn</td>
</tr>
<tr>
<td>11</td>
<td>Carl J. Smith</td>
<td>St. Paul</td>
</tr>
<tr>
<td>12</td>
<td>John Buchanan</td>
<td>Cornelius</td>
</tr>
<tr>
<td></td>
<td>Harvey Kase</td>
<td>Hermiston</td>
</tr>
</tbody>
</table>

At their organization meeting on February 8, Ray J. Glatt was elected chairman and Herman Goschie was elected secretary of the Committee.

Dean H. Walker, Ray J. Glatt, Ben Hull and Ray Kerr were nominated as candidates to appear on ballots to be sent to Oregon and Idaho members for election of two Directors from the area for the coming year.

TAVERN TOPICS

THE BREWER AND DISPENSER is the official organ of District Northwestern, Master Brewers Association of America. Sidney Deede is Editor and Publisher, 303 Maritime Building, Seattle, Washington.

This "trade paper" is printed monthly and often contains items pertaining to the hop industry.
RESIN RESEARCH

A recent reprint from Archives of Biochemistry, Vol. 19, No. 2, November, 1948 reports on work by H. David Michener, Neva Snell and Eugene F. Jansen done at the Western Regional Research Laboratory, Albany, California. The title of the paper is, "Antifungal Activity of Hop Resin Constituents and a New Method for Isolation of Lupulon".

A new method for the preparation of lupulon from soft resin of mature hops is described. All of the antifungal activity was found in the soft resin which showed antibiotic activity against 12 species of fungi. The concentrations causing 50 percent inhibition of growth ranged from 0.4 to 1600 milligrams per liter. Lupulon, humulon and a yellow resinous fraction were active against the fungi tested.

Humulon was the most active, giving 50 percent inhibition at concentrations ranging from 9 to 60 milligrams per liter. Under the test conditions complete inhibition of mycelial growth was frequently not found even at relatively high concentrations. Germination of the spores of one of the fungi was completely inhibited. Slight activity was found against 2 out of 7 yeasts.

The antibiotic possibilities of derivatives of soft resin of hops are being studied in connection with human disease. Reports of results are being awaited with much interest.

HOP HOER

The Independence ENTERPRISE, issue of January 11, 1949 carried an illustrated article of interest. The title was, "New Hop Hoeing Machine Built by W. A. Sloper to Speed-up Work". A partial quotation follows, "W. A. Sloper, hop grower who lives 4 miles south of Independence, has perfected a hop hoeing machine that he claims will save hop growers from $.10 to $.15 an acre in the hoeing of their hops."

"The machine that he has built is mounted on a trailer with two wheels and has three units that swing from the rear of the frame and will hoe three rows of hops planted seven to eight feet apart. The units are counterbalanced to allow the operator to lift the blades from the ground easily. Each unit has two sets of blades, one which passes directly over the hop root and cuts off the suckers and old stubs and the other which stirs up the soil to a mulch around the hill. The operation of the blades is powered by a .5-hp air cooled engine and the trailer can be drawn by a tractor or a jeep. The blades for the hoes are driven by a flexible shaft from the main power drive and supported on a swing boom making it possible for the operator to spot the hoe over the hop hill with a swing of about two feet. Mr. Sloper claims that the machine does better work than the hand hoeing taking three and one-third seconds to the hill, the knives or blades striking 1048 times around the hill and over the top of it. A good day's work by hand hoeing is 200 hills.

"Mr. Sloper states that he will build a two unit hop hoeing machine as well as the three unit one. The machine which he has built was tried out at the Sloper hop ranch last spring in a yard which had been idle for two years. The yard was swamped with weeds and the hop hills were hard to locate, but the machine did an excellent job, according to Mr. Sloper."
**ORGANIC MATTER**

Dr. C. O. Stanberry, Assistant Agronomist, Irrigation Experiment Station, Prosser, Washington is responsible for the following compilation of the "relative value of various organic materials as fertilizers when compared with barnyard manure on the basis of their N, P₂O₅, and K₂O content."

<table>
<thead>
<tr>
<th>Fertilizer material</th>
<th>Percent Moisture</th>
<th>N</th>
<th>P₂O₅</th>
<th>K₂O</th>
<th>Relative value (Barnyard manure = 1.00)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnyard manure (0.5-0.25-0.5)</td>
<td>75</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Alfalfa hay</td>
<td>10</td>
<td>1.70</td>
<td>1.92</td>
<td>4.86</td>
<td></td>
</tr>
<tr>
<td>Apples</td>
<td>82</td>
<td>0.16</td>
<td>0.08</td>
<td>0.34</td>
<td></td>
</tr>
<tr>
<td>Apple pomace</td>
<td>79</td>
<td>0.12</td>
<td>0.20</td>
<td>0.24</td>
<td></td>
</tr>
<tr>
<td>Bean straw</td>
<td>11</td>
<td>1.96</td>
<td>1.20</td>
<td>2.46</td>
<td></td>
</tr>
<tr>
<td>Carrot, roots</td>
<td>88</td>
<td>0.38</td>
<td>0.36</td>
<td>0.96</td>
<td></td>
</tr>
<tr>
<td>Corn, canning factory waste</td>
<td>78</td>
<td>0.64</td>
<td>0.56</td>
<td>2.60</td>
<td></td>
</tr>
<tr>
<td>Corn cobs</td>
<td>0</td>
<td>0.70</td>
<td>0.40</td>
<td>0.60</td>
<td></td>
</tr>
<tr>
<td>Corn stalks</td>
<td>19</td>
<td>1.30</td>
<td>0.72</td>
<td>3.62</td>
<td></td>
</tr>
<tr>
<td>Corn stover</td>
<td>78</td>
<td>0.52</td>
<td>0.52</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>Feathers</td>
<td>--</td>
<td>30.60</td>
<td>24.00</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>Fish meal and scraps</td>
<td>--</td>
<td>3.20</td>
<td>3.00</td>
<td>1.50</td>
<td></td>
</tr>
<tr>
<td>Garbage tankage</td>
<td>--</td>
<td>1.20</td>
<td>1.10</td>
<td>1.10</td>
<td></td>
</tr>
<tr>
<td>Grape pomace</td>
<td>50</td>
<td>1.60</td>
<td>0.64</td>
<td>0.24</td>
<td></td>
</tr>
<tr>
<td>Hop leaves and vines</td>
<td>--</td>
<td>1.20</td>
<td>1.20</td>
<td>2.70</td>
<td></td>
</tr>
<tr>
<td>Manure, dried commercial poultry</td>
<td>--</td>
<td>10.00</td>
<td>7.80</td>
<td>2.32</td>
<td></td>
</tr>
<tr>
<td>Manure, fresh (liquid &amp; solid) cattle</td>
<td>--</td>
<td>4.60</td>
<td>7.12</td>
<td>2.60</td>
<td></td>
</tr>
<tr>
<td>Manure, fresh (liquid &amp; solid) cow</td>
<td>86</td>
<td>1.20</td>
<td>0.60</td>
<td>0.90</td>
<td></td>
</tr>
<tr>
<td>Manure, fresh (liquid &amp; solid) sheep</td>
<td>55</td>
<td>2.00</td>
<td>3.20</td>
<td>0.80</td>
<td></td>
</tr>
<tr>
<td>Manure, fresh (liquid &amp; solid) horse</td>
<td>78</td>
<td>1.40</td>
<td>1.00</td>
<td>1.10</td>
<td></td>
</tr>
<tr>
<td>Pea straw</td>
<td>78</td>
<td>1.90</td>
<td>1.10</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>Pea vines, from canneries</td>
<td>--</td>
<td>1.10</td>
<td>1.10</td>
<td>0.80</td>
<td></td>
</tr>
<tr>
<td>Pine needles</td>
<td>--</td>
<td>2.64</td>
<td>2.64</td>
<td>0.90</td>
<td></td>
</tr>
<tr>
<td>Potato, leaves and stalks</td>
<td>--</td>
<td>1.20</td>
<td>0.60</td>
<td>0.90</td>
<td></td>
</tr>
<tr>
<td>Potato tubers</td>
<td>79</td>
<td>0.70</td>
<td>0.70</td>
<td>1.08</td>
<td></td>
</tr>
<tr>
<td>Rutabagas, roots</td>
<td>89</td>
<td>0.48</td>
<td>0.48</td>
<td>0.98</td>
<td></td>
</tr>
<tr>
<td>Sewage sludge</td>
<td>--</td>
<td>1.08</td>
<td>1.32</td>
<td>0.88</td>
<td></td>
</tr>
<tr>
<td>Sorghum, sweet</td>
<td>75</td>
<td>0.18</td>
<td>0.36</td>
<td>0.90</td>
<td></td>
</tr>
<tr>
<td>Sunflower</td>
<td>88</td>
<td>0.68</td>
<td>0.36</td>
<td>1.56</td>
<td></td>
</tr>
<tr>
<td>Sunflower, whole plant</td>
<td>84</td>
<td>0.14</td>
<td>0.28</td>
<td>1.02</td>
<td></td>
</tr>
<tr>
<td>Tankage or meat meal</td>
<td>7</td>
<td>17.92</td>
<td>35.28</td>
<td>5.02</td>
<td></td>
</tr>
<tr>
<td>Vetch, hairy</td>
<td>82</td>
<td>1.30</td>
<td>0.56</td>
<td>1.02</td>
<td></td>
</tr>
<tr>
<td>Wheat straw</td>
<td>10</td>
<td>1.22</td>
<td>0.64</td>
<td>1.92</td>
<td></td>
</tr>
</tbody>
</table>
FERTILIZER FIELD TRIALS

Cooperative relationships were established during the past season with representatives of a large commercial concern interested in merchandising hop fertilizers.

Field trials were established on a total of 6 yards in Marion, Polk and Umatilla counties.

Results obtained were inconclusive for several reasons: (1) No untreated, or check, plots were established for purposes of comparison with treated plots; (2) no yield data was obtained. Sixteen samples of hops were taken and dried separately to get the dry-down ratio. Chemical analyses of the samples were run. They were of little value in the absence of samples from check plots.

Copies of the company's soil analyses, interpretations of individual yard soil fertility requirements, including the minor elements, and recommendations for cover-crop-fertilizer programs were made available to us.

This information was carefully reviewed by Dr. R. E. Stenphenson of the Soils Department at the Oregon Experiment Station. The informal report of his findings follows:

"The various fertilizer formulae, 10-16-10, 10-16-12, 10-16-16, 10-20-10, 8-11-8 and 8-16-8 are good mixtures, in themselves. The 1000 pound per acre rate, which is frequently recommended, is a good rate.

The green manure program is sound; every formula contains an abundance of sulfates, more than could be needed in most cases, and additional sulfur would not be needed.

The ideal soil should be perhaps pH 6.5, but it is doubtful if there is any response to lime on soils of pH 6.0 or above.

There might be justification for using some extra phosphorus with the above fertilizer formulae, especially on soils somewhat low in available phosphorus.

The essential elements coming from the soil, for plants, are: P, K, N, S, Ca, Fe, Mg, Cu, Zn, Mn, B, with a possibility of molybdenum for some plants. Iodine, cobalt and sodium are not essential for plant growth. The only known deficiencies for any crop in Western Oregon, outside of N, P, K, are boron and sulfur, and it is not known that there is a deficiency of either boron or sulfur for hops. To apply Fe, zinc, copper, and manganese, except experimentally, is nearly certain waste of money."

MINOR MATTER


-5-
COLOMBIAN CONSUMPTION

The BREWER AND DISPENSER, issue of December 1948 carried the following account,

"Yakima Valley, Washington, hops have found favor in the republic of Colombia, South America.

Luis Alvaro Barbosa spent his second season in Yakima to buy $950,000' worth of the valley's 1948 hop harvest for the Bavaria Brewery Corporation, which operates 13 breweries in Colombia. The concern intends to open five more breweries in 1949.

During his four-month stay in Yakima Valley last year, Mr. Barbosa purchased $600,000 worth of hops.

He was sent to the United States to buy directly from growers.

"I am happy with the class of hops I have been buying, and I can say that the corporation will continue to buy hops here as long as prices and quality are good," the South American was recently quoted in the YAKIMA REPUBLIC.

The concern bought 6,500 bales, or 1,250,000 pounds this year. These were put up for export in 3,250 boxes. All shipments were inspected by Mr. Barbosa before they went into 20 days of storage for curing before compression for shipment.

Special attention must be given for export. A burlap cloth is laid on the flat surface of the bottom half of the compressor, followed by a rubber-like plastic sheet. Two bales of hops are then stacked on the wrapping and the compressor, exerting 3,000 pounds pressure squeezes the bales together.

Workmen then seal the plastic sheet and sew the burlap. The compressed bale is bound by a series of steel wires. The new bale is boxed and marked for shipment. As a final precaution, steel straps are bound around the boxes.

It cost the Bavarian company $65,000 just to press the hops.

The present method of hermetically sealing the hops was arrived at after prolonged study, the buyer explained. As a result hops are now waterproof and sealed off from contamination en route.

The corporation does not have a monopoly on the beer business in Colombia, Mr. Barbosa said. There are three other organizations and all of them buy hops in the United States."

COUNTY DATA BOOK

NEW VARIETIES OF HOPS

WALLERSTEIN LABORATORIES COMMUNICATIONS for December 1948 abstracted an article, which originally appeared in the English JOURNAL OF THE INCORPORATED BREWER'S GUILD as follows: "New English varieties of hops may be divided into three main classes: hops with a flavor characteristic of American hops which may be regarded as substitutes for American hops, hops to replace or augment the English varieties, and special purpose hops.

The American-type hops are considered to have a more pungent and bitter flavor than English ones. Among such hops Brewers' Gold is noteworthy for its excellent aroma, very high preservative value, resistance to mosaic disease, and heavy yield. However, it matures rather late, requires special treatment in growing, and does not keep well. Bullion, favored by the author, is a characteristic American-type hop and very well suited for machine picking. Its keeping qualities are superior to those of Brewers' Gold.

In the English class, Northern Brewer, John Ford, and Wye Field Golding have outstanding keeping qualities and high preservation value, pick easily, and do not contract mosaic disease. They carry the mosaic virus, however, and cannot be grown in the vicinity of Goldings.

In the special hops class, five new varieties are mentioned. These have in common their tolerance of Verticillium wilt and are the only hops which can be grown in the Weald of Kent, a hop-growing region infected with this disease."

MURPHY'S MACHINE

In the December 1948 issue of THE BREWER AND DISPENSER I found the following information:

"What the cotton gin means to the south a new hop picking machine will mean to hop growers, is the confident prediction made by C. W. Murphy, of Harrisburg, Oregon, inventor. Mr. Murphy used the hop picker briefly last year, but has greatly improved it this year. He moved a large crop through it. He invites anyone interested to drop in and see it at his hop ranch. The big machine or series of machines occupies a barn-sized building.

Statistics: it takes 100 persons for two ten-hour shifts to do the work of 500 hand-pickers for a season. The machine picks 600 sackfuls in ten hours, or 1.0 bales per day. At present prices it would cost $5,000 to pick Mr. Murphy's crop by hand. By machine it costs $3,100 and lots faster.

The hop vines are cut off at the ground and brought to the machine by truck. By means of a winch they are entangled on iron tracks and lifted nearly to the roof, and fed into the central part of the plant where steel teeth traveling in opposite directions, shred the mass finely. The hops and smaller fragments of leaves and stems fall through screens onto a moving belt at the bottom. The larger stems and leaves take a different route. The moving belt takes the hops to the rear of the building to the top of a large bin. Here powerful fans and screening devices deliver them to the hands of four expert workmen who give them the final inspection and cleaning by hand."
THE IDES OF MARCH

This fateful phrase had an innocuous inception. According to the ancient Roman calendar the ides merely meant the 15th day of March, May, July, and October and the 13th day of the six remaining months.

Strange, but some folks still feel the 13th day of the month unlucky—if it falls on Friday!

When Caius Julius Caesar grew too great for his Tyrian-tinted toga, his associates assassinated him. His best friend, Brutus, was among those who "did him dirt"! But Caesar was warned! "Beware the ides of March", some of his admirers muttered. Julius only jeered at them. His incredulity cost him his life.

"The ides of March" ever since has carried the connotation of impending disaster.

Some hop growers are like Caesar. They are averse to advice.

Downy mildew has been doing a lot of damage every year since it was first found in Oregon in 1930. Some hop samples I saw, of the 1947 crop, showed eighty percent discoloration from this dread disease!

One of several suggestions for the prevention and control of downy mildew is crown treatment with calcium cyanamid. I have recommended it repeatedly. I wasn't foolin' either! Quite a few folks, it seems, haven't taken me seriously! Calcium cyanamid is consumed in quantity for other purposes besides crown-treating hops. It is not always available in unlimited amounts. Hop growers should order their supplies early to be sure to have it on hand for timely application. A representative of the manufacturers informed me recently a dealer in the Salem district had stocked the material in quantity against hop growers' needs. Apathy among hop growers, however, had appalled him. He was unloading his supply of this important item elsewhere. If, and when, the hop growers get there the cupboard will be bare!

Too little; too late; too bad!

A MORAL FOR MARCH

"You can lead a horse to water but you can't make him drink."
**BLUEBACKS**

Sorry that the last page of the last issue of THE HOP PRESS turned out to be baby blue rather than gorgeous green. The printer was apologetic too, but he confessed to color blindness!

**NEW NAMES**

The names of N. John Hansen, County Extension Agent in Polk County and Harold Werth, County Extension Agent in Umatilla County replace those of W. C. Leth and LeRoy E. Fuller, respectively.

Hansen, by request, also receives mimeos of my weekly broadcasts over radio station KOAC.

**CHANGE OF ADDRESS**

THE HOP PRESS mailing list has been modified, by request, so we can continue to supply copies to LeRoy E. Fuller, now Agricultural Agent, Union Pacific Railroad Company, Department of Traffic, 212 North 8th Street, Boise, Idaho.

**TIDALY HINTS FOR HOP GROWERS**

Weekly broadcasts under the above title were resumed on March 5, 1949 and will continue up to and including September 24. If you go for gossip, and find it convenient, tune in on KOAC every Saturday at 12:15 p.m. They spin a pretty "signature" platter at the close of my comments which you square dance addicts may find refreshing.

**COOP CONVENEES**

The YAKIMA HERALD on February 3 carried an announcement of the 12th annual meeting of the Washington State Hop Producers, Inc. to be held at Yakima on February 21. Marlowe Lesh is President of this competent cooperative.

**NEW FIBER FOUND**

THE DAILY SUMARY, U.S.D.A., released under date of February 28 the following: KENAF, NEW FIBER CROP, HOLDS HIGH PROMISE FOR U.S. AND NEIGHBORS-

"Kenaf, a fiber crop new to the Western Hemisphere, is now being grown successfully in Cuba and El Salvador as a result of collaborative work between agricultural scientists of the U.S. and Latin American countries, the Department of Agriculture said. The new source of fiber promises to be of unusual value, both commercially and strategically. It is an effective substitute for jute fiber (a principal source of cordage and bagging material), which normally is imported from India and Pakistan. Jute, during recent years, has been in increasingly short supply because of conditions in the producing areas of India and Pakistan, a major one being that more of their land is going into food crops."
CLOSURE COMPARISONS

During the late war, burlap was a scarce item. Interest developed in the use of non-critical materials and substitutes for wrapping baled hops.

Experiments were undertaken by Frank Rabak formerly a biochemist connected with the U. S. Department of Agriculture. Detailed data are not available in published form. A summary report is presented herewith.

"Ten materials consisting of cotton fabrics, plain waxed and laminated paper and laminated cloth were used in comparison with common burlap for wrapping hops to determine their effectiveness in retarding deterioration during 2 years in cold and ordinary storage. In cold storage the use of a laminated metal (aluminum) and kraft paper or cloth combination resulted in a low loss of about 10% of soft resins, whereas with burlap or plain paper the losses were about 17% during 2 years. With the same materials in the same period in ordinary storage the losses were 25 and 39%. The other materials mentioned were found to be intermediate in effectiveness."

Results were not entirely conclusive. The experiments were not carried on to the point that the mechanical properties of the several wrappers could be evaluated as compared to the mechanical protection as given by burlap to baled hops.

This subject might well be explored further with profit to both producers and consumers.

SPRAY CONFERENCE COMMENT

The Report of the 23rd Western Cooperative Spray Conference held in Portland, January 26 to 28, 1949 mentions several orchard pests common to hops. They are: (1) the common 2-spotted mite, (2) the hop-plum aphis, and (3) the Western 11-spotted cucumber beetle.

Among the several insecticides recommended for the control of these three orchard insects there are several that, in the absence of brewing tests, should not be used on hops.

On the basis of present information, the only insecticides mentioned that could be used on hops are: DDT, DN dusts, lime-sulfur, nicotine sulfate, petroleum oil and sulfur dust.

Before any of these acceptable materials are applied to hops it would be wise to check on the "official" recommendations covering their use on hops.

MEATY MONTHLY

CALIFORNIA AGRICULTURE, published monthly by the University of California College of Agriculture, Agricultural Experiment Station, presents progress reports of Agricultural Research. If interested, request your name placed on the free mailing list by addressing the Publications Office, College of Agriculture, University of California, Berkeley 4.
OOD PRESERVATIVE

DOWN TO EARTH, Volume 4, No. 3, pages 10 to 11, published early in 1949, carried an interesting illustrated article of timely interest, "Wood Preservative Offered As A Concentrate." The active ingredient is pentachlorophenol. It's suitable for treating hop poles.

HOP GROWERS CONVENTION

I had the privilege of attending the 3rd Annual Hop Growers Convention at Yakima, Washington in February 24 to 26, 1949. Some 350 hop growers and allied industry representatives, together with members of their families, were present. They came from California, Idaho, Oregon, and Washington.

A panel discussion of the proposed Hop Marketing Agreement caused a lot of comment, both critical and complimentary. A so-called "sightseeing trip" was blessed by a bit of wonderful weather. My trip turned out to be a tour of nearby hop-growing districts. Stationary picking machines and new-type dryer installations were the center of interest.

The formal program was both well arranged and well attended.

Bert Whitlock, In charge, Pacific Coast Headquarters, P.M.A., Grain Branch, U.S.D.A., Portland, discussed his "Experiences in Hop Inspection". Vance Shelhamer, President, Shelhamer Advertising Agency, Yakima, told about "Public Relations Opportunities for Hop Growers". Dr. Mark T. Buchanan, Director, Washington Experiment Stations, Pullman, and H. P. Singleton, Superintendent, Irrigation Experiment Station, Prosser, Washington, outlined their "Hop Research and Experimental Program". E. C. Klostermeyer, Junior Entomologist at the Prosser Station offered advice on, "Hop Aphid Control in Central Washington". Dr. E. P. Breakey, Associate Entomologist, Western Washington Experiment Station, Puyallup, explained his experiments on "Hop Mite Control". Dr. J. C. Lewis, Chemist, Western Regional Research Laboratory, Albany, California gave a "Progress Report of Research on Hops" dealing with the antibiotic properties of hop resins.

I was assigned the topic "Downy Mildew Preventive and Control Measures". In all probability my remarks will be printed in the pages of a forthcoming issue of THE HOPPER.

COIR CALCULATIONS

The following item was gleaned from THE BREWER AND DISPENSER, issue of January 1949. "One Moxee City, Washington, warehouse is receiving 221,400,000 feet of hop twine this winter. That's enough twine to completely encircle the state of Washington 36 times. Eight railroad cars recently brought in 2,000 bales of twine, Mr. Ross Dwinell, co-owner of the warehouse, said. About 1,000 more bales are on their way. The twine is coir, and it comes all the way from India. Coir is a stiff elastic fibre taken from the outer husks of coconuts. The bales, weighing 350 pounds, will go to all parts of the Yakima valley. The Moxee valley takes slightly less than 1,000 bales, Mr. Dwinell estimated.

The warehouse also receives 500 bales of burlap at other times of the year. The burlap, shipped largely from Calcutta, is used to wrap the harvested hops."
HOP RESEARCH IN OREGON

By way of introduction to "A Summary of the Oregon Hop Research Program", Dr. D. D. Hill, Head, Farm Crops Department at Oregon State College stated, "Hops have been an important crop in Oregon since about 1870. Research workers became interested in hops at a relatively early date. A bulletin on hop production was published by the Oregon Agricultural Experiment Station in 1910. Only minor attention was given to hops, however, until 1931 when a federal-state project on hop diseases and on hop breeding was established. Since then Oregon has expended research on hops to include many fields. Most of the hop research of the United States has been in connection with the Oregon project. An increase in federal appropriations has made an expansion of the hop research program in Oregon possible."

Since the above was written the Oregon Hop Research Program has been expanded. The Irrigation Experiment Station at Prosser, Washington is now a participant in regional hop research.

FORE'S FINDINGS

As a part of the "summary" introduced by Dr. Hill, Dr. R. E. Fore, Professor of Farm Crops, boils down the results of some sixteen years of "Agronomic Experiments with Hops", quoted, in part, herewith:

"Agronomic Experiments with hops have been conducted by the Oregon Agricultural Experiment Station on a small scale intermittently since approximately 1910. However, funds were not available for the establishment of an experimental yard on experiment station land until 1937. A ten acre experimental hop yard was trellised and approximately seven acres were planted during the 1937 season. The remaining three acres were planted in the springs of 1938 and 1939. The yard was planted to the three principal commercial varieties of hops, Late Cluster, Early Cluster and Fuggles, so that experimental data could be obtained on each of these varieties. A number of cultural experiments were established and the first data from mature hop plants were obtained during the 1939 season. During the past ten years, some of the experiments originally started have been dropped because conclusive data were obtained. Others have been modified and are being continued to obtain more conclusive data and to determine accumulative effects of various treatments.

Irrigation. An irrigation well and a high pressure sprinkler irrigating system were installed in the experimental hop yard in the spring of 1939. Experiments were established to determine the effect of irrigation upon yield and quality, the best methods of applying the irrigation water, the effect of sprinkling during hot weather, and the relationship of sprinkler irrigation to downy mildew infection. An average increase in yield of 25% was obtained from irrigation over a six year period. The increased yield obtained during the first season was almost enough to pay the cost of the irrigation equipment. Trials indicated that it was necessary to use high risers, placing the sprinklers above the hop trellis. The high risers were necessary to obtain even distribution of water and to prevent injury to hop vines. No injury from sprinkler irrigation was found even when the water was applied during the hottest days. Sprinkler irrigation followed by a period of cloudy damp weather appeared to increase the amount of downy mildew infection, indicating that the time of irrigation should depend upon weather conditions. Irrigation experiments were discontinued in 1945 as data obtained over a six year period had conclusively proved the value of sprinkler irrigation when properly applied."
Cultivation. Cultivation experiments were conducted through the period 1939 to 1941. No cultivation, other than plowing and working down the plowed land, was compared with the normal cultivation methods and with deep cultivation. Non-cultivated plots on which weeds were allowed to grow produced significantly lower yields than those on which weeds were controlled. Deep cultivation also consistently decreased yield.

Date of Vine Cutting. Hop vines are normally cut during the winter or early spring when the hops are picked by hand. The increasing use of picking machines, which necessitates the cutting of vines at harvest time, brings up the problem of possible injury to the plant by early vine cutting. Some growers have reported damage. An experiment was established in 1939 comparing plots in which the vines were cut at harvest time with those on which vines were left until winter or early spring. During the five-year period 1939 to 1943 the early vine cutting resulted in an average of 22% loss in yield. Since these trials established the fact that injury to hop vines by early cutting was possible the experiment was re-designed with the idea of determining how reductions in yields could be avoided. Some growers are of the opinion that the injury is principally due to bleeding of the vines, therefore, plots were established on which the cut vines were dipped in paraffin to prevent bleeding. Other plots were established on which suckers were allowed to grow throughout the season and during the latter part of the season. Present indications are that these practices may be somewhat helpful in preventing damage from early vine cutting. It has been found that the amount of damage due to early vine cutting varies considerably from year to year. Damage was particularly severe during the 1940 and 1948 seasons.

Stripping and Suckering. A suckering and stripping experiment conducted over a five-year period showed no significant differences in yield except for plots stripped to a height of seven to eight feet. The high stripping resulted in significantly lower yields. Other plots gave no significant differences regardless of whether the suckers and lower leaves were removed or left on the plants during the season.

Number of Vines per Plant. Four years data were obtained from an experiment designed to determine yield differences obtained by training two, three, four, five, and six vines per plant. No significant differences in yield were obtained during this period, although the plots having the higher number of vines per plant were more difficult to pick because of tangling of arms and light fluffy hops on the inside.

Fertilizers. Fertilizer experiments involving the use of nitrogen, phosphorus, potash, borax and sulphur have been conducted since the experimental yard was established. Fertilizers have been applied at fairly low rates and to date no significant differences in yield have been found except from the use of nitrogen. An application of nitrogen in the early spring plus additional nitrogen applied in June just prior to irrigation has given significant increases in yield. These increases in yield as well as those obtained from irrigation have in general resulted in a lower soft resin analysis. Some data indicating that potash applications might increase the resin content have been obtained. A preliminary experiment in which higher rates of fertilizer application were used was started during the 1948 season. This experiment will be expanded in 1949.
Crowning and Pruning. Hop growers normally cut off a portion of the top of the hop crown and cut the underground stems away from the sides of the crown each spring. This process is generally called hoeing. An experiment was designed to determine what differences in yield might be obtained from normal crowning and pruning in comparison with, severe crowning, and no crowing or pruning. To date no significant differences in yield have been obtained.

Time of Hoeing. An experiment was established in 1947 for the purpose of comparing yields obtained from hops hoed in the fall, those hoed in the early spring, and those hoed in late spring. Late spring hoeing was considered to be April 15 or later. In one season the late hoeing reduced yields to a considerable extent in the Fuggles variety. The effect of hoeing seems to vary considerably from season to season.

Cover Crops. The fact that cover crops are needed on overflow lands in the river bottom has long been established. Limited experiments have been conducted to determine the best crops for use in hop yards. Legume crops such as Crimson clover, vetch and peas are fine in seasons when sufficient growth could be obtained before plowing time. However, in most seasons the amount of growth obtained for green manure was rather limited. General indications are that mixtures of barley and vetch or rye and vetch are best. The grain crop will make considerable growth for plowing under even though the amount of legume growth may be small. Grain, having a fibrous root system, is very effective in preventing erosion on overflow land.

Miscellaneous Experiments. During the 1945 season hop vines were collected, baled in a hay baler, and shipped to a roofing company for experimental uses in the manufacture of composition roofing. The company reporting that the material was satisfactory as a source of fiber material. It was however, rather difficult to collect and bale the vines and unless a good price is received by growers it is doubtful whether many of them would take the trouble required to salvage the vines.

Preliminary trials on removing the lower leaves and suckers by means of chemical sprays have been conducted during the past three seasons. Several different materials were used during the 1948 season and it appeared that certain materials can be used without injuring the hop vines. Further experiments along this line will be conducted during the 1949 season.

Nearly every year a number of plants in the Late Cluster variety develop very small cones that are too small to be picked at the regular picking season. Very often these cones reach approximately the burr stage and do not appear to develop further. In 1945 a total of 167 of these plants were noted. These plants were checked during the 1946 season and it was found that one hundred eleven had developed into normal plants, thirty-nine remained small coned, twelve died out over winter, and five weak plants produced no hops.

Future Plans and Needs. Two of the most important problems facing hop growers at present are, (1) the prevention of damage to hop plants from early vine cutting which is necessary with machine picking and (2) the maintenance of quality when yields are increased by the use of fertilization, irrigation and other cultural practices. Past experiments indicate that considerable damage to hop plants is caused by early vine cutting in some seasons. Yields have been increased by the use of nitrogen fertilizer and by irrigation but in all cases the percent of soft resins has been decreased. These problems will receive more intensive study during future seasons.
I keep current a mimeographed list of 27 items of literature relating to hops. Twelve of the items can be classified as "technical". Fifteen of them are suitable for "popular" consumption. Copies of the list are available for distribution, upon request, to hop growers or anyone else who may be interested.

The availability of fifteen of these publications, two of which have since gone "out of print", was announced in various media, including the radio, on several occasions during the past season. In nearly every instance the offices of County Extension Agents were indicated as the source of supply.

Out of curiosity, I perpetrated a little private "poll" just to see how many copies of what were being requested, by whom and from where!

Despite 30 weekly broadcasts, no requests were received by Radio Station KOAC.

The Bulletin Clerk at the College Clerical Exchange and my own secretaries distributed, from January 1$ to September 1, 1948 a total of 633 items of literature dealing with hops. A distribution summary follows.

<table>
<thead>
<tr>
<th>OREGON COUNTIES</th>
<th>NUMBER TITLES</th>
<th>TOTAL COPIES</th>
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</thead>
<tbody>
<tr>
<td>Benton</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>Clackamas</td>
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<td>50</td>
</tr>
<tr>
<td>Jackson</td>
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<td>1</td>
</tr>
<tr>
<td>Josephine</td>
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<td>40 (15)</td>
</tr>
<tr>
<td>Lane</td>
<td>2</td>
<td>66 (26)</td>
</tr>
<tr>
<td>Linn</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Malheur</td>
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<td>175 (175)</td>
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<tr>
<td>Marion</td>
<td>6</td>
<td>59 (2)</td>
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<tr>
<td>Multnomah</td>
<td>5</td>
<td>61 (25)</td>
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<tr>
<td>Polk</td>
<td>3</td>
<td>38 (26)</td>
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<tr>
<td>Umatilla</td>
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<td>5 (5)</td>
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<tr>
<td>Wasco</td>
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<td>1</td>
</tr>
<tr>
<td>Washington</td>
<td>14</td>
<td>65 (7)</td>
</tr>
<tr>
<td>Yamhill</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

| TOTALS          | 15            | 608 (281)    |

N.B. Figures in parentheses refer to 3 titles not exclusively devoted to hops.

No hops grown in county.

Three agents in hop-growing counties of the state did not request any hop literature!

Incidentally, requests were received for a total of 25 copies of hop literature, 2 of which were not exclusively devoted to hops, from 2 foreign countries and 11 states, other than Oregon, in 7 of which no hops are grown.

Assuming that each of the 265 copies of strictly hop literature distributed to ten hop-growing counties of Oregon reached interested growers, which was probably not the case, it would represent a coverage of one-half copy per grower. God, that's not so hot! KOAC's got a convert. In future I'm relying on the radio.
April 4, 1949

BIOLOGICAL BENEDICTION

A rummage may result in a reward. Thumbing through some time-tarnished clippings recently, I discovered one that seemed appropriate to these pages.

I trust that my mixing of a modicum of sentiment with subjects pertaining to the soil will not seem amiss.

THE FUNCTIONS OF NATURAL SCIENCE IN AGRICULTURE

1. "To discover and teach principles underlying plant and animal production, in order to emancipate those engaged in the art of production from confusing and misleading empiricism and enable them to produce more and better products per unit of land, labor, and capital; to enable them to meet new and unusual situations intelligently, to improve their economic status and raise their standard of living.

2. "To develop the art of accurate and sympathetic thinking; to make possible a wide-spread application of biological principles to problems pertaining to citizenship — to sociological, political, and ethical questions, thus conducing to the substitution of intelligent opinion for prejudice and unreasoning sentiment in solving problems of organized society.

3. "To increase the enjoyment of life by giving people the biological basis for understanding the processes of life; to enable them to understand themselves in relation to their environment, insofar as possible; to alter their environment to their own good; and to stimulate the imagination and the habit of reflection on the significance of life, thus promoting intellectual honesty and a feeling of reference for what is right and good."

Incidentally, it has been suggested somewhere that, "In biological research, mathematical analysis can never take the place of a pair of observing eyes and two skilled hands." Agriculturally-minded statisticians will doubtless be among the first to recognize the correctness of this claim.

On the other hand, experimental procedure, if it is ever to have a practical application meriting inclusion in an extension program, must be of such character as to produce data that will bear up under the scientific searchlight of the statistician.

AN AXIOM FOR APRIL

"It is easier to perceive error than to find truth."
NO MORE MIMEOS

Due to the fact that in the future, beginning March 12, TIMELY HINTS FOR HOP GROWERS broadcasts will be "interviews", the material presented will not be available for distribution in mimeographed form.

DIRECTORS NAMED

The names of Directors of the U. S. Hop Growers Association have recently been announced. Nominations are made by the Growers Advisory Committees in California, Oregon and Washington. The Growers Advisory Committees comprise the chairman of each District in each state.

Two Directors are elected from each state. They, in turn, elect the seventh Director, who this year will be from Washington.

All Directors so far named were previous incumbents.

The two Directors for Oregon are Ray J. Glatt and Dean H. Walker.

FOREIGN HOP PRODUCTION

Gleaned from FOREIGN AGRICULTURAL CIRCULAR issued November 20, 1948 by the Office of Foreign Agricultural Relations, USDA, Washington, D. C., are the following figures for 1948.

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>NO. ACRES</th>
<th>POUNDS PER ACRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Belgium</td>
<td>1,236</td>
<td>1,248</td>
</tr>
<tr>
<td>Canada</td>
<td></td>
<td></td>
</tr>
<tr>
<td>British Columbia</td>
<td>1,600</td>
<td>1,000</td>
</tr>
<tr>
<td>Ontario</td>
<td>130</td>
<td>675</td>
</tr>
<tr>
<td>Quebec</td>
<td>50</td>
<td>660</td>
</tr>
<tr>
<td>Czechoslovakia</td>
<td>21,208</td>
<td>571</td>
</tr>
<tr>
<td>Germany - Bizonal Area</td>
<td>12,849</td>
<td>2,336</td>
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<tr>
<td>New Zealand</td>
<td>750</td>
<td>1,315</td>
</tr>
<tr>
<td>Union of South Africa</td>
<td>300</td>
<td>966</td>
</tr>
</tbody>
</table>

N. B. Hops are being grown in the following countries but details are either incomplete or not available: Argentina, Australia, Danube Basin (Bulgaria, Hungary, Rumania, Yugoslavia), Denmark, France, Portugal, Sweden.

Cultural experiments are in progress in: Belgian Congo, Brazil, Chile, Colombia, Mexico, Uruguay.

VETERAN INVENTOR

W. A. Sloper, who operates as Sloper & Son and as the Sloper Plow Works with his son, Willard, has been in the hop growing business for over 40 years. He has manufactured a great deal of hop yard equipment, starting many years ago with hop plows and later manufacturing wire droppers, dusters, dust mixers, hop fans, electric balers and also well drillers.
POST FARM FINDINGS

PROGRESS REPORT NO. 1 from the Oregon Forest Products Laboratory was authored by Robert D. Graham and William J. Baker. The title is "Service Life of Treated and Untreated Fence Posts."

HOP PICKER PARTS

The Noffsinger Manufacturing Company, Greeley, Colorado makes a V-mesh belt for hop picking machines.

During 1948 a number of Yakima Valley growers are reported to have replaced the old-style looped mesh belts with the new-style V-mesh belting. Such replacements, it is said, effected savings represented by the increased amount of hops picked and by decreasing the crew-time formerly devoted to belt repairing.

VICIOUS VIRUS

THE BREWERS' JOURNAL AND HOP AND MALT TRADES' REVIEW for January 19, 1949 contains a report from the East Malling Research Station on certain hop diseases.

Four virus diseases are recognized: (1) mosaic, (2) chloritic disease, (3) nettlehead, (4) split leaf blotch. So far, chloritic disease is the only one that it is possible to transmit by mechanical means in which insects may play a part. The hop aphid is a suspect but not as yet a proven carrier.

Mosaic is serious only on Goldings and related varieties. Fuggles and the new Yez varieties show no symptoms though often infected and can serve as carriers of the disease. They should not be grown near Golding varieties. Care is advised in selecting male hops for Golding yards because some male hops may carry the virus.

Because of the extent of the removal of Goldings infected with mosaic it has been proposed that the price margin between Goldings and Fuggles be increased as the only practicable means of giving growers greater encouragement to produce more Goldings to offset diminishing production.

Nettlehead is characterized by uncurled leaves and the vines falling away from the string. Positive identification is difficult because in hot weather the affected vines grow normally and show no symptoms.

Prompt removal and destruction of virus-infected plants is the only known method of control. In the case of nettlehead adjoining plants should be removed along with the diseased hill where the percentage of hills is low.

Verticillium wilt in a mild or "fluctuating" form was first found in 1924. In 1932 a "progressive" type of the wilt appeared and by 1947 had spread to over 100 yards in Kent. Vines and leaves, spread by cultivation and wind, are the chief sources of infection. Removal of wilt infected plants is required by law. Crop rotations give some promise of freeing infected soil of the fungus causing the disease. Wilt resistant varieties are being developed.
As a part of the "summary" introduced by Dr. Hill, referred to in the March 15 issue of THE HOP PRESS, Professor J. B. Rodgers, Head, Department of Agricultural Engineering at Oregon State College contributed the following statement on, "Hop Research in Agricultural Engineering".

"In 1934 the Department of Agricultural Engineering undertook a study to determine the affect of various temperatures and air velocities on the rate of drying and the quality of hops. This investigation involved studying a large number of existing hop dryers for the purpose of observing their methods and techniques in hop drying. Methods and rates of burning sulfur were also investigated. Experimental dryers were set up in the Agricultural Engineering Building in order to give closer control of the drying process and fundamental data was thus obtained on temperatures, air velocities and rates of drying in relation to the quality. Prior to this study, there was very little data of a fundamental engineering nature on the drying of hops. The data thus obtained has been widely used by the industry, both the hop growers and engineers, who design and install hop dryers.

"One of the results of this investigation was a general improvement in the quality of the dried product because more was known about the various fundamental factors involved in drying. The study was completed before the war, but because of the fact that Mr. Branton, who had devoted practically his full time to the project, was called into the army, the data was never published in bulletin form. At the present time, a bulletin is in the process of preparation. This bulletin will set forth the findings and results of this investigational work. Such a bulletin will be of considerable importance and help to the industry.

"The department has also participated in various other investigational work connected with hop production. In cooperation with the Department of Entomology, a machine was designed and developed to apply dust for the control of red spider. In cooperation with the Department of Farm Crops, a study was made of sprinkler irrigation and its affect upon the quality and yield of hops. The department developed a hop bale sampler, which has been adopted by the industry and is now in general use for the purpose of sampling hop bales."

Further facts which are part of the "summary" referred to above were presented by H. E. Morrison, Associate Entomologist, Entomology Department at Oregon State College under the heading, "Summary of Hop Pest Investigations".

"History: The hop aphid and red spider mite have been important to hop growers for many years. Howard, Riley, Koebele, and Washburn reported on its life history and control in the Pacific Northwest during the period 1887-1894. Parker, 1913-1914, and Larson, 1936, carried on additional studies.

The red spider appeared in California as early as 1883 and probably appeared in the Pacific Northwest about 1900. Parker (1913), Ewing (1914) and Lovett (1934) studied this pest and made recommendations for its control."
About 1935, the hop industry was undergoing changes in pest control operations. Acreage had expanded and nicotine dusts were supplanting quassia and nicotine sprays for aphid control. Lime sulfur sprays and oil sprays were no longer effective against the red spider. Sulfur dusts did not offer much promise of control.

In 1937, at the request of the Oregon hop growers, the State Legislature appropriated funds for study of problems affecting the hop industry. The Department of Entomology undertook to work out insect control measures. The following is a summary of the work during the period 1937-1948.

"General: Efforts were directed during the first year of this project in a review of literature of hop pests and in the development of laboratory and field technique for testing insecticides. It was learned that one acre of hops was sufficient to test sixteen treatments and that from seven to eight replications were sufficient. Insect populations and hop yields were used as the criterion for analysis.

"Red Spider: Laboratory tests and small field trials showed that DN dusts were satisfactory in control of the red spider, and concentrated efforts were made in the development of this material. Field trials were made in which concentration of material, rates of application, plant and varietal susceptibility, compatibility and rates of increase of red spiders after treatment were studied.

Observations were later made on the efforts of growers in applying DN dusts commercially. It was learned that existing machinery was inefficient in applying the material to the undersurfaces of hop foliage. Cooperative efforts of the U.S.D.A. Division of Drug and Related Crops and the Departments of Entomology and Agriculture Engineering resulted in the development of an efficient machine for applying dusts to hops.

Demonstrations of applications of DN dusts were carried on in 1940 in a large block of hops in nine different hop yards from Grants Pass to Canby, Oregon.

DN dusts were ineffective against the hop aphid and efforts to mix DN dusts with nicotine resulted in failure to control both hop aphids and red spiders. Competitive materials were tested with DN dusts and results showed that up until 1948 all materials were inferior to DN dusts in their ability to kill red spiders with DN dusts and these tests showed that brewing properties of hops were not affected by this material.

1948 trials showed that a one percent parathion dust was excellent in control of red spiders. Brewing tests of hops dusted with this material will be necessary before it can be safely recommended.

"The Hop Aphid: Early efforts were made in life history studies and in evaluating efficiency of established control practices. Quassia-whale oil soap sprays were found equal in value to whale oil soap sprays. Nicotine sprays were superior to Quassia sprays. Nicotine dusts were equal in value to nicotine sprays and could be applied considerably faster. Efficiency of control by nicotine was dependent upon the efficiency of machinery. It was learned that the concentration of the nicotine dust could be materially lower if efficient methods of application were practiced.
The hop aphid problem became very important during 1944 when an acute shortage of nicotine developed. Extensive field trials showed that a three percent alkaloid dust was equal in value to the four percent nicotine dust which was prepared from nicotine sulfate. This was no substitute for nicotine, but made it possible to conserve on a scarce material.

Benzene hexachloride and parathion were two materials which gave excellent control of the hop aphid. However, they cannot be recommended for the growers' use because facilities are not available for making brewing tests.

Aerosol generators were tried in hop yards for hop aphid control and very encouraging results were obtained when nicotine, benzene hexachloride and lethane were used in the formulation.

The action of the Pure Food and Drug Administration in seizing hops containing excessive aphids led to cooperative efforts of the Extension Service and Entomology Department in conducting surveys and issuing information on proper time to apply control measures. The objective of these notices was to encourage growers to apply dusts before hops had reached the burr stage of development. This program has aided growers in preventing aphids from entering the hop cone.

"11-Spotted Cucumber Beetle: DDT dusts were not satisfactory in control of the hop aphid, but were successful in controlling the 11-spotted cucumber beetle. Brewing tests have been made on hops which were dusted heavily with DDT. Chemical analysis from beer made from these dusted hops did not show any presence of DDT.

"Minor Insect Pests: Observations and control measures have been undertaken on some of the minor hop pests. Insects such as the California prionid, hop butterflies, omnivorous leaf tier, thrips, ants, hop flea beetle, fall webworm, wireworms, cutworms, loopers are included in this grouping."

HOP QUALITY AND EVALUATION STUDIES

Dr. D. D. Hill, Head, Farm Crops Department and D. E. Bullis, Chemist, Agricultural Experiment Station at Oregon State College presented the following statement under the above title. This is another part of the "summary" introduced by Dr. Hill and referred to in the March 15 issue of THE HOP PRESS.

"Studies on the evaluation of hops by physical and chemical means were started in a limited way in 1937. These studies were conducted jointly by the Departments of Farm Crops and Agricultural Chemistry at Oregon State College.

"As a result of these early investigations methods were developed whereby seed and leaf content could be determined in the laboratory with reasonable accuracy and at a reasonable cost. Coincident to the outbreak of the European conflict there developed a shortage of seedless hops from Europe and consequently domestic seedless hops began to command a premium. In response to a demand from the industry, a Hop Analytical Laboratory was established at Corvallis to provide industry with information relative to seed, leaf, and stem content of the hop. This laboratory operated from 1939 through 1943. The number of samples analyzed was slightly over one hundred in 1939 and something over six thousand in 1943."
The hop analytical work was made compulsory by the OPA in 1944. This work was under the direct supervision of the Grain Division, United States Department of Agriculture and was conducted by the State Departments of Agriculture in the three Pacific Coast states. These agencies have introduced many refinements in the analytical procedure and have provided an efficient and valuable service to the hop industry. Following the release of the OPA regulations the industry has continued to use the analytical service on a voluntary basis. The value of the service is indicated by the fact that practically all hops are now sampled and analyzed by the Federal-State Hop Inspection Service. It is now extremely difficult for dealers to sell hops unless the hops are accompanied by an official certificate giving the analysis of that particular lot.

As a result of the preliminary work on hop analysis in 1937, 1938, and 1939 the Brewers Hop Research Institute, which was formed by members of the brewing industry including brewery owners and the Master Brewers Association agreed to finance a much more intensive study on this subject. This project was undertaken by the Departments of Farm Crops and of Agricultural Chemistry.

The Farm Crops Department undertook a study of the physical measurements in an effort to determine hop quality. Methods were perfected whereby stems and seed were analyzed accurately, whereby lupulin and aroma could be determined reasonably accurately, whereby broken cones were measured, and whereby color was determined on a special color machine.

Sampling studies were undertaken to ascertain what samples were necessary to give an accurate analysis. New sampling tool was developed in cooperation with the Agricultural Engineering Department. The present sampling and analytical procedure was made possible by this development.

The Agricultural Chemistry Department undertook to develop a new and more rapid method of determining the various soft resins present in any given sample. After two years work a rapid colorimetric method was developed by which the soft resin content of hops could be determined very rapidly. This made possible the chemical examination of the large number of samples used in the physical study. Although the analyses are not quite so accurate as those obtained by the official gravimetric method an analyst can test five to ten times as many samples per day and the results are within the degree of precision necessary for hop grading needs.

Relationships between the physical and chemical measurements were then undertaken statistically. As a result it was possible to predict just how important the various physical factors were on hop quality as indicated by the resin. It was possible to show, for example, that there was little relationship between the color of the hop and the resin contained. It was possible to show that as the quantity of stems and leaves increased the quantity of valuable resin decreased. A high degree relationship was shown between the estimated quantity of lupulin in the hop and the desirable soft resin. Actually by applying a formula developed during the study it was possible for an experienced analyst to predict the quantity of soft resin in a sample within one percent of its actual analysis merely by making certain physical evaluations.

After data had been gathered for a three-year period it was possible to construct a set of standards for hops. While these grades have not yet been put to general use, it is believed they offer an opportunity for the actual grading of hops for the expression of many qualities not now shown from the analysis for stems and leaves and for seed. The project leaders who have developed these grades believe that inspectors can be trained to
apply these standards accurately and that when the trade wants to apply a standard in the marketing of this crop the tentative standard which has been developed will serve as a convenient means of doing that. It is felt that while certain corrections will need to be made as the standards are applied it will be possible to indicate hop quality much more accurately than has been done by systems previously used."

OBJECTIVES OUTLINED

The USDA, Bureau of Plant Industry, Soils and Agricultural Engineering, Division of Tobacco, Medicinal and Special Crops is cooperating with the Oregon Experiment Station at Corvallis and the Prosser Experiment Station at Prosser, Washington in conducting experimental work on hop production, breeding, disease and quality investigations.

Four projects have been outlined to date. A fifth will be developed after July 1. The four now in effect are:

1. Hop breeding for improvement in disease resistance, quality and yielding ability.
2. The development and improvement of dust and spray schedules for hop disease control.
3. The development of field and laboratory techniques relative to breeding and agronomic investigations of hops.
4. Agronomic investigations relative to increasing and maintaining yield in hops.

HOW TO BUY FERTILIZER

First, find the cost per ton plus freight and cartage.

Second, find the guaranteed analysis of available plant food.

Third, divide the cost by the total amount of available plant food to get the cost per unit of plant food.

Fourth, to find the cost of nitrogen, phosphoric acid and potash, add the total analysis together and convert into fraction. Each fractional part of the cost per ton equals the cost per unit of each amount of available plant food.

Example: Guaranteed analysis available plant food of any given fertilizer: nitrogen 10\%, phosphoric acid 10\%, potash 10\% — total 30\%.

100\% equals the whole.
30\% equals the available guaranteed plant food.
70\% equals the unavailable plant food.

If the price of the fertilizer was $100 per ton you would be paying $10 for nitrogen, $10 for phosphoric acid, $10 for potash and $70 for unavailable plant food.

Your available plant food would cost you $33.33 for nitrogen, $33.33 for phosphoric acid and $33.33 for potash.

Sp-33-35
THE BARO OF AVON

Relax, gents! I do not presume to pose as a Shakespearean scholar. I must mention, however, that some of William’s well-written sonnets “send” me! More years ago than I care to confess, I was wont to browse in Shorey’s second-hand bookstore in Seattle. For “four bits” I picked up a buckram-bound copy of the eleventh edition of “Shakespeare’s Sonnets”. The very first line of this valued volume would do justice to a geneticist:

“So fairest creatures we desire increase”. These same sentiments I harbor for hops!

Any humble husbandman may stumble upon something as startling as may a scientist. New and improved varieties of hops have been produced by perspicacious plowmen both at home and abroad. Fuggles and Early Clusters, two of our three important commercial varieties, and maybe Late Clusters, were the result of the labor of laymen!

Few of our hopyards but what are a hodgepodge of heterozygous germ plasm — mixtures, if I must! They are fertile fields for simple selection of the most desirable individual plants to serve as a source of “roots” or cuttings. Vegetative reproduction should perpetuate improvements any grower can pick at his pleasure. There are plenty of possibilities:

1. the elimination of hermaphrodites and sexless plants,
2. profuse and prolonged flowering of males,
3. vegetative vigor of females with a minimum of vine and leaf growth in relation to cone production,
4. heavy cone production of desirable types with high resin content and pleasing aroma,
5. resistance to downy mildew and many, many more!

Proper marking of potential parent plants in the field, previous to harvest, is essential. Cuttings from these “chosen few” can be planted direct to the field in making replants or after being grown for a year, in nursery rows.

An attempt to improve planting stock by the use of chance seedlings should, generally, be considered the province of a trained plant breeder. The relatively complicated process of hybridization, too, is one that can, with greatest prospects of success, be assigned to a scientist rather than to a hired hand!

A MESSAGE FOR MAY

“The ink of the wise is of more value than the blood of martyrs”.

May 6, 1949
HOP RESEARCH COMMITTEE

Under date of February 24, 1949 the following Hop Research Committee of the Oregon Experiment Station was appointed:

D. E. Bullis, Chemist and Collaborator, U.S.D.A.
S. M. Dietz, Plant Pathologist in Charge
R. E. Fore, Agronomist and Agent (Associate Agronomist), U.S.D.A.
D. D. Hill, Agronomist in Charge
G. R. Hoerner, Extension Hop Specialist and Agent (Plant Pathologist), USDA.
K. R. Keller, Agent (Agronomist), U.S.D.A.
G. W. Kuhlman, Associate Economist
R. A. Magee, Chemist, U.S.D.A.
H. E. Morrison, Associate Entomologist
D. C. Mote, Entomologist in Charge
J. B. Rodgers, Agricultural Engineer in Charge

D. D. Hill is currently chairman of the committee.

DIRECTORS DONATE

In a meeting on March 24, 1949, the Board of Directors of the U. S. Brewers Foundation voted an annual appropriation of $7,000.00 for two years to expand the program of hop research centered at Corvallis.

Robert Oppenheim, President of Hugo V. Loewi, Inc. represents the hop trade on the Board. He proposed that dealers appropriate an additional $5,000.00 to be raised by a voluntary 2 1/2 cents per bale handled. This dealer donation, it was proposed, be earmarked for extension activities, particularly in the states of California and Washington, aimed at more effective control of downy mildew.

IMPORTS INVESTIGATED

AGRICULTURE BULLETIN for March, 1949 carried an account by John E. Davis, in charge of pest and disease surveys for the plant division of the Oregon State Department of Agriculture, under the heading, "Surveys for Insect Pests and Plant Diseases" which we quote, in part, herewith:

"During 1947 and 1948, 86,248 hop sets and roots were imported into Oregon from England. These were planted in four yards at Grants Pass, Independence and Salem. During these two years there have been severe outbreaks in England of two virus diseases and one fungus disease of hops which have not been reported in the United States. During September, 1948, the four plantings were inspected by Paul R. Frink, plant quarantine inspector of the federal Bureau of Entomology and Plant Quarantine, G. R. Hoerner, hop specialist, Oregon State College, and members of this department. No new insect pests were noted. None of the virus or fungus diseases which the British workers have described was detected although a mottling and chlorotic condition was observed in some varieties in each of the plantings. Further inspections will be made to determine whether this is a virus or some genetic chlorophyll irregularity."

CONE CONSUMPTION

About a million and a half pounds of hops are used annually by the baking and drug trades. The brewing industry consumes over forty million pounds.
OBSERVATION POST

The following hop varieties are being grown, most of them for the second season, at the Fort Vannoy hop ranch near Grants Pass: Brewer's Favourite, Brewer's Gold, Bullion, Burgunder, Early Green, Early Promise, Landhopfen, Samling, Spalter, Sunshine Hop.

Manager D. Eismann is to be congratulated for his cooperation and the care and attention he has given the area of his yards that has been set aside for this purpose. It will prove a valuable testing ground for trials in Southern Oregon of experimental plant material which may be developed at Corvallis.

A NOTE FROM NEW ZEALAND

A Director of Hop Research has recently been appointed to New Zealand's Plant Research Bureau, Agronomy Division, Department of Scientific and Industrial Research.

Recent correspondence relates that most of 1948 was spent at East Malling Research Station and Wye College, England studying hops.

New Zealand's chief variety was imported many years ago as Californian, probably our Late Clusters. This variety yields well but is subject to Phytophthora root rot. This disease is reported to cause 20 to 30 percent annual loss. Virus troubles are a problem too. Downy mildew has not been reported. A government regulation prohibits the importation of hop sets to avoid introducing the disease.

The research project aims at breeding new disease-resistant varieties. A start will have to be made from seeds from varieties not now available in New Zealand.

RESEARCH IN ENGLAND

"Research and the Brewer" is the title of an article by B. Meredith Brown in the JOURNAL OF THE INSTITUTE OF BREWING 54(5): 249-257, 1948.

The Institute of Brewing in Great Britain, in conjunction with the Brewers' Society, has founded a Research Organization on a national scale, the primary purpose of which is to serve the brewing industry.

Among the problems requiring immediate attention in Britain is the development of new varieties of hops which are resistant to Verticillium wilt.

EQUIVALENTS

1 Bale equals 17 Boxes
1 Box equals 2 Baskets
2 Baskets equal 1 Sack
1 Bale equals 5 pounds Sulphur
1 Bale equals 5 1/2 yards Burlap
1/3 of the boxes equals the burlap
1 pound Sewing Twine sews 16 bales
IRRIGATION ITEMS

A couple of old but interesting items recently worked their way to the top of a pile of reference material.


Included was an account of "Experiments on the Hopyard of Oswald West, near Corvallis, Oregon". This was a 25-acre yard on Kigers Island! In 1906, non-irrigated production averaged 800 pounds per acre. Following irrigation of less than half the area the 25 acres averaged 1150 pounds per acre.

A survey of Willamette Valley yards indicated that in 3 seasons out of every 10 drought cut yields one-third.

Seavey Brothers at Eugene, in normal seasons averaged 1500 to 2000 pounds per acre. In 1904 and 1905, due to early season droughts, their yields were reduced to 1000 to 1200 pounds per acre. Size and quality of the harvested hops were also adversely affected.

The second result of research was a big bulletin by W. L. Powers published in August, 1914 as Oregon Station Bulletin 122. The title is "Irrigation and Soil-Moisture Investigations in Western Oregon".

A report by Sloper Brothers, Independence, indicated late irrigation resulted in a 50 percent increase in hop yield. On one row, one irrigation in June and a second in August, resulted in an increase of nearly 100 percent.

The total annual cost of irrigating from a driven well was 40 cents per acre inch. Approximately $2.00 per acre was expended for irrigation.

Sounds like a paying proposition!

SOIL ANALYSIS

Somebody said, and truly, "The Chemical analysis of the soil is not a panacea for all growth problems. It will not show faulty cultivation, poor soil structure and other physical characters which are closely allied with the productive capacity of the soil."

WIRE REQUIREMENTS

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VERTICILLIUM WILT

W. G. Keyworth and Margaret M. Hitchcock, in ANNUAL REPORT OF THE EAST MALLING RESEARCH STATION p. 148, 1947 discuss "Verticillium Wilt of the Hop (Humulus Lupulus). A Note on the Incidence of Symptoms of Fluctuating Wilt in Early, Mid-Season and Late Bine", as follows:

"Experiments were carried out to determine the relationship between the time of pruning and training of hop plants and the incidence of attack by Verticillium albo-atrum. Those plants which were pruned and trained latest (end of March and middle of May respectively) were least attacked by the disease, but the plants that were affected showed no decrease in severity of symptoms.

"There did not appear to be any significant reduction in yield as a result of the late bine treatment, and this method may prove useful in reducing the number of plants showing symptoms of fluctuating wilt. The reasons for the effectiveness of this method are obscure, but one factor may be the shorter time that the bines are growing and thus presumably under the influence of fungal invasion."

HOP CHEMISTRY

M. J. De Never published an article, in French, in PETIT JOURNAL DU BRASSEUR 56(2221): 892-894, 1948, entitled "Hops".

The history and properties of hops are reviewed. Hops are reported to have been used in beer since about 1300 and have won out over a number of other aromatic materials because of their outstanding contribution to the quality and flavor of beer. The chemical composition of hops is given.

The hop constituents which play a role in brewing are the essential oils, pectins, tannin, nitrogenous matter, and the bitter substances. The bitter substances are by far the most important hop components.

The author concludes with the statement that such description as "grade A hops", "highest quality hops" will soon be replaced by more precise laboratory data.

POLES PER ACRE

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</table>
HOP ANALYSIS

M. Verzele and F. Govaert discuss a "New Method for the Determination of Bitter Acids in Hops" in FERMENTATIO No. 4-6, 1948 (in French.) See also an abstract in WALLERSTEIN LABORATORIES COMMUNICATIONS 11:231, 1948.

The time required for the analysis requires three hours. Suggested uses for the simplified method are: following the formation of bitter substances in hop plants; determining the localization of bitter acids in the various parts of the hop plant; ascertaining the extent and causes of losses of bitter acids during drying.

A BUREAU BEAUTY

THE RECLAMATION ERA is issued monthly by The Bureau of Reclamation, U. S. Department of the Interior, Washington 25, D. C. The lady editor does a lovely job! The April, 1949 issue's front cover featured a hop picker (human) at work! There was an interesting illustrated article on pages 81-83 by Hu Blonk entitled "hops". Stressed, of course, was the part irrigation plays in hop production. Sixty-nine percent of the 1948 hop crop in the U. S. came from areas in California, Idaho, Oregon and Washington serviced by the Boise, Owyhee, Yakima and other Federal Reclamation Projects. Two thousand additional acres were reported planted in 1948, all on irrigated land.

Oregon's production of 16,000,000 pounds was credited almost entirely to non-irrigated land in the Willamette Valley while production from California, 11,300,000 pounds, Idaho, and Washington, 23,000,000 pounds, was credited largely to irrigated areas. Approximately 46 percent of the nation's production was derived from 1,300 acres on the Yakima project.

Eighty-five to ninety percent of the Yakima crop was machine picked.

The Yakima investment per acre was said to be around $1,000, but with dryers and mechanical pickers included it reached $2,000. Portable pickers cost around $10,000.00 and stationeries up to $40,000. At 58 cents per pound, the average per acre return was $1,000. Grossing $250 to $400 per acre above operation cost, hops have brought the highest net return of all crops in the Yakima Valley since 1942.

Our "eagle eye" spotted some minor inaccuracies in factual details and free-hand drawings but on the whole the article was well written and makes interesting recommended reading.

HOP PROPAGATION


"The development of new and more rapid methods for hop propagation is of great importance in connection with the breeding of new varieties. Layering has been found to be most suitable and can be effected with equipment normally used by hop growers. This process depends upon the fact that the part of the bine beneath the soil remains alive and can be used for propagation.

"Three variations of layering are described, each of value under appropriate conditions. In every case, the parent plant must be selected with care and should be free from disease."
NETTLEHEAD OF HOPS

W. G. Keyworth, in ANNUAL REPORT OF THE EAST MALLING RESEARCH STATION pp. 150-152, 1947 discusses, "Nettlehead Disease of the Hop. A Note on the Reaction of Certain Wye Seedling Varieties to Graft Infection", as follows:

"An account is given of small scale experiments on the reaction of hops to graft infection with Nettlehead. Eighteen varieties were tested, nine of which were in commercial use; the other experimental varieties were chosen for their resistance to Verticillium wilt. Each plant was grafted to a Fuggle plant infected with Nettlehead. All test plants were grown outdoors to observe symptoms during the year subsequent to grafting. At least one grafted plant of every variety tested showed symptoms of the disease, but the variety Concord appeared most resistant. Experiments with this variety showed that symptoms appeared later and were less severe than on comparable Fuggle plants. No satisfactory method for the control of Nettlehead disease has as yet been suggested."

RED SPIDER CONTROL

A. M. Massee in ANNUAL REPORT OF THE EAST MALLING RESEARCH STATION pp. 187-188, 1947 reports as follows, on "The hop Red Spider (Tetranychus urticae Koch)."

"The Red Spider has caused much damage to hops in England in recent years. The variety Fuggles is most susceptible to attack, but Goldings and some of the newer varieties have also been affected.

"To combat this pest, the application of a 1% lime-sulfur spray or a Derris preparation (2 lbs. of derris powder containing 2% rotenone per 100 gallons) to the hop plants at the end of May or beginning of June is recommended. The spray should be applied when the lower leaves of the bines have been stripped but before they reach the breast wire, and a second application may be made a week or so later. Where Red Spider infestations are particularly large, crude commercial naphthalene should be spread directly after picking."

MUMFORD CONTRIBUTES

As a part of the "Summary" introduced by Dr. Hill, referred to in the March 15 issue of THE HOP PRESS, Professor D. C. Mumford, Head, Department of Farm Management presented the following statement on, "Research on Hops Conducted by the Department of Farm Management." The statement is quoted, in part, herewith:

"We are setting forth below the work done by this Department in connection with the hop enterprise in Oregon. In most of this work Dr. G. W. Kuhlman has borne the major responsibility.

"1. This Department conducted a three-year cost of production study (1934-36) which resulted in the publication of Station Bulletin 364 "Cost and Efficiency in Producing Hops in Oregon", June, 1939. This publication presented detailed cost of production figures.

"2. A spraying and dusting questionnaire study was conducted by this Department with the active cooperation of the Hop Control Board, Salem, Oregon. This study was conducted in 1941 and, although never published, the results were presented by Dr. G. W. Kuhlman of this Department as Exhibit 46 entitled "Spray and Dust Costs Reported by Some Oregon Hop Growers, 1941" at the Hop Hearing held at Salem on June 1, 1942."
3. Almost annually, beginning with the year 1941, the Department has prepared yearly estimates on the cost of producing hops in Oregon. For the first several years this was done at the request of Mr. C. W. Paulus of the Hop Control Board, and then more recently by Mr. Paul T. Rowell, Associate Manager, U. S. Hop Growers Association, Salem, Oregon. In this connection an estimated cost of production figure was calculated on June 12, 1948, and sent to Mr. Rowell and to Mr. G. R. Hoerner, Extension Specialist in Hop Production, in July.

4. At the suggestion of Mr. G. R. Hoerner, this Department on April 14, 1942, calculated an up-to-date estimate on the cost of establishing hop plantings and trellises in Oregon.

5. On February 8, 1943, this Department furnished Mr. R. S. Besse, Assistant Director, Agricultural Experiment Station, an estimate on the investment per acre represented in hop yards, exclusive of land and buildings other than those used in producing hops. This estimate was prepared by Dr. G. W. Kuhlman and presented to Mr. Besse in a memorandum dated February 8, 1943.

6. In the summer of 1943 a harvesting labor efficiency study was made which included 413 hop pickers of different ages and sex. The results of this study were published in Station Circular of Information No. 342 under the title "Harvest Labor Efficiency on Hops in Oregon".

7. From time to time there has been interest in the relative profitableness of hops one year with another over a short period of years. In August of the current year this Department calculated a comparative table showing annually from 1934 to 1948, inclusive, the estimated cost per pound of producing hops in Oregon. This is compared with the selling price per pound year by year. The percentage which the selling price was of the estimated cost of production is shown to have varied from a low of 60% in 1935 to a high of 153% in each of the two years 1944 and 1945. Over the 15-year period it is estimated that the price received by growers of hops in Oregon has averaged about 118% of the cost of production. (A copy of this table was presented in the November 15, 1948 issue of THE HOP PRESS).

8. Future work. Whatever else may be decided upon, this Department will hold itself in readiness to make such calculations and estimates regarding the cost of producing hops, based upon our previous studies, as may be requested of Oregon State College."

RECENT REPRINTS

THE BREWER'S DIGEST for April, 1949 carried an illustrated article by your Editor entitled, "Hop Diseases in the United States".

Reprints will be available for grower distribution despite the fact that the printer went berserk and modified the original manuscript without my knowledge, necessitating several unsightly corrections on several of the seven pages of the paper.
JACOB'S LADDER

I'm no churchman, chums. Many a time and oft, however, I've given a glance at copies of The Good Book. The Gideons, in case you care, dutifully deposit them in the cubicles of many a caravansary.

One otherwise idle evening I thumbed through "The First Book of Moses called Genesis". I became absorbed in the affairs of a Yiddish yokel called Jacob.

Now Jacob, when his domestic duties permitted, was a very handy herdsman. He tended the flocks of asses, camels, cattle, goats and sheep belonging to a Syrian by the name of Laban.

Twenty trying years of servitude saw Jacob the proud possessor of a couple of wives, formerly Laban's daughters, a pair of their solicitous serving maids and thirteen hybrid Hebrew offspring; not to mention most of Laban's livestock!

Jacob finally became firmly implanted as a patriarch and, incidentally, piled up plenty of this world's goods by grading his flocks! Grades were the ladder by which he climbed from poverty to plentitude.

Hop grades will result in even greater good! They will benefit both producer and consumer and the middleman as well! Grades, either compulsory or permissive, have, in the case of every agricultural commodity to which they have been applied, become a boon.

The Federal-State Hop Inspection Service presently certifies the physical condition of hops with respect to leaf, seed and stem content. They serve as the bases of sales. The Hop Marketing Agreement, if passed, will set a minimum physical standard of quality. Hop quality is not properly defined if no consideration is given to chemical analysis, as the American Society of Brewing Chemists is well aware. Certain segments of the brewing industry are becoming grade-conscious. Dealers and growers, who appear hesitant in climbing upon the bandwagon, will do themselves a disservice if they fail to fully abet, and fast, the formulation of adequate and mutually acceptable hop grades based on chemical as well as physical factors.

A JUDGMENT FOR JUNE

"A little that is pure is worth more than much that is mixed."
LAST BUT NOT LEAST

The YAKIMA HERALD, April 27, 1949 announced the selection of the seventh Director of the United States Hop Growers Association. He is George W. Allen, Sunnyside, Washington.

PROBABLES PICKED

The YAKIMA HERALD's issue of April 27 announced the choosing of Washington state's nominees for membership on the Control Board if the proposed Hop Marketing Agreement becomes operative. Approval of nominees by the Secretary of Agriculture is required. Those named were: William Gamache and W. H. Hill, Jr., Yakima and Ed Schott, Selah, with Victor Belaire and George Norman, Moxee and Shirley Ward, Wiley City as alternates.

The CAPITAL JOURNAL's issue of May 4 announced the choosing of Oregon-Idaho nominees. Those named were: Ben Hull, Grants Pass, Ray J. Glatt, Woodburn and Dean H. Walker, Independence with Harvey Kaser, Hermiston, S. P. Linn, Albany and L. S. Christofferson, Eugene as alternates.

NEW OFFICERS

Recently elected as members of the Board of Directors of Independence Hop Growers were: R. M. Walker, Eugene MacCarthy and Dick Chittenden, East District; D. F. Kennedy, Byron Ruddell and Zack Bartell, North District and H. H. Withrow, Gail Prather, E. F. Pomeroy and Ray Haener, South District.

Officers are: H. H. Withrow, President; Gail Prather, Vice-President and Byron Ruddell, Secretary-Treasurer. Dean C. Omans is Manager.

SEVEN SERVE

The Board of Directors of The Washington State Hop Producers with headquarters at Yakima consists of seven members. Officers for the current year are: Marlowe Lesh, President; William Gamache, Vice-President; Chet Thomas, Secretary; J. F. Moreland, Treasurer.

ONE OF OUR BOYS MADE IT

On May 16, O. S. Fletcher, hop-growing Lane County's Extension Agent since 1925, was presented with the U.S.D.A.'s Superior Service Award by Secretary Brannan on the grounds of the Sylvan theatre in the shadows of the Washington Monument. Three hurrahs from THE HOP PRESS!

NATIONAL NOTICE

In TIME's issue of April 25, 1949, page 48, the following item of interest appeared, "Hop cones (the part used in making beer) produced two promising antibiotics, said Dr. W. D. Maclay, of the Western Regional Research Laboratory in Albany, California. One, called "lupulon", seemed to be as effective as streptomycin against tuberculosis in mice; its hop-twin, "humulon", worked in the test tube against T.B."

-2-
AERIAL APPLICATORS

According to a recent letter from C. W. Nelson, Aeronautical Supervisor, Oregon State Board of Aeronautics, Salem, lists the following operators "engaged in dusting or interested in this type of business:"

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In case you are interested, I can supply the names and addresses of 92 licensed commercial sprayers and/or dusters in Idaho and 31 in Washington.

AERIAL AGRICULTURE

N. A. C. NEWS, Vol. 7, No. 3 carried the following pertinent paragraphs of particular interest:

"Industrial use of airplanes in the field of agriculture is making rapid progress. A total of 986 individual operators are utilizing 2,652 aircraft.

"In addition to the speed element in spreading chemicals for control of crop destroying insects, planes also have an advantage under conditions when the ground is wet.

"There are emergencies when fast coverage of large acreage is necessary to save a crop from insect pests where the airplane is the most efficient weapon the farmer can command."
The plane features a flap action which forces spray against the ground hard, and so minimized drift and provides a rebound effect which coats the underside of foliage. The ship carries 50 gallons of liquid.

It is reported that the plane will spray a swath 60 feet wide when it is flying ten feet above the ground, particle size can be controlled from aerosol to rain (10 to 1,500 microns per drop). The dosage is adjustable from two quarts to ten gallons per acre.

The plane flies from 50 to 90 miles an hour when spraying and requires only 500 feet for take-off under no-wind conditions.

An association of seven Montana aerial spray operators has been formed and will largely use the Silvaire Sprayer for control work in that state. The organization, called Sky Spray, Inc. will have enough planes available to spray wheat and other crops in an area rapidly and at the right time to give the best control of weeds and to cause the least injury to crops.

In this same issue nice "notices", with fascinating facsimiles, of Yakima County, Washington, Associate Extension agents Bill Luce and John Keene appeared also. Keene devotes some of his attention to Yakima County's important hop industry's problems.

PLANE PICTURED

Stauffer's NEWS LETTER, Volume III No. 5, May, 1949 carried a cut of "the new Luscombe Silvaire plane especially designed for aerial spraying."

KAULAN COPTER

AMERICAN CYANAMID, Vol. 1, No. 9, pg. 5, 1949 pictures a "New Aircraft Aid to Agriculture".

WINGED WORDS

INDUSTRIAL FLYING, a joint compilation by the U. S. Department of Commerce and the Civil Aeronautics Administration cites many pesticide control operations by airplanes. It is available through the Government Printing Office, Washington, D. C.

COUNSELOR CONVOYED

The CORVALLIS GAZETTE TIMES' issue of May 12 carried an item of interest which we quote herewith, in part: "A. N. Duckham, Counselor for the British Embassy since 1945, is in Oregon this week studying agricultural conditions and conferring with Oregon State College agricultural leaders.

"He will be on the campus here Friday to inspect horticultural experiments and later will view mechanical hop picking plants near Independence."

The British, incidentally, have developed mechanical hop pickers too - portables.
HOP INSPECTORS MEET

The fifth annual Federal-State Hop Inspectors Conference was held at Portland April 28-30, 1949 in the offices of the United States Department of Agriculture, Production and Marketing Administration, Grain Branch.

A total of 14 individuals attended representing the Grain Branch, the State Departments of Agriculture of California, Oregon and Washington, the United States Hop Growers Association, the Oregon Experiment Station and Extension Service.

These meetings provide opportunity for informal discussions and an exchange of ideas on administrative problems in connection with hop inspection work.

As a result the Federal-State Hop Inspection Service has proven a signal success.

COST CUTTER

The CAPITAL JOURNAL of Salem, Oregon carried the following account on April 13, "Fifth Hop Hoeing Machine Is Sold."

"H. K. Merkley, a hop grower from Sacramento, California, came to Independence by air this week and purchased a hop hoeing machine from W. A. Sloper & Son.

"This is the fifth hop hoeing machine sold by Sloper and Son this year. Two went to the Yakima district, one to Ben Charvet and one to Joe Charvet at Grandview, Washington, one to Frank Turner and Bob Cobile south of Independence and one to the Willamette Hop Company at Buena Vista.

"The hop hoeing machines sold are of the two row type and all who have purchased the machines are well satisfied with their work.

"W. A. Sloper states that a machine will take the place of as many as 25 to 30 men in hoeing the hops."

NEW GEIGER GADGET

AMERICAN CYANOGRAMS, Vol. 1, No. 9, pg. 7, 1949 carried an interesting illustrated account of a Geiger Counter X-Ray Spectrometer which identifies minerals in soils within a matter of minutes.

MORE NEWS FROM NEW ZEALAND

A. S. Nash, Director of Hop Research, wrote, under date of April 27, 1949, that Phytophthora has been present there a long time but only in the last five or six years has it become a serious problem. A thorough study of the fungus will be undertaken.

The Cawthorn Institute at Nelson, New Zealand is reported working on the problem, using soil fumigants, but so far the effort has met with little success.

In England, reports Director Nash, Verticillium wilt is much more important than Phytophthora.
Belated Listing

The BREWER'S JOURNAL, Volume 98, No. 1, pg. 41, 1948 carried the following account, "Yakima Hop Men List '48 Goals".

"A program designed to maintain Washington State's position in the hop industry was approved at a recent conference of extension workers and hop growers in Yakima. Agreement was reached on the following goals:

1. "Research to discover and correct conditions which cause green and ripe hops to shatter when picked.

2. "Research aimed at finding the causes behind missing hills.


5. "A varietal testing program in the valley.


7. "An expansion of the soil and fertilizer studies now under way at the Prosser experimental station, with particular attention to be paid to a comparison of natural and synthetic fertilizers.

"Sentiment at the meeting also favored continuation of the county extension service reports on aphid migration. Growers agreed that the program this year aided them in determining the proper time for spray applications.

"It was agreed that the outlined goals would be drafted into a resolution which can be used by various hop organizations in obtaining approval of the program by the necessary government agencies. Apparently new insecticide, 3422, for aphid and mite control, was reported by David Brannon, extension entomologist."

Commendable Circular

Washington Agricultural Experiment Stations, Institute of Agricultural Sciences, State College of Washington in April, 1949 issued Station Circular No. 73 entitled, "Hop Pest Control in Washington". The authors are E. C. Klostermeyer, Junior Entomologist, Irrigation Experiment Station, Prosser and E. P. Br acrey, Associate Entomologist, Western Washington Experiment Station, Puyallup. Insects discussed are: Hop aphids, mites, thrips, the cowpea aphid, hop butterfly. Mention is made of leafhoppers, white flies, cutworms and lygus bugs.

It is of interest to note that tetraethyl pyrophosphate and parathion are recommended for the control of aphids and mites. Entomologists at the Oregon Experiment Station have considered it unwise to do so in the absence of brewing tests to determine whether or not possible residues of either material on hop cones could be recovered in the fermented malt beverages in which treated cones were used.

Pole Treatment Picture

The FARM JOURNAL for May, 1949 pictured on page 62 a clever solution for soaking the butt ends of long poles. Hop poles can be treated with less trouble by burying a single drum.
As a part of the "summary" introduced by Dr. Hill, referred to in the March 15 issue of THE HOP PRESS, Dr. K. R. Keller, Agronomist, U.S.D.A., presented the following "Summary of Hop-Breeding Investigations, 1930-1948."

"Experimental hop breeding research at Oregon State College, Corvallis, Oregon, was initiated September 3, 1930, with the appointment of Dr. E. N. Bressman as hop breeder. During the course of the investigation, resignations from the hop breeding position have necessitated the appointment of several successors. Dr. Bressman was associated with the hop project until January 12, 1934, at which time Dr. D. C. Smith accepted the position. Dr. Smith remained in charge of hop breeding trials until his resignation May 11, 1936, when Dr. R. E. Fore relieved him of these duties. Dr. Fore held the position of hop breeder until January 1, 1944 at which time Mr. Jack Sather accepted leadership of the breeding and agronomic work on hops. Illness prevented Mr. Sather from carrying on actively during the 1947 season at which time Dr. Fore directed the work which was underway. In general, the tenure as hop breeder for an individual investigator has been rather limited. In addition, prior to 1948, the funds which were available permitted the employment of a plant breeder only on a part time basis.

The problem of paramount importance confronting the hop breeder at the time the project was initiated, as well as at the present time, was to develop a variety resistant to downy mildew possessing agronomic and chemical characteristics desirable to both the grower and the brewer. Sources of germ plasm available in this area consisted largely of four standard varieties, namely; Early Clusters, Late Clusters, Fuggles, and Red Vine. The variety, Fuggles, appeared to offer the greatest possibilities from the viewpoint of field resistance to downy mildew, but was inferior to Late Clusters on the average, in yielding ability. Hops are normally propagated asexually, therefore new varieties or types, barring mutations, must arise from the production of seed.

Problems in hop breeding may be attacked in one or several ways. These methods are usually referred to as (1) Introductions from surrounding states or foreign countries, (2) Selections from established existing varieties or within introductions, and (3) Hybridization which may involve a number of approaches and varies with the crop in question. In this discussion hybridization will be limited to inter-varietal crosses. Contributions to the hop breeding project will be discussed under each of the preceding classifications.

A large number of introductions, approximately 75, have been obtained from foreign workers and observational plantings made in the experimental hop yards. None of the introductions have exhibited immunity to downy mildew and all appear more susceptible under field conditions than the variety Fuggles. The most desirable varieties have been maintained and are available for use as parental stock in the breeding program. The yielding ability of those introductions has not been evaluated other than on an individual plant basis.

Data collected in each of several years suggests considerable variation in plants within as well as between varieties. Throughout the course of these investigations, selection has been limited largely to visual characters in addition to chemical analyses. Brewing tests have been proposed as a future aid in selection.
"The progress in hop breeding from hybridization has been limited for the most part to inter-varietal crosses. Numerous crosses have been made involving both domestic and foreign varieties in various combinations. None has been increased for commercial release. Crosses have been made using a bagging technique as well as the use of a female isolation block. Techniques have not been perfected in the case of the former which could be used to save considerable time in an inbreeding program. The isolation block is well adapted to the making of varietal crosses. Since the effect of heterosis has not been evaluated it is rather difficult to evaluate this approach.

"The necessity of seed production in the breeding of new lines introduces the problem of seed germination. Hop seed germinates poorly under ordinary field or greenhouse conditions. A method has been devised for germinating the seed which is quite satisfactory but rather time consuming. A more rapid method of germination of seed would be desirable.

"Varietal tests involving a number of foreign introductions and an experimental selection have been attempted in each of two locations. Both tests were discarded before any experimental data was collected. This is rather unfortunate since a breeding program should involve extensive as well as intensive testing. An evaluation of the material under investigation at a number of locations is essential to the breeder in directing his work efficiently.

"In addition to the breeding work that has been mentioned other points of interest have been investigated which are of general value. Hop plants frequently exhibit sex reversal under field conditions or in other cases develop both sexual flowers on the same plant. A technique for artificially controlling sex reversal in the hop plant would permit a more rapid approach to homozygosity as compared to sib matings."

NEW NAME

Under the heading, "INDUSTRY INFORMATION" on page 4 of The Hop Press of January 29 reference was made to the A.I.F. NEWS published by the Agricultural Insecticide and Fungicide Association, 285 Madison Avenue, New York 17, New York.

All this has recently been changed! The publication is now known as N.A.C. NEWS published by the National Agricultural Chemicals Association, Barr Building, 910 - 17th Street, N.W., Washington 6, D.C.

FIGHT FIRE

Heavy annual losses by fire in hop dryers could be reduced, in all probability, by a careful cleanup around kilns before the drying season starts. A constant menace are neglected growths of woody perennial and broad-leaved weeds and grasses.

A simple and relatively inexpensive solution to this problem would be the timely use of appropriate combinations of weed killers.

AGRICULTURAL NEWS LETTER (Du Pont) Vol. 17, No. 3, pg. 47, 1949 suggests some pertinent possibilities.

Sp-33-41
CALLAS FOR THE QUICK

Worldly-wise Will Shakespeare, or was it Francis Bacon, in "The Tragedy of Julius Caesar" opined, "The evil that men do lives after them; the good is oft interred with their bones."

And so instinctively I suppose, and with no little encouragement by purveyors of posies, we have come to accept the custom of bedecking the biers of our dear departed with blossoms. The deceased, however, derive little pleasure from this pleasant practice.

Should my relatives or friends feel similarly disposed when it comes my turn to "shuffle off this mortal coil", I hope they will appease my preference for an old-fashioned Irish wake and consign their callas for the quick. Posthumous awards are tantalizing tributes at best.

There's some sense to bestowing a benediction when the recipient is still mentally and physically receptive. That some merit is missed is discouraging although perhaps unavoidable. That recognition, monetary or otherwise, is bestowed at times for seemingly trivial attributes is depressing. That the demure and deserving are sometimes submerged by a surreptitious sequence of snivelling scrivener, subservient supervisor, and bellicose boss is indeed deplorable. When real virtue is rewarded we rejoice!

USDA, issue of May 23, 1949 discloses two honor awards for Superior Service to personal acquaintances who have helped in greater or less degree, over the years, in solving some of the problems of the hop industry.

"Howard P. Barss, Office of Experiment Stations, Washington, D. C.: For his outstanding initiative and achievement in fostering cooperative regional research in the field of plant disease control."

"E. Newton Bates, Production and Marketing Administration, Portland, Oreg.: For the development of mechanical devices which have been of outstanding value in improving the technique and in reducing labor costs in the inspection of hops and in determining the milling yields of rough rice."

Barss is still on active duty. Bates has recently been retired. We salute them both!

A JIBE FOR JULY

"Many a person has an excellent aim in life, but no ammunition."
WASHINGTON AWAKE

The following encouraging account appeared in the May, 1949 issue of BREWER AND DISPENSER: "WSC Expert Observes Disease Control Vital to Hop Future".

"With growing importance of hops as a crop in the Yakima Valley, more attention needs to be given to control of hop diseases and the propagation of disease-free, high producing vines, M. R. Harris, extension plant pathologist at Washington State College, said on a recent Yakima inspection trip.

"Research is especially important, Mr. Harris added, if Washington is to hold its position as the nation's leading producer of hops.

"His comments followed a survey of hopyards in the Yakima area, the state's major hop producing region, where weakened vines were found in quite a few yards. He said that it is not definitely known just what causes these vines to be weak.

"'There is a need for considerable research,' he declared, 'since some symptoms suggest that virus diseases may be present.'

"If virus diseases are found present, Mr. Harris said that a roguing program should be started to eliminate diseased vines.

"'In addition, there should be a selection program outlined in which only the healthiest and highest producing vines are used to propagate hops,' he said.

"He suggested that a hop disease control program should be quite similar to that used to produce virus-free seed potatoes. By this he said he referred to selection of superior strains of hop roots and propagation of them in a separate yard. During the process of propagating the roots, all vines showing any evidence of abnormality or virus disease would be removed.'

FAIR ENOUGH

The 10th Annual Malheur County Fair Premium Book, under Division G - Agriculture, lists a special class VI - HOPS:

"Exhibit shall consist of one cut sample - approximately two pounds of baled hops.

1. Early Clusters 1st $4.00 2nd $2.00 3rd $1.00

2. Late Clusters  $4.00 $2.00 $1.00"

The fair is scheduled for Ontario, September 1-3, 1949. The inclusion of a hop exhibit is an idea that might well be followed at fairs in each of our hop-growing counties.

PUT AND TAKE

Hop exports in 1948 brought about 6 1/3 million dollars for nearly 6 1/4 million pounds sold abroad.
NOTES FROM ABROAD

The BREWERS' JOURNAL AND HOP AND MALT TRADES REVIEW, Vol. 35, No. 100U, March, 1949 carried several items of interest under the heading, "Notes From Abroad", some of which are quoted herewith:

Australia: In 1946-47 the 33 breweries in the Commonwealth consumed 2,891,040 pounds of hops.

Belgian Congo: About 50 tons of hops are consumed annually by two breweries. U. S. imports, during the war years have given way to Bavarian and Czechoslovakian imports in the post-war period.

Brazil: Does not produce hops in significant quantities. Imports are now predominantly from the U. S.

Chile: Depends upon imports of hops, principally from the U. S.

Czechoslovakia: Official statistics for 1947 show:

<table>
<thead>
<tr>
<th>Areas</th>
<th>No. Growers</th>
<th>No. Acres</th>
<th>Percent</th>
<th>No. lbs.</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zatec (Saaz)</td>
<td>7,724</td>
<td>18,332.3</td>
<td>86.2</td>
<td>8,760,165</td>
<td>84.9</td>
</tr>
<tr>
<td>Ustek-Dub</td>
<td>1,833</td>
<td>1,622.8</td>
<td>7.6</td>
<td>1,009,890</td>
<td>9.8</td>
</tr>
<tr>
<td>Roundice</td>
<td>790</td>
<td>1,158.4</td>
<td>5.5</td>
<td>96,125</td>
<td>1.8</td>
</tr>
<tr>
<td>Trsice</td>
<td>214</td>
<td>150.7</td>
<td>0.7</td>
<td>55,125</td>
<td>0.5</td>
</tr>
<tr>
<td>TOTALS</td>
<td>10,561</td>
<td>21,264.2</td>
<td>100.0</td>
<td>10,321,605</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Ecuador: The entire supply of hops for four breweries is imported, largely from the U. S.

France: An association for research and control of material employed in the brewing and malting industry was established recently. Despite a national hop industry, heavy imports of hops came from Bavaria and Czechoslovakia.

Italy: The Union of Italian Brewers is now studying plans to revive production of hops in Italy. At present imports from U. S., Germany and Czechoslovakia supply the demand.

Portugal: Four breweries import hops predominantly from the U. S.

Sweden: Production of hops is insignificant because the climate and soil are not conducive to low-cost production of good-quality hops. Czechoslovakia and Jugoslavia supply most of the imports.

Union of South Africa: The monopoly of hop growing under the Union Hop Growers (Pty.) Ltd., which owns nearly all the hop acreage, has been so complete that there are few, if any, independent growers.

TEN TO ONE

BREWER AND DISPENSER for May, 1949 carried the following comment: "A stationary hop picking machine is being constructed on the Ed Schott ranch, Selah, Washington, which Mr. Schott claims will enable 40 workers to handle the job formerly requiring more than 400 men."
HOP BREEDING ABROAD

The Thirty-First Report on the Trial of New Varieties of Hops, 1947 by E. S. Salmon was reviewed in the January-February, 1949 issue of the JOURNAL OF THE INSTITUTE OF BREWING. The summary, in part, is submitted herewith:

1. Of the 84 new varieties tested, 2 cropped at the rate of over 27 cwt. to the acre, and 13 at from 20 cwt. to 24 3/4 cwt. These yields were estimated from the actual harvesting of around 16 plants of each variety. In most cases an acre comprised 889 hills.

2. The number of bushels (Imperial) of green hops required to the cwt. of dried hops varied from 69 to 131.

3. High soft resin analyses were obtained with many of the new varieties, the two highest being Brewer's Gold and Brewer's Stand-by.

4. Planting stock of certain varieties found resistant to Verticillium wilt will be increased and made available for grower distribution. "Nonsuch Hop" was most resistant to this difficult disease.

5. Machine-picking of some of the varieties was reported as satisfactory, Brewer's Gold and Bullion in particular.

6. Results of brewing trials were favorable to Brewer's Gold, Early Promise, Fillpocket, Quality Hop and Pride of Kent.

7. The commercial crops of the new varieties, 4,375 cwt., is considerably short of brewers' requirements.

8. Particulars are given of the competitions for the two Challenge Cups offered for the best 1947 growths of a new (Wye) variety of hop. Among the best were Brewer's Gold, John Ford Hop and Northern Brewer.

SOME SERVICE

DOWN TO EARTH, Volume 5, No. 1, 1949, pages 8-10 carried an interesting illustrated article entitled, "British Firm Offers Complete Chemical Spraying Service". This organization was responsible for the first commercial application, in 1948, of systemic insecticide Pestox III (containing bis dimethylamino phosphorus anhydride), particularly for aphids on hops.

The first Spraycopter was put into commercial service last year. The firm is now doing developmental work with a three-rotor helicopter called the Spraying Mantis which will probably be used commercially by 1950. Liquid sprays are favored for all work with the helicopter.

BRITISH BROCHURE

British Information Service, 30 Rockefeller Plaza, New York 20, N. Y., issued, in March, 1949, an interesting well-illustrated 46-page brochure entitled, "Britain Speeds the Plow". On page 12 a Kent hop-picking scene is pictured.
FASCINATING FIGURES

FOREIGN AGRICULTURE CIRCULAR, prepared in the Grain and Feed Division, International Commodities Branch, Office of Foreign Agricultural Relations, U.S.D.A., Washington, D.C., was issued May 14, 1949. The title is, "World Hops in 1948 Under Last Fall's Estimate". This is recommended reading, too meaty to do justice to by an attempted summary. Salem's CAPITAL JOURNAL, May 28, 1949 issue, however, does a pretty good job of it.

INDUSTRY ASSISTANCE

The U.S. Brewers Foundation, through the Brewers Hop Research Institute, will make funds available for the fiscal years 1949-1950 and 1950-51 which will provide three fellowships at Oregon State College.

One of the fellowships will be in the Chemistry Department and two in the Farm Crops Department. Indirectly, some assistance may be furnished to the entomological and plant pathological phases of the federal-state hop investigations work now in progress.

Funds will also be provided for a limited number of brewing tests. These tests are intended primarily to evaluate the brewing quality of experimental hops. Incidentally, they may be employed to determine the effects of certain fungicides and insecticides, applied to hops in the control of diseases and pests, on experimental brews.

LAUREL WREATH LADS

Two of the three Horace A. Moses Foundation scholarships recently awarded to Oregon County Extension Agents went to hop-growing county personnel in the persons of Clifford Jenkins, Josephine County and E. M. Hauser, Malheur County.

The scholarships provide $100 to attend Extension summer school courses to obtain advanced training for their service to rural youth. Hearty congrats from THE HOP PRESS!

FIRE FIGHTER

"Flame Retardant for Farm" is the title of an item published in WESTERN GROWER & SHIPPER, Vol. 20, No. 4, p. 27, which we quote herewith, in part: "Numerous uses have been found for this material such as flame-proofing hop kilns and other structures where heat is used or generated, and for fence posts and the like, subject to grass fires. The chemical is sprayed on, or applied by dipping, and gives lasting protection. Treated wood surfaces can be painted or finished as usual. The chemical is also used to flame-proof cloth, paper, carpets, upholstery and like materials."

THE GERMANS ARE COMING

Pan American World Airways has been informed by its Frankfort, Germany, office that German hop roots may now be exported to the U.S. where, it is reported, they will be grown experimentally. Substantial shipments to the U.S. by air are anticipated.
"Brewers Foundation Hits Hop Marketing Agreement Details" is the caption of an account which appeared in BREWER AND DISPENSER for May, 1949. The following is a complete quotation:

"THE UNITED STATES BREWERS Foundation, through its Hop Committee, has taken several exceptions to the federal hop marketing agreement recommended by the Department of Agriculture.

"The Foundation's exceptions, contained in a brief filed with the Secretary of Agriculture by C. M. Hester, Washington, D.C., counsel, include:

"1. That 'brewer-growers' be exempted from the salable and surplus percentage restrictions of the agreement.

"2. That brewer members be eliminated from the Control Board entirely unless brewers have equal representation on the control board with growers.

"3. That initial standards of quality and maturity of hops, which under the recommended agreement include only leaf, stems and seeds, be stricken from the agreement and that the establishment of such standards await the development by the Grain Branch of the Department of Agriculture of complete standards of quality and maturity of hops which would include—in addition to leaf, stem and seeds—moisture, discoloration, infestation and damaged cones.

"4. That the so-called 'Hill Plan' method of determining growers' salable allotments be adopted by the Secretary as the initial method of determining salable allotments rather than as an alternative method as is now prescribed in the recommended agreement."

CZECHOSLOVAK CROPS

According to the BREWER'S JOURNAL (England's) of April 20, 1949 the hop harvest, final figures, were as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Quantities in Quintals</th>
<th>Yield per Hectare</th>
</tr>
</thead>
<tbody>
<tr>
<td>1946</td>
<td>107,320</td>
<td>13.9</td>
</tr>
<tr>
<td>1947</td>
<td>93,620</td>
<td>12.1</td>
</tr>
<tr>
<td>1948</td>
<td>97,233</td>
<td>12.4</td>
</tr>
</tbody>
</table>

1. 1 quintal = approximately 1 cwt.
2. 1 hectare = 2.47 acres.

All but 25,000 quintals of the 1948 harvest have been allocated for export.

STORAGE IN CZECHOSLOVAKIA

The BREWERS' DIGEST for September, 1948, page 50 carried a report by W. Goedkoop on "Investigations On Hop Storage". The effect of one year's storage of Zatec hops on the amount of alpha and beta acids and soft resins was determined by chemical analysis. Analyses of hops stored at room temperature, at 0°C. (brewery hop storage room) and at 6-8°C., resulted in the conclusion that to obtain the same bittering effect, 18 percent more hops must be used after storage at 0°C. and 39 percent more after storage at 6-8°C.
ENGLISH EXPERIMENTS

The University of London, Wye College, Department of Hop Research Report 1948 has just come to hand. The table of contents includes: Departmental Staff, Introduction, General Report for the period March, 1947 to March, 1948. This report covers, among other things, manurial experiments, cultivation trials, effect of cutting bines at picking time, hop varieties, hop verticillium wilt investigations and processing of hops.


These articles will be reviewed in detail in future issues of THE HOP PRESS.

SWISS STATION

The Annual Report of the Swiss Breweries Experimental Station, 1947-1948 was abstracted in the JOURNAL OF THE INSTITUTE OF BREWING issue of January-February, 1949. The work of the station was divided between the Chemical and Biological Divisions. Mention is made of a study of the bittering power of hops, chiefly Bohemian.

HOPS IN ENGLAND

Dr. A. H. Burgess of Wye College, England read a paper late in 1948 entitled "Hop Growing". He stated that the cultivation of hops in England is localized in certain areas of Kent, Sussex and Hampshire, in the South-East, and of Worcestershire and Herefordshire in the West Midlands. This localization of the crop in England and in other countries he thought probably due to the particular climate of these areas rather than to a special type of soil. Availability of the necessary skilled labor is a factor also in the location of yards.

IRRIGATION IN BELGIUM


Belgian growers believe hops suffer from lack of water one year in three. Hop growing, it was stated, pays for artificial irrigation, both in quantity and quality of hops.

THE JOURNAL APPLAUDS

The heading above was the title of an editorial in the OREGON JOURNAL of June 3, 1949. On June 1, 150 persons participated in a U.S.D.A. Honor Award Ceremony in recognition of faithful public service performed by employees of the Department in eight western states. Among them was E. M. Bates, Grain Inspection Branch, retired. The Superior Service award was granted him "for improvement and development of grain inspection methods, invention of the hop divider, rice huller and grain aspirator used on threshing machines to control smut."

QUARANTINE QUESTIONS

Nursery Stock, Plant, and Seed Quarantine No. 37, (Revision of Quarantine and Regulations Effective January 1, 1949) is available in printed form through Frank McKennon, Chief, Division of Plant Industry and Market Enforcement, State Department of Agriculture, Salem. This is a publication of the U.S.D.A., A.R.A., Bureau of Entomology and Plant Quarantine.

County Extension Agents will be interested in Regulation 19, Postentry Quarantine which applies to all species of Humulus (hops) imported from all foreign countries.

The only imports so far this season under these new regulations were planting stock of Sunshine Hop from England. Plantings were made at the Golden Gate hop ranch near Independence and at the Ft. Vannoy hop ranch near Grants Pass.

PILING IT ON

Amos Brulotte, Yakima County, Washington hop grower is reported, in one trial, to have secured an average increase of 400 pounds per acre on 365 acres from an application of 15 tons of manure per acre. 

ACREAGE ESTIMATES

Preliminary acreage figures for 1949, secured as a result of a recent survey by the U.S. Hop Growers Association, follow:

<table>
<thead>
<tr>
<th>STATE</th>
<th>PLOWED OUT</th>
<th>IDLE</th>
<th>NEW</th>
<th>TOTAL PRODUCING</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>1000</td>
<td>34</td>
<td>184</td>
<td>9,222</td>
</tr>
<tr>
<td>Idaho</td>
<td>0</td>
<td>0</td>
<td>225</td>
<td>852</td>
</tr>
<tr>
<td>Oregon</td>
<td>2,607</td>
<td>124</td>
<td>208</td>
<td>11,800</td>
</tr>
<tr>
<td>Washington</td>
<td>84</td>
<td>56</td>
<td>72</td>
<td>13,017</td>
</tr>
</tbody>
</table>

CALIFORNIA COVERAGE

In California during 1948, 1,862 acres of hops were treated by airplane for pests and diseases, according to the 29th Annual Report of the California State Department of Agriculture for the period ending December 31, 1948.

DOW DROPS IN

A. Irving Dow, Assistant Agronomist, U.S.D.A., stationed at the Prosser, Washington Experiment Station was a welcome campus visitor May 16 to 21.

He was interested in meeting local personnel and viewing various phases of the experimental work with hops being conducted at Corvallis.
THROUGH AT THIRTY

A wry remark of an actuarial acquaintance, uttered a half decade ago, has stuck in my memory.

The timorous tyro stated that statistics showed the average age of highest scientific production was somewhere in the thirties!

Tough, if true, for those who have already passed that mythical milestone!

Averages may serve very nicely for the mathematician but why should men of maturity, engaged in the less "exact" sciences, be mired down in a theoretical morass of mediocrity!

As for me I would not trade the toga that age and experience entitles me to wear for the spotless clout of any callow youth despite the studied statements of all the statisticians!

Hops are very ancient herbage. Many scientists the world over, whose work has wrought improvements in many phases of the hop-growing enterprise, have grown old in selfless service. Who among more recent researchers would be so brash as to suggest the hard-earned fourragères be stripped from their sagging shoulders!

Much modern hop research would be better had it been more carefully coupled with assiduous research!

The hop industry however, like all other industries, must look to successive crops of comparative "kids" to help, scientifically, solve their perpetual problems.

There is both a place and a need for youth with their eager enthusiasms, new viewpoints, familiarity with improved paraphernalia and new techniques for using the older tools of the trade.

Generations of scientists yet unborn will be serving the hop industry long after the current crop of "old timers" have tottered into retirement at somewhere between sixty-five and seventy years of age!

AN ADMONITION FOR AUGUST

"If you have knowledge, let others light their candles at it."
HONORED

The Moxee City, Washington Commercial Club is sponsoring the Moxee Hop Festival on August 9.

The Honor Guest Committee consisting of Gerald A. Toupin, Oliver J. Beaudry and George Norman honored your Editor by extending an invitation to be present as an honored guest.

'Twas ever thus! "A prophet is without honor in his own country."

HOP FIESTA

C. R. Lamb, President of Hop Bowl, Inc. and Chairman of the Hop Fiesta at Independence, Oregon recently announced the dates for this annual gala gathering at the Independence Hop Bowl as August 31 to September 3.

HOP FESTIVAL

Hopland Post No. 529 of the American Legion is sponsoring a Hop Festival to be held at Hopland, California August 27 and 28.

THE HOP HARVEST

The cover of OREGON TAVERN NEWS for July, 1949 was a reproduction of the first in a series painted for the George Segal collection by Robert Benney, noted American painter and illustrator.

While we appreciate the problems of perspective the gradient at which the hops are being harvested would present, in actual practice, some erosion problems of first magnitude!

WILLAMETTE WAGE SCALE

Dean Omans, Manager, Independence Hop Growers, called a meeting, open to hop growers from all sections of the Willamette Valley, the evening of July 19. Joseph Wilson, State Supervisor of Farm Labor, and William Baillie, Manager of the Salem office of the Federal Employment Service, were scheduled to speak on intrastate and interstate farm labor problems.

The 1949 hop-picking wage scale for the Willamette Valley hop area was announced.

OFFICERS CHOSEN

According to an item in the OREGONIAN of July 26, 1949, Fred Lucht was recently elected President of the Mt. Angel Hop Growers Association, with Leland Woodley as Vice-President and Ed Willig as Manager.

The two directors elected for three-year terms were Leland Woodley and Allie Humpert, chosen to succeed themselves.

Other Directors are Dave Scharer, Peter Gual, Elmer Palmquist and A. J. Lelak.
NEWS ON NUTRITION

F. C. Thompson, in University of London, Wye College, DEPARTMENT OF HOP RESEARCH REPORT 1948 contributed a highly informative article, "The Nutrition of the Hop Plant. A Review of the Literature." Certain summaries are presented herewith:

1. Deficiency symptoms for a range of plant nutrients have been described from the results of pot and water culture experiments.

2. The need for high levels of nitrogen and potassium has been demonstrated.

3. The results of English experiments have shown that wide variations in the time of application of nitrogenous top dressings have little effect on the crop, though an early application is considered desirable. Continental work, however, suggests that a very late application may also be beneficial.

4. It has been shown that so long as sufficient humus is added to the soil to prevent deterioration of the physical structure, there is no special virtue in using organic fertilizers for hops.

5. No simple relation between manuring and the resin content of hops has been found. "Little is known," it is stated, "about the interactions of nutritional factors in the growth of hops, or about the optimum levels of nutrients necessary for maximum growth and yield under varying conditions. The level of available potassium in the soil may be an important factor in relation to the development of magnesium deficiency in hops."

Nutritional deficiency symptoms in hops were summarized as follows:

1. Calcium

"Growth reduced generally slightly yellow-green interveinally becoming pale buff and defoliating extensively from base; some bronze spotting as in phosphorus deficiency, laterals and floral spikes frequently dying back and generally reduced."

"Growth thin; death of growing point; die-back of main and lateral shoots; younger leaves downcurling of margins, colour pale with marginal chlorosis, and necrotic spotting becoming narrow brown marginal scorches."

2. Magnesium

"Growth reduced, lower leaves pronounced interveinal yellow-green to yellow chlorosis followed by fine brown necrotic areas and occasional marginal scorches, severe and extensive defoliation, laterals and flowering much reduced."

3. Nitrogen

"Growth very thin, leaves small, pale, becoming yellow and defoliating, petioles red, very few laterals and flowering greatly reduced."

"The position taken by the leaves is characteristic, in that they arch and hang vertically downwards."
4. Phosphorus

"Growth thin, leaves small, dull alive green becoming bronze due to profuse brown spotting interveinally on underside of leaf, finally yellowing and defoliating; laterals and flowering reduced."

5. Potassium

"Growth stunted; leaves small, lower leaves interveinal paling followed by severe brown, grey or purple-tinted upcurled marginal scorch extending only slightly between the veins, narrow yellow-green chlorotic area within scorched margins; leaves finally shrivelling with considerable defoliation; laterals and flowering poor; downcurling of the leaves."

6. Trace Elements (Boron, chlorine, iodine, magnesium, manganese, sulphur)

"Growth reduced, lacking vigour, leaves small, pale, older leaves slightly yellow-green interveinally, considerable interveinal bronze spotting under surface (as in low phosphorus), some browning and scorching interveinally towards base of leaf, and withering."

HOPS IN REVIEW

The WEEKLY SPECIALTY CROPS REVIEW issued at Corvallis, June 27, 1949 contained the following interesting information:

"The 1948 world hop production has been revised downward, according to the weekly specialty crops review prepared by the OSC extension service from USDA reports and other data. Total production is now estimated at nearly 111 million pounds. This is down about 6.3 million pounds compared to earlier estimates. This is about equal to the 1947 crop, but is around 8 percent below the prewar average. The main reduction occurred in the principal producing sections of Europe, namely, United Kingdom, Czechoslovakia and Germany. Reductions also occurred in Belgium and the United States.

"Stocks of U.S. hops on May 1 are up compared to a year ago. The supply was approximately 46 million pounds. This is about 5.5 million pounds above the same date last year.

"The U.S. exports of hops during the first seven months of this marketing season were about the same as a year ago. Exports amounted to 10.2 million pounds. Normally 82 percent of the hops are exported during this period. Canada was the principal importer due to their short crop last year. Exports also were increased to Ireland, Belgium, Portugal and the Netherlands.

"On the other hand, U.S. hop imports have increased so far this year. Over 3 million pounds have been received, which is about double last year's imports."

DOW COMES DOWN

For the second time this season, A. Irving Dow, Assistant Agronomist, U.S.D.A., stationed at the Irrigation Experiment Station, Prosser, Washington made a "quickie" call at Corvallis during the latter part of July. He brought a batch of Yakima Valley hopyard soil samples with him for analysis and conferred with Dr. K. R. Keller concerning his experimental program while here.

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LICE AND MITES

Stauffer's NEWS LETTER, issue of July, 1949 carried the following item of interest, "Hop growers have been cautioned to keep a sharp lookout for aphids and mites by Extension Entomologist David H. Brannon of Washington State College.

"Control measures for aphids must be applied prior to the burr stage and before the aphids enter the cones. Mite populations annually build up in July and August.

"He said that in the Yakima Valley, a major hop-growing area of the state, only a few infested hopyards were found a few days ago, according to reports from E. C. Klostermeyer, Entomologist of the Irrigation Experiment Station, Prosser. Klostermeyer said the aphid population was not high because weather conditions following the aphid hatch were not very favorable for aphid development.

"Brannon pointed out that if aphids can be found anywhere in the hopyard a dust treatment would be good insurance. This dust is tetraethyl pyrophosphate or nicotine; however, he said nicotine is less effective in western Washington than on the east side. Parathion is effective against both aphids and mites but should not be used after burr formation. DN (Dinitro-o-cyclohexyl phenol) dust is effective against mites."

ADVICE ON APHIDS

The Spokane, Washington SPOKESMAN REVIEW for June 16, 1949 under the heading, "Aphids Return to Hop Yards" ran some remarks by E. C. Klostermeyer, Junior Entomologist at the Irrigation Experiment Station at Prosser that would have been an item of interest for hop growers in Oregon.

Of particular interest was the remark that, "hop aphids spend the winter and spring on prune, plum and sometimes apricot trees."

"He advised growers to examine their yards carefully, especially around the margins of the yard, on suckers and wild hops along roadsides. If any aphids are found, even though few in number, control measures should be applied immediately because if aphids are not controlled now, infestation of the cones and possible damage from sooty mold is certain to occur by harvest."

This same advice is applicable to Oregon!

LONG AGO

Duncan Macfarlane in his column, "As It Looks From Here", in the OREGONIAN for July 10, 1949 mentioned a matter of interest, quoted herewith in full:

"Willamette valley hop growers, in the summer of 1889, were quite pessimistic about the crop. Growers from Marion, Yamhill and Polk counties met at Salem and concluded the crop would be about 5000 bales under the 1888 total. They adopted a standard picking box, 3 feet long, 30 inches deep and 16 inches wide. They also heard fellow growers say that white workers were best for picking because Chinese were too independent and Indians too unreliable."
COMMITTEES CONFER

A joint meeting of the Oregon Hop Research Advisory Committee and the Hop Research Committee of the Oregon Experiment Station was held at Corvallis on June 24.

Personnel of the two committees were announced in the November 15, 1948 and May 6, 1949 issues of THE HOP PRESS.

A conference covering past accomplishments and future work to be undertaken by Federal workers and State cooperators in both Oregon and Washington was held during the morning.

The afternoon was devoted to a tour of inspection of greenhouses, experimental plots on the college farm and a fertilizer plot located in a nearby commercial yard.

SOIL SURVEY

Hopyard soil surveys have been completed of all yards in Benton, Linn, Malheur and Umatilla counties, Oregon. R. A. Llagee, Chemist, U.S.D.A. was in charge of collecting soil samples and making percentage counts of weak and missing hills in Benton and Linn counties. Your Editor performed similar service in Malheur and Umatilla counties.

Irving A. Dow, Assistant Agronomist, U.S.D.A. conducted a similar survey in the Yakima Valley, Washington.

According to newspaper releases by John Keene, Associate Extension Agent at Yakima, dated July 7, "A letter and questionnaire will be sent to all growers in the lower valley informing them of the survey and asking them to check certain fertilization practices that they use.

"While all lower valley growers will be sent the questionnaire, only a certain percentage, chosen entirely at random, will be among those whose soils will be sampled. The information gained from the survey will be concerned with organic matter content, soil alkalinity or acidity, number of missing hills and fertilization practices related to the yield of hops."

Similar information will result from the surveys in both states. Results, eventually, will be summarized in THE HOP PRESS.

POST PAPER

Robert D. Graham authored an interesting publication entitled, "Service Life of Treated and Untreated Fence Posts." This is progress report No. 2 of a research project of the Oregon Forest Products Laboratory, Corvallis, Oregon. It was published in May, 1949.

NICE NASH

A. S. Nash, Director of New Zealand's Hop Research Station has been very generous and most helpful in exchanging letters and literature concerning hop problems in New Zealand and observations resulting from his visits to hop-growing areas of England and Czechoslovakia.
BELGIAN REPORT

An abstract of an article by G. Meneret which appeared in BRASSERIE 3, No. 28:9-11 (1949) entitled "Belgian Studies and Researches on the Improvement of Hop Production" appeared in WALLERSTEIN LABORATORIES COMMUNICATIONS for June, 1949. It is quoted herewith, in full:

"A report has recently been published covering the work carried on in Belgium during the war on the improvement of the quality of locally cultivated hops. Special emphasis was laid on plant selection and fertilizers. Hops of Belgian, French, English, Czech, Lithuanian, and Russian origin were studied; special attention was given to the varieties Hallertau and Tettnang. These two varieties also produced the most promising hybrids.

The report includes a study on the relationship between certain colloidal characteristics of a hop and the evaluation of its brewing value. The following conclusions were reached:

"There exists a relationship between the soft resin content (particularly the a-resin content) and the Pulfrich photometer reading of aqueous extracts of the hops.

"There is no relationship between the b-resin content of the extracts and their light transmittance.

"Opacity is proportional to the a-resin content of the extracts.

"Surface tension and a-resin content are inversely related.

"Experimental brews made with the hop varieties under study confirmed the widely held view that certain hop varieties are particularly suitable for top-fermentation beers (i.e., Styria No. 23, Fuggles).

"The influence of fertilizers on hop development was studied, and several balanced formulas were developed to improve hop yield in siliceous clay soils. The importance of an adequate supply of boron on hop yield and a-resin content is stressed."

CAL SPRAY SPEAKS

Salem's CAPITAL JOURNAL, issue of July 16, carried the following encouraging account, "Trial Dusting Hops Prove Successful."

"According to Gordon Black, field representative of the California Spray company of Portland, several trial dustings of Vapatone No. 66 in eastern, southern and northern districts of the Independence hop areas have been applied with much apparent success as a dual dust which will control aphids and red spiders.

"This is good news to the hop growers because to date satisfactory red spider control has been difficult to obtain. Although the common mildew is practically nil in this year's crop so far, much red spider and aphid has been reported.

"These trial dustings have had the personal supervision of Gordon Black. Vapatone No. 66 may be secured at any time at the warehouse of the Independence Hop Growers."

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NOTES FROM ABROAD

The BREWERS' JOURNAL AND HOP AND MALT TRADES REVIEW for May, 1949 carried several items of interest, under the above heading, some of which are quoted herewith, in part:

Argentina: "Production of hops in Argentina in the 1948-49 season is roughly estimated at 40 to 45 metric tons, compared with 100 to 110 tons in the 1947-48 season. A larger crop had been anticipated but was reduced by drought. The area sown is placed at about 568 acres, compared with 618 acres last season. Stocks of hops are believed to be ample, in view of the policy of importers to maintain large stocks.

"Official import data are unavailable. However, during the first part of 1948 shipments are believed to have been in line with those of previous years. In 1946, imports totalled 597 metric tons and in the first nine months of 1947 amounted to 465 tons. Practically all hops imported into Argentina come from the U.S.A."

Canada: "Canada's hops production declined to 1,721,000 pounds in 1948, a 31 percent reduction from the 1947 yield of 2,491,000 pounds. Consumption of hops by the brewing industry increased in 1948, as compared with 1947.

"The quantities of hops which will be required by the brewing industry in 1949 may decrease slightly in view of the possible drop in beer production, particularly if the production of hops used per gallon continues to decline. In view of the small domestic crop, however, the quantities of imported hops required may still increase substantially.

"Imports of hops in 1948 amounted to 3,702,000 pounds, of which the U.S.A. furnished 3,594,000 pounds; in 1947, imports amounted to 2,935,000. Since 1945, however, small quantities of hops have entered Canada from Czechoslovakia each year, imports having reached 152,000 pounds in 1947, but dropping sharply to 19,000 pounds in 1948. In 1947, the United Kingdom shipped about 45,000 pounds and increased the total to 95,000 pounds in 1948. Belgium also shipped a few thousand pounds in 1948.

"Domestic producers are said to be fearful that the present trickle of hops from Europe may in future years become a flood that may force prices in Canada below the cost of production. This may be a factor in the reluctance of these producers to increase their hops acreage."

KIND KEYWORTH

Dr. W. G. Keyworth, connected with the Plant Pathology Section of the East Malling Research Station at Kent, England has proven a most considerate correspondent and very liberal in supplying lots of literature on hop diseases, to which our numerous abstracts bear witness.

VERTICILLIUM WILT

In University of London, Wye College DEPARTMENT OF HOP RESEARCH REPORT 1948, N. H. Fizer, E. G. Cripps and F. C. Thompson authored an involved article on "Hop Verticillium Wilt. An Account of Soil and Nutrition Investigations at Wye in the years 1944-47." A summary of the summary reveals that leaf analyses showed nutritional differences between apparently healthy Fuggles in healthy and infected yards. Significant differences were found for calcium, silicon and nitrogen; the first two being higher in infected yards and the nitrogen lower. This extensive and intensive bit of research was interesting but inconclusive.
ALWAYS A BRIDESMAID

The ancients were aware of bugs before they were of botany. They learned a lot about plants before they became proficient in plant pathology!

Entomologists estimate that there are a minimum of 662,298 known species of insects. At least one percent of these "bugs" have been reported busily engaged in doing about a billion "bucks" direct damage to crop plants annually!

Botanists believe that there are around 350,000 species of plants on our planet. That's more, my friends, of this total some 125,000 are phanerogams and 225,000 are cryptogams. Of the "cryptos", perhaps 75,000 cause plant diseases! No cultivated crop completely escapes. The yearly loss is large to say the least!

Karl Von Linne, commonly called Linnaeus, was a taxonomic tycoon. This scientific son of Sweden, 1707-1778, was the most august botanist of his age. The major merit of the master was that he arranged plants on a simple system of sexual relationship. His successors have followed in his footsteps.

Gregor J. Mendel, 1822-1884, was an Austrian Augustinian abbot. The time he took meandering around the monastery peering at peas is generally conceded to be the gestation period of the modern science of genetics. Mendel's law of inheritance incidentally, in the main, still holds.

Some of our genial jugglers of genes have ignored the inference that "blue blood", in plants as in princes, is commonly conducive to haemophilia!

Had there been an entomologist or at least a plant pathologist among the bridesmaids when the chromosomes were paired, perhaps the newlyweds might have prevailed upon to produce progeny better prepared to withstand a blasting by the beetles and the blights!

The Federal-State-Brewer-financed hop-breeding business being cooperatively conducted at Corvallis will not be easily embarrassed. At its inception, during the season of 1931, the overall objectives were, and continue to be, the development of new varieties of superior quality, higher yields and greater resistance to downy mildew than those now in commercial production. In this painstaking procedure plant pathology plays a prominent part.

A SUGGESTION FOR SEPTEMBER

"The likliest link in any chain can be weakened by a little chiseling."
This is the last, but not the least, part of the "summary" introduced by Dr. Hill and originally referred to in the March 15 issue of THE HOP PRESS. It was prepared by G. R. Hoerner under the heading "Studies of Hop Diseases and Their Practical Field Control." The fact that, in length, it exceeds other contributions is not due to editorial prerogative but stems from the fact that the author has been connected with the hop project for over eighteen years -- a considerably longer period than any of the other contributors. The original write-up has been amended in minor particulars to bring it up to date.

Downy mildew, potentially the most destructive disease to which hops are subject, was first reported present in the United States in 1909 on "wild" hops in Wisconsin but was of only minor interest to mycologists. Reports in 1928 of infected cultivated hops in New York State caused little concern since a major hop production area was not involved. When, however, commercial plantings became infected in western Washington in 1929, followed in 1930 by an invasion of the Willamette Valley of Oregon, the center of the American hop-growing enterprise, the industry became justifiably alarmed.

Oregon State officials undertook a survey to determine the incidence of infection, in 1930, and on the basis of earlier experience in British Columbia and in England, issued descriptions of the symptoms of the disease and tentative suggestions for its control.

The Federal-State cooperative hop disease investigations project was inaugurated in 1931. Primary emphasis was, and still is, placed upon a study of downy mildew, involving (1) the development and application of practical methods of field control, and (2) the introduction of new varieties and breeding to improve disease resistance, productiveness and quality.

Since 1930 downy mildew has appeared in Lewis, Pierce, and Yakima counties, Washington; Benton, Clackamas, Douglas, Jackson, Josephine, Lane, Lincoln, Linn, Malheur, Marion, Polk, Umatilla, Washington and Yamhill counties, Oregon; and in Lake, Mendocino, Sacramento, Santa Cruz, Sonoma, Yolo and Yuba counties, California. Whether introduced or endemic may never be definitely determined. The disease seems to be firmly and permanently established in areas where found and periodically capable of producing recurring epiphytotics.

There is no plausible reason to doubt the possibility of the eventual extension of the disease into any or all hop-growing areas where it has not yet been reported.

Evidence is available to indicate the disease-producing organism may be and probably is spread by water, wind, and in one or more forms, on or in crown or stolon sections used for planting stock.

Quarantine restrictions that have been applied or which are still applicable have not successfully prevented the extension of the incidence of infection in the United States.
Since no varieties of hops now extant are immune and the local breeding program of some 18 years duration has so far produced none that combine the characteristics of resistance to downy mildew, productiveness and quality superior to the three "standard" varieties now being grown commercially, continued development and extension of practical control measures are necessary. Fungicides and methods for their application are constantly changing and the comparative merits of both as applied to the control of hop diseases, with particular reference to downy mildew, call for continuous evaluation in relation to weather and the extent and type of infection exhibited by the disease in the various hop-producing areas of the United States.

In 1930 hop-spraying practices were not standard procedure and are still more or less "hit-and-miss". Then the bulk of the gallonage consisted of quassia extract and whale oil soap for aphis control to avoid the sooty mould associated with the hop louse.

With the advent of downy mildew, fungicides in liquid form, mainly Bordeaux mixture, were employed. Spreaders were advised to insure thorough coverage and following extensive trials with a number of materials a formula for home-made rosin-potash spreader was developed and was, and still is, recommended.

As considerable injury sometimes follows the use of Bordeaux mixture, numerous possible substitutes were tried. While many materials doubtless have optional merit, considering availability, cost, ease of preparation and use as well as effectiveness, a zinc sulphate-lime formula was devised and recommended. The recommendation still stands, subject of course, as all recommendations should be, to possible revision.

Various types of spraying apparatus have been studied, including spray rods, guns, and various nozzles intended for use with the usual types of portable high-pressure equipment, including automatics. Comparisons were made with two types of power atomizers. No equipment recommendations have been issued.

Downy mildew spreads rapidly under favorable conditions and there were inherent difficulties associated with liquid spraying which resulted, perhaps too rapidly, in an almost complete abandonment of liquid spraying in favor of dusting by means of both ground and aerial applications. A discussion of dusting materials used for insect control is beyond the scope of this summary.

Copper-lime dusts were, and now are, generally employed for downy mildew control. Numerous possible substitutes have been tried. While many materials doubtless have optional merit, considering availability, cost, ease of preparation and application, as well as effectiveness, our war-time recommendation indicated a mixture of monohydrated copper sulphate, or powdered zinc sulphate, hydrated lime and bentonite sulphur in applications averaging 50 pounds per acre. Since the war, with copper sulphate no longer a scarce item, we have recommended copper-lime dust, 25-75, at 40 pounds per acre per application.

Various types of dusting equipment have been studied, including the airplane. No equipment recommendations have been issued.

Crown treatments as an auxiliary method of control, previous to fungicidal application, in liquid or dust form, later in the season have been given extended consideration. Numerous crown-treatment materials have been tried.
Our war-time recommendation included three materials: (1) granular or powdered calcium cyanamide (2) monohydrated copper sulphate (3) powdered zinc sulphate. The dust mixture recommended above for field use may also be used for crown treatments. Current recommendations suggest only calcium cyanamide.

Currently, emphasis is being placed on obtaining as much data as possible throughout the growing season, on the mildew resistance of as many of each of the individual plants growing in the Federal-State experimental yards, by means of greenhouse inoculations of vegetative portions of the plants. In addition, the mass inoculations of seedlings of both Fuggles and Late Clusters plants grown from seed from the experimental yards are being made with the hope of obtaining immune or highly resistant plants which may be increased vegetatively and used as parents in the breeding phases of the Hop Disease Investigations project. Should immunity or high resistance be located it should expedite and simplify the process of the development of new varieties combining improved downy mildew resistance, productiveness and quality. This is a pressing need.

Continued evaluation of other and newer fungicides and the machinery devised for applying them such as the speed sprayer and the aerosol generator will be desirable because a return to liquid spraying, in part at least, may be necessary if a more generally satisfactory field control of downy mildew is to be obtained. Present attempts at commercial control of the disease by dusting leaves much to be desired.

There is a pressing need for extension activity throughout the hop-growing sections of the Pacific Coast, where downy mildew is a problem, to remind producers that the disease is an annual threat to profitable production; to impress upon them the necessity of planning their protection practices on a yearly basis and to consider such planning as an insurance program. A switch-back to liquid spraying may be relatively easy in view of the necessity of more thorough control of hop lice necessitated by recent warnings of the Food and Drug Administration.

The information already available in printed form should be repeatedly called to growers' attention and they should be constantly urged to follow the recommendation comprising the numerous sanitary practices prescribed; crown treatments; coupled with spraying and/or dusting.

If growers generally could be encouraged to apply control measures already available to them, carefully and consistently, based on experimentation and observations extending over an 18-year period, the sometimes insistent desire for information relative to newer materials and machinery could be kept within reasonable bounds. This would permit the expenditure of a major portion of the available time of present project personnel on the important objective of producing desirable disease-resistant varieties which might eventually reduce the field control practices to a meritorious minimum. Such a consummation would reduce grower production costs and increase grower profits.

There are other minor diseases, which merit a continuation, perhaps, of the limited attention that has already been given them.

At the moment none of them are comparable in economic importance, so-called "root rots" excepted, to downy mildew.
Quarantine restrictions have been invoked to prohibit grower introduction of foreign planting stock to avoid the possible introduction of serious disease with which the American producer is not as yet burdened.

There are definite physical limitations to the scope and character of work on the disease control phase of the project which can be undertaken and effectively conducted with any reasonable prospects of satisfactory solution with available personnel. Personnel limitations are linked with limitations in budgets.

Under existing conditions it seems desirable procedure for the writer to limit his activities primarily to intensive experimentation on the most important portion of the overall problem. As indicated above this would appear to be an intensive search for breeding material possessing immunity or a high degree of resistance to downy mildew.

**FLETCHER FEATURED**

EXTENSION SERVICE REVIEW, issue of July, 1949 presents an imposing picture accompanying an article entitled, "Extensioners Receive Superior Service Awards."

At the far right of the photo stands hop-growing Lane County's Ottis S. Fletcher.

Following is the swell citation, "Ottis S. Fletcher, County Agent, Eugene, Oreg., for exceptional ability in organizing and conducting effective extension work for and with rural people and for pioneering in the development of and reliance upon a county agricultural policy committee to help guide adjustments in the agriculture of the county."

**SWISS STUDENT**

BREWER AND DISPENSER for July, 1949 carried the following item of interest: "Swiss Farm Youth Studies Hop Production at Yakima."

"A young swiss agricultural student, Martin Hurlimann of Zurich, is in Yakima, Wash., to study mechanized hop production.

"The 24-year old husky blond youth lives with the family of M. A. Lesh, president of the Washington State Hop Producers association. He will study the operation of hop machinery until the middle of August.

"Mr. Hurlimann is one of the two international farm youth exchanges who is visiting Washington this summer.

"The visit and study schedules of the visitor was arranged through the Extension Services of the U. S. Department of Agriculture and Washington State College. Mr. Hurlimann is being assisted in his studies by M. F. Bunnell, Yakima County Agent, and other members of the County Extension Staff.

"The young Swiss student is one of five exchanges from his country sent here under the international farm youth exchange program. The group arrived in Montreal by 24, proceeding from there to Washington, D.C.

"From Washington, Mr. Hurlimann will go to Oregon and California. He expects to return to Switzerland in October. Back in Switzerland he will pass along information learned here to youth and farm groups."
THE HOPPER recently published an article by your Editor entitled, "A Review of Recommendations for the Control of Downy Mildew of Hops."

The popular presentation should make the subject matter of interest to hop growers throughout the United States and Canada.

Requests for reprints are in order.

AMERICAN HOP INDUSTRY

An article entitled, "Problems Ahead For The American Hop Industry" was authored by your Editor in the August 1949 issue of THE AGRICULTURAL SITUATION, a monthly publication of the Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C.

HOP THESIS

D. H. Williams, associated with the Federal-State cooperative hop project here at Corvallis was employed on a part-time graduate student basis from June, 1947 to December, 1948. He received his M.S. in Farm Crops in June, 1949. His thesis, on file in the OSC Library, was entitled, "Chemical and Physical Properties of Seeded, Semi-seeded and Seedless Hops Grown on the Same Plant."

HOPS IN BREWING

In WALLERSTEIN LABORATORIES COMMUNICATIONS for June 1949 reference is made to an article by YVES DEUX in PETIT J. BRASSEUR, Vol. 56, No. 2219, pp. 851-855, 1948 (in French). The translated title was "Considerations on Some New Brewing Techniques."

Among those mentioned was "pretreatment of hops for better utilization."

NETTLEHEAD OF HOPS

W. G. Keyworth was the author of an article in the JOURNAL OF POMOLOGY AND HORTICULTURAL SCIENCE, Vol. 22, Nos. 3 and 4, illus. 1946, "Nettlehead Disease of the Hop." The summary is quoted here with full:

"Grafting experiments with hop plants (var. Fuggle) affected with nettlehead showed the disease to be graft-transmissible. There was usually a time interval of nine to twelve months between grafting and symptom expression. Symptoms were suppressed during periods of warm weather and when infected plants were grown in a warm glasshouse. Observations in commercial plantations showed that the disease spread along the rows when these were "close-planted" and that disease outbreaks occurred at the edges of fields near hedgerows.

"Control measures suggested are the roguing out of affected plants and the use of healthy stock for propagation."

The disease was observed on the following commercial varieties: Bramling, Brewers' Gold, Cobb, Early Bird, Fuggle, Mathon and Tutsham.

The disease was first described in 1895.
THE ONCE-OVER

Annual field inspections of foreign hop plants imported into Oregon were begun last season and are being continued.

On June 7 of this year C. G. Anderson and H. F. Bock of the State Department of Agriculture and the Extension Hop Specialist inspected plantings of English varieties in Marion and Polk counties growing on the Alluvial, Golden Gate, E. C. Horst Company and Weathers (Livesley) ranches.

Varieties involved were: Brewers' Gold, Brewers' Standby, Bullion, Concord, Early Promise, Fillpocket and Sunshine Hop. All were found infected, in varying degree, by downy mildew.

Various symptoms, suggestive of virus were noted. A yellow flecking of the leaves of Brewers' Gold seems to be characteristic of the variety. In one planting scattered leaf malformations were noted. In another planting as many as 20 percent of the plants exhibited a "witches broom" effect and other symptoms characteristic of a virus. Definite damage was being done!

In the planting of Brewers' Standby, 75 percent of the plants exhibited a mild leaf mottle.

Bullion, in one planting, showed some leaf distortion. In another planting approximately 18 percent of the plants appeared virotic.

Concord showed some leaf mottle.

Early Promise showed a few mottled leaves in one planting.

In the planting of Fillpocket, 100 percent of the plants exhibited yellow, mottled leaves.

Sunshine Hop appeared highly resistant to downy mildew. The bright yellow leaves are apparently characteristic of the variety.

On July 12 the planting of foreign hops on the Ft. Vannoy yard in Josephine County was inspected, in company with C. G. Anderson. Varieties included were: Brewers' Favourite, Brewers' Gold, Bullion, Burgunder, Early Green, Early Promise, Landhopfen, Samling, Spelter, Sunshine Hop.

The typical yellow flecking of the leaves of Brewers' Gold was evident. The plot had just been irrigated so that an individual inspection was not possible. From previous records, however, it is known that none of the varieties are immune to downy mildew although they vary in the degree of resistance.

Any symptoms of virus diseases, if present, were masked by extensive damage from a heavy red spider mite infestation.

CROP PROSPECTS

As of August 1 the California crop was estimated at 14,260,000 pounds — 26 percent above last year and 19 percent above the previous ten-year average. The Oregon crop was estimated at 13,320,000 pounds — 15 percent below last year. The Washington crop was estimated at 21,285,000 pounds — 6 percent below last year.
### HOPS IN OREGON - 1949

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>NUMBER GROWERS</th>
<th>PERCENT OF TOTAL</th>
<th>AV. NO. ACRES PER GROWER</th>
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<td><strong>TOTALS</strong></td>
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<td><strong>100.0</strong></td>
<td><strong>36.2</strong></td>
<td><strong>14,624.54</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
DOFFING THE DERBY

The hop industry, so 'tis said, is dealer-dominated. It's a tribute to the tradesmen, if true. Take a bow, boys!

I'm not so naive as not to know that some hop factors have their faults.

The question of hop quality, however, is one that has been emphasized by the factor rather than by the farmer.

At least eleven percent of Oregon's diminishing hop acreage is operated by dealer-growers. They have learned, at first hand, the problems of producers and have paved the way to the solution of many of them. The introduction of mechanical harvesting and improvements in drying procedures are but two of many monuments to their imagination.

Buying and selling hops is a risky business at best. Few folks engage in it without hope of reasonable reward, and remain merchants very long, that is! Prospects of profits in any business are not primarily predicated on philanthropy. I daresay, however, the hop industry includes as many generous gentlemen among its dealers as does any other agricultural aggregation. They dote on donations to industry-sponsored scientific research and never fail to fall in line to furnish funds for grower groups.

The dealer not only often finances the farmer but sometimes takes "paper" from the purchaser. Like the grower, he wagers on the weather and potential damage to the growing crop from diseases and pests. At the bitter end he may be forced to pay for a crop which reaches him in questionable condition. He not only has to try to outguess the Almighty but to anticipate domestic production and consumption, the stability of both the export and import market and the fate of foreign exchange. That he manages, against such odds, to make money is a modern miracle.

Indeed I do doff my derby to the dealers. Their services certainly surpass their shortcomings.

AN OBSERVATION FOR OCTOBER

"Some people, like boats, toot loudest when they're in a fog."
EXPERIMENTAL OBJECTIVE

Reference is made to THE HOP PRESS, issue of April 4, 1949. On page 8, under the heading "Objectives Outlined", four experimental projects were listed. A fifth has recently been added, namely,

5. Chemical investigations relative to the evaluation of hops.

MORE MONEY

THE CORVALLIS GAZETTE TIMES, issue of September 13, 1949 carried an item of interest under the heading, "Board of Higher Education Gets Gifts for Units."

"Oregon State College, among its gifts, counted $12,000.00, half from the federal government and half from the United Brewers' Foundation, Inc., through the Agricultural Research Foundation, for inspection and grading of hops."

This amount of money plus the $14,000.00 previously appropriated by the Board of Directors of the U. S. Brewers Foundation for a two-year period to expand the program of hop research centered at Corvallis, as reported in the May 6, 1949 issue of THE HOP PRESS, provides a total supplemental annual appropriation approaching that provided by the Federal government for all other research work now being conducted cooperatively with the states of Oregon and Washington.

PROCESSING RESEARCH PROPOSED

The SPOKANE CHRONICLE on August 18 carried the following item of interest from Washington State College, Pullman, "Hop Processing Research Urged."

"A proposed plan for research on the drying and processing of hops has been issued by Eric B. Parker, director of the division of industrial services with the hope of developing a cooperative research program with the state's hop industry.

"The following phases and practices were set forth as worthy of research or study: Drying, cold storage of green hops, vacuum packing of chopped hops and effects of maturity of hops on strength, flavor and aroma characteristics."

HOP FREEZING FACTS

E. H. Wiegand and D. E. Bullis are joint authors of a 25-page, illustrated, typed report on "Hop Freezing Investigations". The investigations were conducted by the Oregon Agricultural Experiment Station Departments of Food Industries and Agricultural Chemistry through the Agricultural Research Foundation. These interesting data were dated June 1, 1944.

DETAILS ON DESTRUCTION

PLANT DISEASE SQUIBS, a newsletter prepared by A. F. Sherf, Nebraska's Extension Plant Pathologist, under date of May 16, 1949 carried this comment, "Plant diseases are worth talking about! A recent compilation by the U.S.D.A. reports there are about 50,000 diseases on economic plants in this country.... the estimated annual loss from plant diseases is 1 1/2 billion dollars."
WAGE WRANGLE

The OREGON JOURNAL, issue of September 4, 1949, under the heading, 
"Unionist Scores Hop Yard Pay", carried the following account:

"Wages paid workers in Willamette valley hop yards were described as 
deplorable" by union labor leaders here today.

"F. D. Sweringen, executive secretary of the Salem Building Trades 
Council, said hop growers were "asking for organization" of workers by their 
treatment of pickers this year.

"Investigation of earnings by workers in hop yards, following numerous 
complaints, Sweringen said, has shown that top pickers are earning only 
45 to 50 cents an hour.

"Sweringen pointed out that hop yard workers are organized in California 
and Washington and predicted that unionization of workers in Oregon will 
follow unless the growers in this area give the workers a better deal."

THE OREGONIAN, issue of September 5, 1949, ran the following reply, 
"Hop Growers Deny Charges. Wages, Conditions Reported Good."

"Hop growers in the Independence area late Saturday denied emphatically 
charges of F. D. Van Sweringen, executive secretary of the Salem Building 
Trades council, that pickers there are being treated unfairly.

"Dean Omans, secretary of the Independence hop growers group, and other 
spokesmen said Van Sweringen was "off his base" in declaring that conditions 
were deplorable and that top picking wages averaged a maximum of from 
30 to 35 cents an hour. He said with a good yield of late hops now coming 
on pickers could net from $8 to $12 a day.

"Growers also branded the labor leader's statement that prices for hops 
this year are as high as last year as erroneous. In many of the yards, Omans 
said, hop pickers are provided with cabins, stoves, fuel and other concessions 
without charge.

"We certainly are not in the business of operating a 'squeeze', as 
Van Sweringen calls it," Omans said. "We are in a legitimate business and 
are treating our employees fairly."

No matter what the outcome of the above argument, it is generally 
agreed that hand pickers are becoming increasingly hard to get at any price. 
Machine harvesting is helping to solve this serious problem. Joint ownership 
and use, by several growers in the same neighborhood, of harvesting equipment 
might well be seriously considered by smaller growers for whom individual 
purchase of a picking machine would be impracticable.

NEW NEWSLETTER

Recently received was DOW CHEMICAL NEWS FOR WESTERN AGRICULTURE. 
Northwest Edition, Number 16, September, 1949 was a nice one. If interested 
in receiving this publication regularly write Great Western Division, 
The Dow Chemical Company, Textile Tower, Seattle, Washington and have your 
name placed on their mailing list.
CEILING SET

THE DAILY SUMMARY of the U. S. Department of Agriculture for September 6, 1949 carried the following pertinent paragraph, "Salable Quantity of Hops Fixed."

"The Department of Agriculture announced today the issuance of an order fixing 39,000,000 pounds the salable quantity of 1949 crop hops grown in Oregon, California, Washington and Idaho, which may be handled as hops or in the form of hop products, under the Federal marketing agreement and order which became effective July 2, 1949. A preliminary announcement of this proposal was made by the Department August 16, 1949."

PROGRESS AT PROSSER

The annual Field Day at the Irrigation Experiment Station at Prosser, Washington was held on August 31. Your Editor appeared on the program, along with Federal Agronomist A. I. Dow and E. C. Klostermeyer, Station Entomologist. A total of 550 were in attendance, including some forty folks interested in hops.

The processed "Progress Report of the Research Program, 1949" is well worth writing for:

Of particular interest to readers of THE HOP PRESS are:
Separate No. 2, Part I. "Hop Pest Control" by E. C. Klostermeyer. He reports on: (1) Seasonal history of the hop aphid, (2) Insecticide experiments, (3) Time of application of insecticides. Separate No. 6 is a succinct and informative discussion by A. Irving Dow under the heading "Hop Investigations."

NOTES FROM ABROAD

An interesting article under the above heading appeared in the July 20, 1949 issue of THE BREWERS' JOURNAL AND HOP MALT TRADES REVIEW.

Abstracts are presented herewith:

Australia: The adverse season in Tasmania has resulted in a drop in hop production of about 60 percent below normal. Tasmania usually produces about 90 percent of the total Australian crop. State prices ministers recently approved an increase of sixpence per pound in the price paid to Australian hop growers.

Belgium: The Technical Centre of the brewing, malting and connected industries was inaugurated in Brussels recently. The task of this institute, which is subsidised by the Government, is to concentrate and to co-ordinate scientific research and to make the results available to the brewing industry.

Czechoslovakia: The establishment of a national hops and lupulin export society which centralizes the entire hop export under State control and practically excludes private enterprise, has caused some misgivings abroad, particularly in France. The office of the Government trustee of the export society is at Zatec (Saz), Bohemia.

France: M. Edmond Urion, director of the famous Brewery School of Nancy, has been nominated dean of the College of Science of Nancy University. He occupies the chair of biological chemistry, but has not abandoned the directorship of the Brewery School.
HOPS IN TASMANIA

P. H. Thomas authored an interesting illustrated article, "The Tasmanian Hop Industry" in the May, 1948 issue of THE TASMANIAN JOURNAL OF AGRICULTURE.

The growing season is from October to January. Wind breaks are essential. Yields average 2,000 pounds per acre, dry weight. Varieties, in order of ripening are: Fuggles, Whitebine Grape, Kent Golding, American Golden Cluster, Lates. The average annual production is 2,500,000 pounds.

American Golden Cluster, Fuggles and Lates comprise 10 percent each of the total acreage; Kent Goldings, 30 percent and Whitebine Grape, 40 percent.

Henry W. Shoobridge prepared an interesting mimeograph entitled, "Notes on the History of the Hop Industry in Tasmania." A copy of this mimeo, as well as a reprint of the Thomas article, referred to above was obtained through the courtesy of the Australian Embassy, Washington, D. C.

Hop plants were introduced into New South Wales in 1802 and into Tasmania in 1804. Early Tasmanian varieties were: Springfield, Redbine, White Grape, Late Grape, Canterbury Goldings, Fuggles, Early Goldings, and GoldenClusters from "Tecoma" and New Zealand.

Since 1932 imports of planting stock have been prohibited to avoid the possible introduction of downy mildew.

HOPS MARKETING SCHEME

THE BREWERS' JOURNAL AND HOP AND MALT TRADES REVIEW, issue of July 20, 1949, reports a review of the 17th annual general meeting of registered English hop producers. Details of the Scheme, dating from 1932, were discussed. Acreage for 1949 totaled 22,207, a decrease of 581 acres from 1948 figures. British hop consumption figures, in cwt., dry, follow:

<table>
<thead>
<tr>
<th>Year</th>
<th>Consumption</th>
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<tr>
<td>1949</td>
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</tr>
<tr>
<td>1948</td>
<td>278,000</td>
</tr>
<tr>
<td>1947</td>
<td>313,000</td>
</tr>
<tr>
<td>1946</td>
<td>338,237</td>
</tr>
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</table>

PARAGRAPHS ON PARATHION

AMERICAN CYANAGRAMS, summer issue, 1949 ran a reprint of a discussion in BETTER FRUIT entitled, "Parathion - Not Stored in Tissues."

This item is of interest in connection with the use of this insecticide on hops in the control of lice and red spider mites.

BELGIAN BITTERS

The JOURNAL OF THE INSTITUTE OF BREWING, issue of May-June, 1949, carried an article by F. Govaert, Director of the Organic Laboratories, University of Ghent, Belgium entitled, "Bitter Principles of the Hop."
ENGLISH INFORMATION

A summary of the "Annual Report, 1947, of the East Malling Research Station" appears in the March-April, 1949 issue of the JOURNAL OF THE INSTITUTE OF BREWING.

Of particular interest are references to the appearance of two disorders of hops: (1) "leaf curl" which caused the leaves to curl downward and become dark green with necrotic flecks, and (2) characterized by the presence of irregular "oak leaf" chlorotic patterns on the leaves.

Split leaf blotch was shown to be graft transmissible.

Phytophthora root rot was reported for the first time on Mathons. Of the new varieties, Bullion and AEE44 were affected.

The Report contained an article by A. M. Massee on the control of hop red spider. He recommends the use of lime sulphur or derris spray in May or early June and a second application ten days later if needed. In badly infested yards the broadcasting of naphthalene immediately after picking is recommended.

MOSAIC DISEASE

"Mosaic Disease of the Hop. A Study of Tolerant and Resistant Varieties" is the title of an account by W. G. Keyworth in the ANNUAL REPORT of the East Malling Research Station 1946 (1947).

The disease was first described in England in 1923 although it may have existed for many years previously under the name, "false nettlehead."

It is known to be graft transmissible.

Keyworth's study was started in 1942: (1) To determine the proportion and distribution of mosaic carrier plants in commercial Fuggle yards. (2) To observe the effects of planting Fuggles and Goldings in proximity in commercial yards. (3) To select mosaic-sensitive and tolerant male varieties as a prelude to the raising of clones of such males for planting in commercial yards. (4) To determine the reaction to mosaic disease of a number of Wye Seedling varieties.

Mosaic-sensitive varieties include: Canterbury Golding, Golding, Rodmersham Golding, Tutsham, Wye Seedlings — OF27, OR75, WFA111, WFF28 and certain males.

Mosaic-tolerant (carrier) varieties include: Allcorn, Colgate, Fuggles, Tolhurst, Wye Seedlings — A001, 0063, WFB26, WFF12, 413a, certain males and 1147 (a commercial seedling).

RESISTANCE TO VERTICILLIUM WILT

The same author contributed an interesting article in above ANNUAL REPORT under the title, "Notes on Varieties of Hop Resistant to Verticillium Wilt."

Some 220 commercial and Wye Seedling varieties have been tested since 1939. None of the commercial varieties showed satisfactory resistance but a number of Wye Seedlings and one variety bred on a commercial yard did.
Planting stock of none of them was available for distribution at the date of publication of the REPORT.

**Very resistant varieties:** OB53 (Nonsuch Hop), OM26, AEE55.

**Moderately resistant varieties:** OR55, OJ47, 219, 1147 (bred on a commercial farm — reputedly from Bates' Brewer).

All the varieties are mosaic-carriers!

Notes on brewing and cultural characters are given of the 7 varieties mentioned.

**VERTICILLIUM WILT**

W. G. Keyworth has published a series of papers on various phases of this important English hop disease all of which are reviewed briefly herewith:

I. "Verticillium Wilt Of The Hop" (Humulus lupulus), ANN. APPL. BIOL., vol. 29, pp. 346-357, 1942.

"A study of Verticillium wilt of the hop (caused by V. albo-atrum but occasionally by V. dahliae) indicated that disease outbreaks varied widely in severity and persistence, some fluctuating in intensity from year to year and others becoming progressively more extensive. Early observations on outbreaks of the progressive type suggested that the disease was being spread during the cultivation process. Experiments made from 1939 to 1941 supported this view and showed that diseased leaves and bine were important agents in such spread. The disease is also spread by the planting of infected cuttings. The disease in hops has been found on some farms to be related to the growing of either potatoes or raspberries. Experiments on soil disinfection have been started and 2% formalin has proved promising when applied at the rate of 8 gal./sq.yd. Experimental control measures have been formulated, consisting mainly of hygienic practices designed to remove sources of inoculum."


"A description is given of the methods by which hop varieties have been selected for resistance to Verticillium wilt and further tested in commercial gardens. The tests have shown that some of the Wye varieties and one variety bred on a commercial farm possess marked resistance to the disease. The experiments extended over the period 1943-1946, a total of 201 new varieties having been tested. Highly resistant were: OB53, OM26, AEE55. Moderately resistant were: 219, 1147, and OR55."


"The soil inoculation experiments and the final direct inoculation experiment demonstrate that the fluctuating strains used were less pathogenic to young hop plants than the progressive strains "..." the main distinction between fluctuating and progressive outbreaks in established hop gardens lies in the strain of V. albo-atrum involved. "..." The differences in the severity of symptoms ... suggest that soil factors may be partly responsible — but it is of course possible that further strains of V. albo-atrum exist."
IV. "Study of a Fluctuating Outbreak", THE JOURNAL OF HORTICULTURAL SCIENCE, vol. 24, No. 2, pp. 149-155, illus. 1948. This type of infection was first studied in 1936.

"The study of a fluctuating outbreak of Verticillium wilt of the hop, during 1943-1945, is described. The distribution of plants bearing infected cuttings was determined in relation to the distribution of plants showing symptoms in 1943 and the subsequent symptom history of these plants was noted. Some evidence that the pathogen was widespread throughout the field is given and it is concluded that the localization of the plants showing symptoms is due to environmental conditions. No evidence could be obtained of any correlation between this localization and soil structure."

NEW INSECTICIDE FOR HOPS

From English sources, under date of September 7, comes the following account: "The results of a new insecticide, which has been tried this year for the first time on a more than experimental scale, were shown to-day to a party of journalists and others who toured some of the hop gardens in Worcestershire and Herefordshire. This insecticide is called Pestox 3 and has been produced by Pest Control, Limited, of Bourn, Cambridge. It has a phosphorus base and works by absorption into the sap system of the plant, the whole of which is for a period rendered poisonous to sucking insects. It can be absorbed through the roots, but it is also readily absorbed by the leaves, and this seems the most practical method of applying it. The pest against which it has so far chiefly been tried is the hop aphis. Last year a few experimental areas were sprayed, with encouraging results. This year some 15,000 acres of hops have been treated, and growers report that they are greatly pleased.

"One grower in the Teme Valley who has given 140 acres of hops two sprayings this year, one in mid-May and the other late in June, said that his hops were entirely clear of aphis. The cost, he said, was less than that of three dustings with nicotine. This was the cleanest growth of hops he had ever had, and the yield was heavy—in one field up to 24 cwt. an acre.

"Another grower who also had an excellent crop made three sprayings with Pestox 3. It was suggested by both these growers that if, as suspected but not proved, it is the aphis which carries the mosaic virus, which for 20 years has been destroying the fine Golding hops for which this area is famous, this new insecticide might be the means of eradicating that disease. Tests have been made which show that not enough of the chemical remains in the hops to do any harm to human consumers of the beer made from them."

BITTER ACIDS OF HOPS


"Simplified method for the determination of bitter hops acids (based on earlier method, C.A. 42, 7927e) involves estimation of alpha acid by polarimetric measurement, potentiometric titration of mixture of alpha and beta acids, and calculation of beta acid by difference."
Caveat Emptor

The subjects of the Caesars employed many frightful phrases. "Caveat emptor" — let the buyer beware, was one of them!

Too many hop growers, of an earlier era, were motivated by this Roman reasoning. There may still be a few rugged rural individualists who would throw everything but the poles into a bale of hops if they thought they could get away with it!

Them days is gone forever! The current season's crop, in all of the western states at least, was the cleanest of record. Discriminating brewers can sigh with relief when purchasing a product that averages, on the basis of official figures, 3.9 percent leaf and stem content. A continuation of this condition can best be encouraged by a more appropriate differential price premium.

I definitely do not agree with Sir William Blackstone that "the dread of evil is a much more forcible principle of human actions than the prospect of good." At least, as far as hop growers are concerned, it is my considered opinion that the fear of being penalized for poor quality would not be nearly as efficacious as the assurance of more money for good quality.

There is an ancient axiom that "the proof of the pudding is in the eating." Liquifying the language, we can as correctly claim that the desirability of fermented malt beverages is discovered at the barrel's bung! In other words, the question of hop quality must eventually be answered by brewing tests. At the beginning, scientific small-scale laboratory brews will serve. In the end the use of industrial quantity brews should be substituted. Malt research has such a setup now. There are highly hopeful prospects that the same facilities may be made of service to hop research.

If and when such a cooperative arrangement is consummated the question of hop quality can be resolved and suitable grades evolved to evaluate it.

A Note for November

"To believe with certainty we must begin by doubting."
SOIL SAMPLE SUMMARY

The following information supplements the paragraph headed, "Soil Survey" which appeared on page 6 of the August 1 issue of THE HOP PRESS.

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<th>COUNTY</th>
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<th>FUGGLES</th>
<th>LATE CLUSTERS</th>
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<td>12</td>
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<tr>
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</tr>
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<td>28</td>
</tr>
<tr>
<td>UMATILLA</td>
<td>4</td>
<td>16</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>TOTALS</td>
<td>9</td>
<td>36</td>
<td>10</td>
<td>40</td>
</tr>
</tbody>
</table>

In the Yakima Valley of Washington 4 samples each were obtained from 54 fields of Early Clusters and 56 fields of Late Clusters representing approximately 2400 acres.

MISSING HILLS

In the process of securing soil samples, a summary on which is presented above, the following information was secured on missing and weak hills.

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>Average Percentage of Missing and Weak Hills</th>
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</thead>
<tbody>
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<td></td>
<td>EARLY CLUSTERS</td>
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<td>20.00</td>
</tr>
<tr>
<td>MALHEUR</td>
<td>3.30</td>
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<tr>
<td>UMATILLA</td>
<td>13.00</td>
</tr>
<tr>
<td>AVERAGE</td>
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</tr>
</tbody>
</table>

In the Yakima Valley of Washington missing hills in Early Clusters ranged from 0 to 88 percent, with an average of 10.7 percent. In Late Clusters the range was from 0 to 19 percent, with an average of 5.2 percent.
POST CARD QUESTIONNAIRE

A. Irving Dow, Assistant Agronomist, U.S.D.A., stationed at the Irrigation Experiment Station, Prosser, Washington, mailed an inquiry on hop fertilization practices to survey the situation.

"Out of 147 growers in the lower valley there were 61 replies (41%) to the questionnaire. Of the 61 growers who replied the following figures are reported:

90% use barnyard manure
78% use commercial fertilizer
50% return the hop vines to the soil
27% grow cover crops
18% use compost materials

Combinations of practices:

28% use commercial fertilizer, barnyard manure and hop vines
20% use commercial fertilizer and barnyard manure only
12% use commercial fertilizer, barnyard manure, hop vines and cover crops."

FIELD TRIAL FACTS

AGRONOMY JOURNAL, Vol. 41, No. 8, August, 1949 carried an interesting article by Kenneth R. Keller entitled, "Uniformity Trial on Hops, Humulus lupulus L., for Increasing the Precision of Field Experiments."

It was found that a rectangular plot of 1 x 5 hills (1/136 A.) was sufficient for use in conducting experimental field trials on hops. A minimum of three replications was suggested.

This well-written report of much-needed fundamental hop research will be found fascinating by agricultural statisticians.

Reprints are available upon request.

DUSTING CONFERENCE

Stauffer's NEWS LETTER, Vol. III, No. 10, October 10, 1949, carried the following item of interest, "FARMERS AND AIRCRAFT OPERATORS will meet October 20 and 21 in Wenatchee, Wash., for the first annual Washington conference on aerial dusting and spraying. Sponsored by the state aeronautics commission, the state department of agriculture and Washington State College's Institute of Agricultural Sciences, the conference is expected to become a yearly event to discuss a wide range of agricultural aviation problems. Joseph P. Adams, state aeronautics director, and Dr. R. L. Webster, chairman of the division of entomology, Washington State College, originated plans for the meeting. Open to the public and designed chiefly for persons in agricultural aviation, farmers who own planes and commercial dusters, the conference has scheduled discussions of benefits and limitations involved in aerial spreading of insecticides, weed killing chemicals and possibly fungicides. Aerial distribution of plant hormones and pollen will be discussed by Richard M. Bullock, assistant horticulturist at the tree fruit experiment station, Sverre Omdahl, state director of agriculture, will appear on the conference program to outline legal responsibilities in the spreading of chemicals."
ENGLISH ESTIMATES

WALLERSTEIN LABORATORIES COMMUNICATIONS for September, 1949 abstracted several items of interest:


"The 1948 hop-growing season was in general a wet one with temperatures below normal. The quality of the crop was average but more even than in 1947. It is expected that the preservative value will be found to be lower than in the previous year.

"Just after the war an increase was granted in hop acreage. Because of a drop in permitted beer production the area under cultivation is probably in excess of brewers' needs."

A BRIEF FOR BREEDING

2. Another abstract from the COMMUNICATIONS referred to above was of the article by S.O.S. Dark entitled, "The Hop Breeder's Problem" which appeared in UNIV. LONDON, WYE COLLEGE, DEPT. HOP RESEARCH, REPORT 1948 : 49-53, referred to on page 7 of THE HOP PRESS issue of July 8, 1949.

"Methods of improving hops are discussed. Improvement by means of better cultivation practices is unlikely to be successful because hops are already very carefully treated. Breeding techniques are, therefore, necessary.

"Historically, there are three stages in the development of control over variation: (1) The production of as much variation as possible from which to select improved forms; (2) The recombination of variations to build up specified improvements; (3) The development of methods of inducing variation artificially. The first stage of breeding control is illustrated by Salmon's development of the new Wye varieties, and the second or genetical stage is now beginning."

APHIS ADVICE

3. A third abstract from the same issue of the COMMUNICATIONS was of an article in the HOPPER 5, No. 11 : 5-6 (1949) by E. C. Klostermeyer entitled, "Hop Aphid Insurance."

"Aside from deleterious effects on growth and yield, hop aphids (Phorodon humuli) greatly detract from quality. Properly timed applications of insecticides represent insurance against this pest. For best results control measures should be taken prior to the burr stage of the hops.

"Nicotine dust is very effective, but shortages have necessitated the use of substitutes. Tetraethyl pyrophosphate is difficult to handle but gives good results; parathion is also effective."

AUSTRIAN HOP REQUIREMENTS

It is reported that the 104 breweries in Austria require 600 tons of hops annually. Bizone was to supply 400 tons, Jugoslavia 54 tons and the balance presumably from Belgium.
BUSY BRITONS

In the ANNUAL REPORT OF THE COUNCIL OF THE INSTITUTE OF BREWING for the year ended 31st December, 1948 it was stated that work will be undertaken on the chemical constituents of hops and at Sheffield University on the tannins of hops. At the College of Technology, Manchester work is under way on hop antiseptics in beer, biological stability of beer in relation to hop antiseptic, and causes of loss of P.V of hops during storage. At the University of Birmingham experimental brewings were carried out with two Verticillium-resistant varieties of hops.

A Hops Research Institute has been established at Wye College jointly financed by the Hops Marketing Board and the Institute of Brewing. The work undertaken was suggested by the Technical Committee on Hop Research of the Agricultural Research Council as follows:

1. Manurial Trials. Comparisons were made of organic and inorganic nitrogenous manures and of different quantities of nitrogenous manure. Begun in 1937, they were concluded in 1948. Results will be reported later.

2. Cutting the Bine at Picking Time. Cumulative effects of the practice in connection with mechanical picking are being studied.

3. Selection of Golding Hops. The original collection of 120 were made in 1938 from commercial yards. They will be tested for cultural characters and brewing value. Variation in humulone content within the different varieties has been found.

4. Deterioration of Hops during Storage. 40 samples were obtained from 22 growers of varieties: Brewer's Gold, Bullion Hop, Early Bird, Fuggles, John Ford Hop and Northern Brewer. These were stored at room temperature and the rates of loss of humulone compared. Further trials, at three different temperatures, are planned.

5. The Hop Nursery. Of particular interest, among numerous important activities, was the rooting of green shoots of the varieties Early Choice, Pride of Kent and Sunshine Hop.

6. Hop Breeding. The work undertaken under this heading included: (a) a search for male hops resistant to Verticillium wilt, (b) development of a method of storing pollen from one season to the next, (c) techniques for the study of the cytology of male and female hops and (d) the use of colchicine to induce polyploidy.

7. Verticillium Wilt Investigations included manurial trials, leaf analyses and determinations of exchangeable bases of soil samples.

Negotiations are in progress to lease land for an "outstation" in the weald of Kent to test the new varieties.

The experimental kilns at Beltring were destroyed by fire in 1947.

From the EAST HALLING RESEARCH STATION the following lines of work are recorded:

2. Propagation Trials designed to measure varietal and seasonal differences in the take of strap cuts in the new varieties and the clonal Goldings were concluded.

3. Other Investigations resulted in information on the pull required to detach the cones of the principal varieties.

4. Report on Diseases of Hops included: (1) a survey of Verticillium wilt. The severity of symptoms of fluctuating wilt were presumably correlated with high rainfall and low temperature during the growing season and with prior planting of potatoes.

   (2) Resistance trials involved the selection of one new resistant variety and the propagation of resistant varieties by new layering methods.

   (3) Studies of fluctuating and progressive outbreaks included work on the differentiation of the strains of V. albo-atrum, the causative fungus. A study of wilt incidence in relation to the nutrition of the plant disclosed a correlation with the nitrogen status of the plants.

   (4) Virus and suspected virus diseases studied included: (a) nettlehead, in connection with which enations of the leaves were a common symptom, (b) split leaf blotch, (c) "Leaf Curl" with which necrotic flecks are associated, (d) virus vector tests included the use of the hop-damson aphis, Phorodon humuli Schr. as a possible vector of nettlehead and mosaic of Fuggle and Eastwell Golding and with the hop red spider, Tetranychus telarius L. as a possible vector of mosaic and flea-beetle, Psylloides attenuata Koch as a possible vector of nettlehead. Results were negative.

   (5) New varieties of hops were considered as to their suitability, whether they should be increased, restricted or discontinued. It was unanimously decided that none of them should be grown at the expense of Goldings. The new varieties discussed were: Brewers' Gold, Bullion, Concord, Early Choice, Early Promise, John Ford, Malling Midseason, Northern Brewer, Pride of Kent, Quality Hop and Sunshine.

   (6) Golding hops are being grown and will be subjected to brewing tests. Included are: Bramlings, Canterbury Goldings, Early Birds, Eastwell Goldings, Mathons, Petham Goldings and Rodmershams.

KIPLINGER COMPILATION

THE KIPLINGER AGRICULTURAL LETTER is published every other week and circulated privately among Kiplinger clients by The Kiplinger Washington Agency, 1907 K Street, N.W., Washington 6, D.C.

This is interesting information covering a wide range of agricultural subject matter, but not very "hoppy". If interested in subscribing, write the publishers for particulars.

OFFICIAL OFFERING

Genevieve Morgan, Editor of AGRICULTURE BULLETIN, official publication of the Oregon State Department of Agriculture, authored an article of interest in the issue of September, 1949.

"Hop Growing In Oregon" is well written, interestingly illustrated and definitely deserving of being read by readers of THE HOP PRESS. It should be noted, however, that downy mildew is not a virus!
BITTER ACIDS OF HOPS

The July, 1949 issue of THE WEST COAST BREWER carried a chemical abstract of interest, "Determination of Bitter Acids in Hops" by Ingvar Hedlund and Major Steninger in ACTA CHEM. SCAND. 2, 583-91 (1948).

"A two-phase titration technique is applied to the study of lupuline from hops. Characteristic titration curves are obtained for humulone (alpha acid) and lupulone (beta acid). The analytical determination of lupulone is possible by titration in a water-petroleum ether system. A diagram of the apparatus and a discussion of the theory are included."

HOP FERTILIZERS

Section IV of the DEPARTMENT OF HOP RESEARCH REPORT 1948, published by the University of London, Wye College, discussed "Manurial Experiments," started in 1937 to treat with (a) nitrogenous manuring to compare the value of organic and inorganic nitrogenous fertilizers, and (2) to determine the effect of varying amounts of nitrogenous fertilizers. Varieties Canterbury Goldings, Cobbs and Early Bird were involved.

On the basis of 1946 yields of Cobbs and Early Bird, sulphate of ammonia gave lower yields than shoddy and castor meal. This is the reverse of pre-war results. Soil acidity affected yields; the greater the acidity, the lower the yield. The greatest acidity resulted from the use of sulphate of ammonia. The optimum pH was between 6.5 and 7.0 (b) the mineral nutrition of the hop. A blanket application of N was given all plots to determine the effects of P and K. Magnesium—potash balance was studied. Magnesium deficiency was found associated with a high level of available potash. The addition of magnesium sulphate (Epsom salts) and the omission of potash controlled the trouble.

HOP CULTIVATION

Section V of the above report was devoted to "Cultivation Trials" begun in 1930, (a) to show the effect of time of discontinuing deep cultivation and, (b) to compare hilling up in ridges ("striking up") in August and plowing in November, the furrows being turned toward the rows of hops, leaving an open furrow between the rows.

There were six treatments: (1) plowed to a depth of 2 inches in the spring; no deep cultivation, (2) cultivation to a depth of 6 inches once after plowing in spring, (3) cultivation at 6 inch depth discontinued when the vine is 4 1/2 feet high (about the third week in May), (4) cultivation at 6 inch depth discontinued when the vine reaches the top of the string (about the end of June), (5) cultivation to 6 inch depth discontinued when the hop is in the "pin" stage (about the second week in July), (6) similar to (4) but ploughed in November instead of being "struck up." All plots except (1) are ploughed to a depth of 6 inches in spring and plots (1) to (5) are "struck up" in late August.

The varieties involved were: Canterbury Goldings, Cobbs and Early Bird.

There were no significant differences in yields due to the different times of discontinuing deep cultivation. Higher yields (50 lbs. per acre) were obtained in some seasons on treatment (6) than from treatment (4), except in 1946. Plot (1) in many seasons, except 1946, gave slightly lower yields (less than 50 lbs. per acre.)
EARLY VINE CUTTING

Section VI of the above REPORT dealt with "Effect of Cutting Bines at Picking Time". The plot was laid out in 1946 and will run for three years. The three above-mentioned varieties were involved. Treatments consisted of: (1) vines cut at 4 feet from ground level, (2) vines cut at 1 1/2 feet from ground level, (3) vines left to ripen off in the normal manner adopted in hand picking.

Data for 1946 and 1947 show the uncut vines appreciably lower in N, P, and K than those cut at picking time. This indicates that a portion of these substances pass from the vines to the rootstocks during ripening. An opposite trend is shown in the case of calcium, while the treatments appear to have no effect on the magnesium content of the vines.

HOP STORAGE

Section IX of the above REPORT presented data on "Processing of Hops", (a) Deterioration of Hops During Storage. Samples were stored at room temperature (36°F. to 82°F.) for one year, October to October, 1947. Chemical analyses were made at three monthly intervals. The rate of change of alpha resin seems to be a varietal character. In Canterbury Golding, Early Bird, Fuggles, John Ford Hop and Northern Brewer the alpha resin content decreased during the twelve months but all still contained an appreciable amount. In Brewer's Gold the samples showed complete absence of alpha resin at the end of twelve months. The rate of deterioration varied slightly in the same varieties from different localities.

UP AND OVER

W. G. Keyworth and Margaret M. Hitchcock authored an article in the ANNUAL REPORT OF THE EAST MALLING RESEARCH STATION for 1947 (1948), "Aerial Surveys of the Incidence of Nettlehead Disease of the Hop on Former Hedgerow and Pasture Sites."

"The results of aerial surveys and subsequent ground mapping of outbreaks of Nettlehead disease of the hop are described.

"A preponderance of plants showing symptoms was found on the sites of old hedgerows in certain fields. In another field there were many more affected plants on a part that had formerly been old pasture than on the formerly arable section. No evidence was obtained on the basic causes of the effects observed."

The three aerial photos were "hones" and suggest possible applications in connection with other disease surveys.

SPENT HOPS

THE WEST COAST BREWER for August, 1949 reviewed an article by R. L. Hall which appeared in PROC. 3rd IND. WASTE CONF., PURDUE UNIV. ENG. BULL., EXTENSION SER. No. 64, 138-52 (1947), under the heading, "Do Spent Hops and Spent Grain Press Liquor Have Value?"

"Spent hops contain 21.8 percent protein and have stock-food value. Extension of hop flavor constituents with ethyl alcohol and ethyl ether produced a non-bitter residue for stock food, decreased amounts of spent hops, and increased protein content."
THE ART OF BREWING

I am an ardent patron of the arts! A coterie of my acquaintances, over the years, have imbibed quite a bit of beer. A common comment is that the brewmasters who built some of the brews with which they have had a burping acquaintance may have been artists but their artistry was awful!

The braumeisters were not to blame! No chef can cook up to his capacity without the correct condiments; nor can a Master Brewer brew at his best with indifferent ingredients.

Hops loom large in the lexicon of the brewing industry.

Last year, in the manufacture of 90,458,000 barrels of fermented malt beverages 39,458,448 pounds of hops were consumed. That's an all-time low national average of .436 of a pound per 31-gallons. Gosh!

The useful constituents of hops cannot be satisfactorily synthesized artificially. They are too complex chemically. They can, however, be accurately analyzed.

No foreign hop contains anything which, dollar for dollar, cannot be had from domestic sources.

There are plenty of prominent brewers, whose order books are bulging, who long ago have forgotten the fictitious furore of the few who insist that there is something superior about foreign hops. Why some segments of the brewing industry continue to pay a premium for them, to the definite detriment of the American hop industry, is a mystery to me.

The bombastic boys who boast of foolproof formulae that make their beers "best sellers" are, methinks, talking with tongue in cheek! It's the money in the hands of the management that turns the trick!

Adequate physical plant, experienced personnel, a superior sales organization, national advertising, coupled of course with the use of high-grade ingredients and a uniform product, are the real reasons. Brand preference is mostly a matter of merchandising!

A DICTUM FOR DECEMBER

"Charity begins at home."
QUALITY OF THE 1949 HOP CROP

Under date of October 27, 1949 B. W. Whitlock, In Charge, Pacific Coast Headquarters, U.S.D.A., P.M.A., Grain Branch, 345 U. S. Court House, Portland, submitted a report, under the above heading, which is well worth having on hand. His letter of transmittal is quoted herewith in full:

"The Federal-State hop inspection offices had performed inspections on 221,514 bales of the 1949 hop crop as of October 25. This practically completes the leaf and stem and seed inspections on this year's crop. Summaries made on the quality of the crop at this time will be changed very little by the results obtained on the scattered remnants remaining to be inspected.

"The results of the year's work on leaf and stem and seed are shown on the attached reports.

"It will be noted that leaf and stem content averaged 3.9% for 1949 compared with 5.7%, 6.4%, and 6.0% the three preceding years. Slightly over 1% carried more than 8% of leaf and stem.

"It will be noted too that the seed content of the 1949 crop was considerably less than in 1948 when, due to various factors, the seed content was higher than normal.

"All in all, the 1949 hop crop was by far the cleanest picked and lowest seed content of any crop in recent years."

AN IDEA FOR OREGON

Dupont's AGRICULTURAL NEWS LETTER, issue of September-October, 1949 carried the following item of interest, "AIRPLANE DUSTERS TAKE COLLEGE COURSE."

"A course for airplane crop dusters and sprayers, attended by 28 pilots and operators, was conducted at the College of Agriculture, Rutgers University, at New Brunswick, N. J., this spring. Dean William H. Martin, a World War I fighter pilot, said its success demonstrated that crop dusting and spraying by airplanes is not a "fly-by-night" business.

"Paying their own way, the pilots studied a variety of subjects. They studied the nature and control of plant diseases, life cycle and habits of insects, the proper insecticides to use, how to pick the best weather for dusting and spraying.

"Dr. Bailey B. Pepper, head of the entomology department, said that the students were already aware of the need for caution in regard to possible fruit and crop damage from drift. He said the teachers were plied with "questions that ranged from how potato blight originates to the life cycles of leaf hoppers and aphids." Former Army and Navy officers were included in the student body."

We could "cook up" quite a course at Corvallis if there was sufficient interest on the part of the AERIAL APPLICATORS listed on page 3 of the June 3, 1949 issue of THE HOP PRESS.
THE WEST COAST BREWER for September, 1949 carried an account entitled, "Hop Outlook Good - New "Wrinkle" In Marketing." This was a radio broadcast on August 31 by Henry Schacht, director of agriculture of KNBC, on his regular morning broadcast of The Farmer's Digest, sponsored by Standard Oil Company of California.

The new wrinkle referred to FRESHOPS, green, but mature and undried, quick-frozen hops. These hops are shipped as burlap-wrapped bales, 5 feet long, 2 feet wide and 10 inches thick. They are delivered by airplane.

BREWER AND DISPENSER for October, 1949, carried the following description of a recent installation: "New Type Furnace Promises Faster Hop Drying Method."

"Reversal of the air flow and installation of a flueless furnace promise a more economical and efficient hop drying kiln for Homer Goulet, Jr., of Hopmere, near Salem, Ore. The new kiln can dry more hops in the same area than four old-type kilns.

"The kiln itself is a 32 by 32 foot pumice block building with an aluminum roof. It is much lower than older kilns because the furnace and a huge fan are located at its side. Hot air is blown into the lower part of the kiln and then passes through grates past the hops above, and out vents in the roof. Formerly kilns were built so as to pass the hot air through the hops from the top.

"The building is sealed from the ground to a point about 50 inches above the grate floor to prevent leakage of air. The hops are usually piled from 30 to 42 inches deep.

"Temperature is thermostatically controlled and kept at about 135 to 140 degrees Fahrenheit. An oil-fired furnace in a concrete block building is designed along the line of a huge barrel. The burner at one end shoots a 35,000 degree flame into a brick lined firebox weighing 2 1/2 tons, heating air drawn from outdoors. The air is drawn over a series of baffles by a blower capable of delivering 50,000 cubic feet of heated air per minute, and blown into the kiln. The furnace has no flues since complete combustion is accomplished.

"During this year's harvest, Mr. Goulet was running 30,000 pounds of hops through the kiln each day in two runs of six and a half to eight hours each."

COSTLY CONFLAGRATION

The same issue of the BREWER AND DISPENSER carried the following account: "$100,000 Selah Hop Yard Fire."

"Flames of unknown origin recently destroyed a large frame building housing three hop kilns and 120 bales of hops at the Edward Schott hop yard at Selah, Wash. Other buildings, including the workers' housing, were menaced by the blaze.

"Mr. Schott estimated his loss at about $100,000. The stored hops, he stated, constitute about one-eighth of his crop. At its height, the fire looked as though it would take the entire hop yard."
NOTES FROM ABROAD

An interesting article under the above heading appeared in the August 17, 1949 issue of THE BREWERS' JOURNAL AND HOP AND MALT TRADES REVIEW. Abstracts are presented herewith:

Australia: A cut in imports of hops from dollar areas may be ordered. Supplies from sterling areas have been procurable, but so far the cost has been prohibitive.

France: Not since 1929 has Alsace had such an excellent hop year as in 1949. Official figures indicate French hop plantations covered about 2,700 acres and produced about 1,400,000 pounds of hops.

South Africa: Production of hops in the Union of South Africa in the crop year ended March 31, 1949, was 126 short tons, as compared with 146 tons in the preceding year. The output is sufficient to meet the demands of the hop-growing monopoly comprising the two largest breweries in the country. Other breweries in the Union have been obliged to import their entire hop requirements which, however, are small. In view of the monopolistic features of the hop industry, prices estimates are not available. The monopoly does, however, estimate that, if the market were free, the price would be approximately 350 pounds per short ton. Hop acreage recently has been increased and the main problem of Union hop growers is to increase production further by giving closer attention to details of efficiency and management. Imports may be expected to continue at a low level and to come largely from Belgium, and to a lesser degree, from the U.S.A.

ENGLISH ACREAGE

From the above source it is reported that the Hops Marketing Board's figures, as of June 4 each year, indicated the following acreages:

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>1949</th>
<th>1948</th>
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<tbody>
<tr>
<td>Kent: East</td>
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<tr>
<td>Kent: Mid</td>
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<td>Kent: Weald</td>
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<tr>
<td>Sussex</td>
<td>2,167</td>
<td>2,208</td>
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<tr>
<td>Hereford</td>
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<td>4,737</td>
</tr>
<tr>
<td>Worcester</td>
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<td>2,200</td>
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<tr>
<td>Other Counties</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>22,196</td>
<td>22,787</td>
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</tbody>
</table>

WILT RESISTANT HOPS

The JOURNAL OF THE INSTITUTE OF BREWING for July-August, 1949 carried an interesting and well-illustrated article by E. S. Salmon entitled, "Two New Hops Resistant To Verticillium Wilt." "The characters of the new hops are described in detail. They are symptomless carriers of mosaic disease, but are more susceptible to downy mildew than is Fuggle. They have a P.V. higher than in ordinary commercial varieties, and brewing trials carried out in 1945 and 1948 showed that, in 11 out of 13 breweries, they were probably acceptable as brewing materials when used in 10-30 percent blend with other hops. Rooted sets are available."

The new hops are Keyworth's Early (OJ47) and Keyworth's Midseason (OR55).
Another item from the October, 1949 issue of BREWER AND DISPENSER discusses in more detail the item headed, "Processing Research Proposed" which appeared on page 2 of THE HOP PRESS of October 5, 1949: "Drying and Processing Study of Hops Proposed by Parker."

"Proposed research on the drying and processing hops is being set forth by the division of industrial research of the Washington State Institute of Technology, Eri B. Parker, director of industrial services, revealed at Pullman, Wash. "It is hoped that these ideas will help to develop a cooperative research program with the hop industry of the state,' stated Mr. Parker.

"These practices are slated to include drying, cold storage of green hops, vacuum packing of chopped hops and effects of maturity of hops on strength, flavor and aroma characteristics. To guide in the development of a program of research assistance, the Washington State College proposed the following preliminary action this harvest season: That arrangements be made to take data on three types of driers and to observe operation of other phases of hop harvest; that samples of green hops be procured for use in laboratory tests in Pullman; that a drying trial be made on hops and the results studied; and after this study is made, that a proposal for a cooperative research program be prepared for presentation to interested groups for their consideration."

EXPERIMENTAL DRYING

Under date of October 25, the SPOKANE CHRONICLE carried an illustrated item quoted herewith, in full: "Cheaper Hop-Drying Method Sought."

"A cheaper, safer method of drying hops is being sought in a research project just set up by the division of industrial research, Dr. R. L. Albrook, division director, has announced. Foreign competition to Washington hop growers has been aggravated by the recent revaluation of the pound in sterling countries, he said.

"Dr. Henry A. Sorensen of the department of mechanical engineering is directing the project, aided by Wesley Murbach, chemist in the division of industrial research. Their objective is to develop a continuous, single-process hop-drying machine which will receive the green hops at one end and turn out the baled product at the other end.

"Present hop-drying methods cost growers thousands of dollars each year in fires which start during the three to five day process, Dr. Sorensen said. Under the present methods, green hops are piled on a drying floor and subjected to a hot air blast for nine to 10 hours. They are then forked into a bin and allowed to remain several days while moisture equalizes between green and dry hops. Hops are used by the brewing industry to impart flavor to malt liquor. They are an important crop in the Yakima valley. However, the drying process now in use is an expensive one and some brew masters prefer the sun dried European hops.

"Fundamental data for the project will be gathered through use of an electric-drying cabinet which maintains closely controlled conditions of temperature and humidity and uniformity of air circulation. Later, other drying devices will be built for experimental use."
STORAGE OF HOPS

THE REFRIGERATION RESEARCH FOUNDATION's "Information Bulletin" No. 49-9 issued September 20, devoted page 4 to this timely topic. We quote herewith, in full, "Summary 1. Research on hop storage has shown that storage at temperatures of 38° to 40°F. (and lower) with about 50% relative humidity protects the soft resins (alpha and beta, the desirable resins) against deterioration and formation of the undesirable hard (gamma) resins.

"2. Normal-compressed and double-compressed hops (11 and 22 lbs. per cubic foot, respectively) retain their quality remarkably well in cold storage (39°-40°F.) for long periods. Throughout storage there is, of course, a gradual decline over a period of several years. This decline occurs sooner and is much more rapid under non-refrigerated storage conditions. Hops subjected to triple and quadruple compression (33 and 44 lbs. per cubic foot) would require much lower temperatures for storage, and they lose quality more rapidly at 70° to 90°F. than normally-compressed and double-compressed hops.

"The authority for the summarizing statements above is Frank Rabak, formerly a Bureau of Plant Industry scientist and now consultant for S. S. Steiner, Inc., New York. His research is published in Brewers Digest (Sept., 1943) and Circular 3 of the Brewers' Hop Research Institute. The research covered domestic seeded and seedless hops from 3 Western states and hops imported from Czechoslovakia and Yugoslavia. Samples were held and analyzed over a period of 5½ years. All of these samples showed very similar behavior in storage.

"A letter to TRRF from G. R. Hoerner, Hop Specialist, Extension Service, Oregon State College, states that matters to watch for in hop storage quality are (1) molds, which may develop in cooler storage under conditions of high humidity if the hops are not sufficiently dried prior to baling and (2) development of unpleasant aroma and off-color. The "dry-down" ratio for hops is about 4 to 1, but seedless hops, which are being used increasingly, tend to lose greater weight in drying.

"Recently U.S. Patent No. 2,473,395 was issued to George Segal, Great Neck, N.Y., entitled "Hop Treatment". It covers a method of treatment consisting of freezing fresh or carefully cooled hops at a rate of 1°F. per hour, holding in frozen state, thawing and thereafter drying the hops prior to use. The fact that the hops are frozen prior to drying would seem to make the process uneconomical. Whether better quality is possible is unrevealed.

"It has come to our attention that experimental work is in progress on compression of previously frozen fresh hops and their storage thereafter at freezer temperatures (0°F.). The compression ratio is not clearly known to us, but seems presently to be at about the double compressed level on the fresh weight basis. Further information will be reported as it becomes available."

HOPS IN OREGON

In preparing the tabular material on page 7 the following factors were used:

Average yields in dry hops per acre: 1947 - 530 pounds; 1948 - 913 pounds.
Average price per pound to growers: 1947 - 67 cents; 1948 - 49 cents.
|----------|------|------|------|------|------|------|------|------|------|------|------|------|

**Crop Value**

|----------|------|------|------|------|------|------|------|------|------|------|------|------|

**Crop Value**

- 1947: $123,215,000
- 1948: $200,213,000
- 1949: $312,213,000
- 1950: $333,213,000
- 1951: $341,213,000
- 1952: $351,213,000
- 1953: $361,213,000
- 1954: $371,213,000
- 1955: $381,213,000
- 1956: $391,213,000
- 1957: $401,213,000
- 1958: $411,213,000
- 1959: $421,213,000

**Crop Value**

- 1947: $1,000,000
- 1948: $900,000
- 1949: $800,000
- 1950: $700,000
- 1951: $600,000
- 1952: $500,000
- 1953: $400,000
- 1954: $300,000
- 1955: $200,000
- 1956: $100,000
- 1957: $0
- 1958: $0
- 1959: $0
OREGON HOP ACREAGE - 1949

YAMHILL
JACKSON
UMATILLA
WASHINGTON
MALHEUR
January 7, 1950

OVERDUE OVATION

There is a paucity of plaudits for civil service to agriculture. We are all too prone, perhaps, to take gratuities for granted and sans sufficient show of gratitude. The hop industry, among others, has been remiss in this matter.

I propose herewith to belatedly salute a service that has made a significant and creditable contribution to the economy of hop production.

The well-done work of Bert Whitlock and his able associates of the Grain Branch, in adeptly discharging a diversity of supervisory duties in connection with the Federal-State Hop Inspection Service deserves more detailed discussion than is possible on a single page.

Before members of the Farm Crops Department at the College, aided by Chemistry Department personnel, pointed the way there was misgiving among many. Industry "big shots" were willing to bet their bottom bale that any attempt to grade hops would get nowhere and that even inspection procedure would prove impracticable.

How wrong they were and how well the inspection of three physical factors of grades—leaf, seed and stem content—has worked is a matter of written record. It's worth reading.

In the six years the inspection work has been under way a total of over 1,500,000 bales of hops have been inspected in the states of California, Idaho, Oregon and Washington. This represents nearly 99 per cent of the crops harvested each year. The total cost of this service per pound of dry hops was less than two-tenths of a cent.

The efficient efforts of inspection personnel of the Departments of Agriculture in the cooperating states of course merit language as laudatory as that deserved by the Federal folks.

They are all elements of a well-trained, well-supervised and tireless team fulfilling an essential Federal-State function in first-rate fashion.

Civil servants all, they are of paramount importance in performing signal service to the producers, handlers and users of hops.

NEW YEAR'S NOTICE

"A teacher affects eternity; he can never tell where his influence stops."
HOP CONFERENCE

The Hop Conference which convened at Corvallis October 18 was attended by County Extension Agents Hansen, Mikesell, W. E. Parker and Riches, representing Polk, Linn, Lane and Marion counties respectively and 72.2% of the hop acreage of the state. The following topics were discussed: Acreage trend; supply, demand and prices; cost of production; replacement crop possibilities; agronomic practices; disease control; insect pest control and demonstration plot procedure. Participating in the discussions were: F. H. Dahl, C. H. Hoerner, K. R. Keller, G. W. Kuhlman, H. E. Morrison, J. W. Scheel and M. D. Thomas.

GET GOLD MEDAL

THE WEST COAST BREWER for November 1949 ran the interesting illustrated item which follows, "Rainier Hops Win Gold Medal at Fair."

"The Gold Medal Award for the best hops grown in 1949 in California was awarded to the Rainier Brewing Company of San Francisco and Los Angeles at the recent California State Fair in Sacramento.

"The prize winning Rainier hops were grown in Yolo County on the extensive ranch operated there by Rainier. As they have for many years, the 1949 hop harvest will be used in the brewing of Rainier beer, ale and stout.

"Albert P. Browne, newly elected president of Rainier, said at the time he accepted the gold cup, "We are proud that this award identifies us as one of the leaders of the progressive farming program of the State of California."

HOP FESTIVAL FEATURED

The September 21, 1949 issue of THE BREWERS' JOURNAL AND HOP AND MALT TRADES' REVIEW carried an interesting account of "Whitebread's Hop Festival."

This annual three-day affair is sponsored by the brewer-owners of a 1,100-acre hop yard in Kent, England.

NOTES FROM ABROAD

From the same source the following information was gleaned:

Australia: Western Australia, during 1948, imported 235,193 pounds of hops.

Belgium: VITA, the Bulletin of the Confederation of Belgian Food Industries, published the following hop figures for 1948:

<table>
<thead>
<tr>
<th>Region</th>
<th>Pounds Produced</th>
<th>Pounds Consumed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>134,502,606</td>
<td>115,116,258</td>
</tr>
<tr>
<td>America</td>
<td>109,502,482</td>
<td>104,674,408</td>
</tr>
<tr>
<td>Australia</td>
<td>2,138,462</td>
<td>5,798,098</td>
</tr>
<tr>
<td>Asia</td>
<td>2,138,462</td>
<td>13,227,600</td>
</tr>
<tr>
<td>Africa</td>
<td>639,334</td>
<td>2,645,520</td>
</tr>
</tbody>
</table>

During the first half of 1949 Belgium imported 1,295,202 pounds from the Bizone. The 1949 Belgian crop was estimated at from 1,763,680 to 1,981,140 pounds.

Uruguay: Production of hops in Uruguay is carried on for experimental purposes and is of no commercial importance. Imports in 1948 totalled 77 metric tons, all from U.S.A. The breweries estimate annual consumption as about 70 m.t. a year.
BREWERS JOURNAL, issue of September, 1949 furnished some significant facts in an item, "U. S. First In Hop Production, Preparing For Annual Harvest", which is quoted, herewith, in part:

"The United States leads the world in hop production. In 1943 this was more than enough to satisfy the needs of American brewers and was approximately 19,000,000 pounds more than was produced by second-place United Kingdom. Germany and Czechoslovakia were third and fourth, respectively.

"More than 11,000,000 pounds were exported, while about 5,500,000 pounds were imported. Canada is the United States' biggest hops customer. United States growers furnished about 97 percent of all hops imported by the Northern neighbor during 1948. Colombia was the second biggest customer. Mexico and Brazil were almost tied for third and fourth.

"Germany and Czechoslovakia, combined, supplied about 90 percent of the hops imported last year into the United States.

"American brewers formerly imported greater quantities of European hops to achieve certain blends in their beer and ale. However, improved methods of cultivation and cleaner picking of domestic hops in recent years have resulted in reduced demand for the foreign variety and a corresponding increase in the use of American hops."

IT'S ABOUT TIME

"Fermentation and Brewing Courses Offered By University and a School of Technology" is the title of an item of interest in the September, 1949 issue of the BREWERS JOURNAL.

"Recognition of the scientific aspects and developments of the brewing industry in their application to the entire field of fermentation is seen in the fact that two of the country's universities, the Illinois Institute of Technology and the University of Wisconsin, are now offering courses in this field.

"At the University of Wisconsin the course in brewing covers a five year period and leads to a bachelor of science degree in biochemical engineering at the end of the fourth year and a masters degree at the end of the fifth year.

"The Illinois Institute of Technology offers a four year course leading to a bachelor of science degree."

FUN ON THE FARM

Veteran on-farm trainees, to the tune of 25, were enrolled in a class concerned with hop production problems under the leadership of your Extension Hop Specialist.

Meetings were held at the Gervais High School on 5 evenings during the month of November. Two field trips were indulged in addition: A tour of the Sicks' Brewing Company plant at Salem and tours of the Great Western Malting Company and Interstate Brewing Company plants at Vancouver, Washington.

The courtesies extended by the managements and representatives of all of these organizations were most helpful and highly appreciated. Formal thanks herewith to Vice-President and Manager Shepard, Master Brewer Tabacchi and Assistant Lugenebeel of Sicks' Brewing Company; Messrs. William Einzig and Orme Kellett of the Great Western Malting Company and General Manager G.V. Uhr, Brewmaster Joseph Huber and his assistant, Walter Syata of the Interstate Brewing Company.
QUICK-FREEZE FACTS

The following item appeared in the November, 1949 issue of BREWER AND DISPENSER: "Quick-Freezing May Replace Drying For Processing Hops."

"There is evidence that a new technique in processing will change hop marketing procedure. Laboratory technicians have been working on the problem of developing and preserving the best qualities in the domestic hops. They may now have the answer in quick freezing.

"Quick freezing of the mature hops instead of drying them appears to preserve the qualities that brewers have long been looking for.

"After the quick freezing has been accomplished the hops are placed in cold storage until wanted for use. Under such conditions they can be preserved in prime condition until the following season.

"The technique has been tried out in the Yakima valley of Washington with hops from the Seedless Hop ranches which were quick frozen at Grandview, Wash., and then placed in cold storage at Yakima. In the trial run some 25,000 pounds were processed.

"Pre-cooling facilities will be needed. The freezing is done after compressing.

"Considerable experimenting and checking for best results may yet be needed, but technicians predict the new methods will reduce the demand for foreign hops. Brewers would be able to buy all the hops of the kind they want at home.

"Because of the mildness of the hops processed under the new techniques the brewer can again use more hops per unit without accentuating harshness, as in the case of many of the domestic hops presently kiln dried.

"Hops processed by the new method would weigh more than the bales now dried in kilns, and a new freight rate scale might be necessary in the shipping of frozen hops."

WORD FROM WALL STREET

The BREWERS JOURNAL for October, 1949 carried an account of interest, quoted herewith in full: "Wall Street Journal Comments on Hops."

"The Wall Street Journal of New York recently commented on the hop marketing agreement, and said that it was agreed to because of the heavy increase in production costs in the past few years.

"'Hop men's big worry is that while prices have sagged, production costs have shot upward like their high-climbing vines,' the Journal stated.

"'Growers don't agree on just how much it costs to bring their crop to harvest. Most claim it takes 45 to 50 cents per pound and better, which is getting uncomfortably close to the 53-cents-a-pound selling price.

"'One large grower tells of a 300-acre Oregon yard that was uprooted last winter because costs climbed too high and the operator just about went broke. When the harvest was over, the grower found his costs had come to 67 cents a pound."
"The outlay varies, however. It's higher in Oregon, for instance, than in Washington where mechanical picking machines are used and where the irrigated land produces more hops to the acre.

"Growers have managed to trim the wages they pay pickers this year, but other items are up. Ammonium sulphate fertilizer, for instance, is double the $35-a-ton war price. Burlap for covering the bales is up to 43 cents a pound; it was a dime for years before the war.

"Costs like these, teamed with crippled prices, have sent hop growers running to Washington for help. When the government-sanctioned marketing agreement—to sell only 39 million pounds of this year's 50-million-pound crop of hops—came to a vote among growers and handlers, 81½ per cent voted in favor. That made the cutback binding on the whole industry.

"Four years ago, hop men threw off the protection of marketing agreements, after seven years, and decided to get along without federal help. Prices had climbed to 74 cents a pound from the discouraging 18-cent level they had been at when the first agreement went into effect in 1938.

"Government help has its limitations, however. Prices can't go much higher than the present 53 cent level. Under the marketing pact, sales are controlled to bring up to parity, a level that presumably duplicates the purchasing power of farmers in the base period 1909-14. Parity for hops now is about 56½ cents a pound.'

"The marketing agreement already has firmed prices, according to the Journal. Earlier in the summer, seeded hops were going for 47 cents a pound. They're up to 52 and 53 cents now. But that's still considerably below the 73 cents they brought last year, and growers hope to get more before the current harvest is over at the end of this month.

"Fundamentally, we're all opposed to regimentation, but we had to take some steps to get some of the surplus off the market,' explains Dean H. Walker of Independence, Ore., who with his brother, Mike, is harvesting 500 acres of hops. 'We're not allowed to fix prices, but by reducing our sales we can bring supplies in better relation to demand.'

HILL ON HOP RESEARCH

The above publication, pages 13, 21-22, printed the paper presented by Dr. D. D. Hill, Head, Farm Crops Department, Oregon State College at the technical session of the Master Brewers Association of America, Los Angeles convention, October 10, 1949. The title was "The Coordinated Hop Research Program." A pretty picture of Don accompanies his article.

RABAK REPORTS

The above publication, pages 23-24, printed a paper by Frank Rabak read at the technical session of the M.B.A.A. Los Angeles Convention. It was headed, "Hop Research and Quality Improvement."

Rabak is Consultant and Biochemist with S. S. Steiner, Inc., hop dealer-growers.
"The following report from a special correspondent was recently published in THE TIMES:

"Hop-growers in many parts of Hampshire are keenly interested in a machine now being used to pick a crop of hops at Higher Oakshott Farm in the Hawkley district, near the small Hampshire town of Liss. The machine has been developed by the owner of the farm, Mr. M. Dewhurst, during the past three years, and does a remarkably good job.

"It is designed to pick hops for the special requirements of a firm manufacturing hop oil and hop concentrate, both of which are supplied to brewers. For this purpose the hops are not picked individually; instead, the lateral shoots are stripped from the bine so that the hops are harvested with a proportion of leaf and stem. The machine is accordingly much less elaborate than those described in THE TIMES last year, which are now in use in the hop gardens of two brewing firms in Sussex and Kent.

"This new machine has six sections, or feeding points, each of which has exactly the same mechanism. They are set in motion separately by a belt from an overhead shaft, and it follows that the number of feeding points can be increased according to the power used in driving the shaft. The hop bine is taken by a worker at the feeding point, bent double about a foot from its topmost spike, and inserted into the small round aperture of the feeding point. It is then drawn in by the action of two revolving fluted rollers, and passes through to the other side of the machine completely stripped. The lateral stems, with the hops and leaves, fall from the mouth of the aperture on to a conveyor belt which carries them away for loading.

"Considerable Saving. The hop garden at Higher Oakshott would require up to 400 pickers if hop-picking were done by hand. The machine requires only six people—one at each feeding point—and eight other men are engaged for cutting down the bines in the garden. The saving in labour—difficult to get in these parts at any time and containing, during hop-picking, a large gypsy element—is thus very considerable.

"Hops required for the production of hop oil are taken from the machine undried direct to the works at Reigate. What is left of the hop plant after the oil has been distilled from it comes back to the farm for making into compost. The current price of hop oil is 95s. an ounce. The hops used for hop concentrate are dried in the kilns at Higher Oakshott before being sent to Reigate.

"This method of stripping hops from the bine by machine might not automatically find favour with brewers using hops in their natural state. One of the functions of hops in brewing is to act as a filter through which beer passes during its manufacture. At Higher Oakshott it is maintained that the proportion of leaf and stem left with the machine-picked hops would improve this filtering process by loosening up the material of the filter."
NOTES FROM ABROAD

The following items of interest were gleaned from the same publication:

Australia: During 1947-48 the 6 breweries in Queensland used 309,586 pounds of hops.

France: "The persistent drought of last summer which caused so much damage to other crops has not seriously affected the hop plantations. The abundant rains in May and those of August, though much weaker, assured a normal growth.

"As last year, the French brewers will buy their hops from the producers, the Hop-growers' Co-operative of Alsace and the hop dealers. This year's satisfying crop (which is estimated to be slightly superior to the 1948 one), together with the imported hops (Western Germany and Czechoslovakia), will certainly allow the brewers to buy the quantities necessary for their 1949-50 campaign.

"According to the commercial agreement between France and the Trizone, a quantity of hops valued at one million dollars is to be imported by France. How much this will be in quantity depends on the prices which, so far, are only partly known, but it is estimated that it will amount to approximately 1,000 metric tons.

"590 tons of hops are— theoretically—to be delivered by Czechoslovakia, but it is not sure whether this will be done. For the time being, declares the National Hop Export Society of Czechoslovakia, it cannot be undertaken to deliver more than 250 tons, but the French brewers will try to get more. The imported hops will be distributed by the Union of French Brewers to the different breweries, according to their consumption. The Czechoslovak Hop Export Society had first tried to impose on the French breweries a clause stipulating that Czech hops should be bought directly and exclusively from the Czech Export Society. The French refused this because they were not willing to sacrifice the French hop importers and dealers with whom they have done business for many years. The delegate of the Czech Hop Export Society eventually admitted these objections and dropped the excluding clause. As a counterpart, different measures have been agreed upon in order to facilitate and to hasten the import of Czech hops.

"As last year, French hop prices are high. Following the devaluation of October, 1948, they had been increased by 20 per cent. This year, moreover, an import tax of 15 per cent., ad valorem, has been added and now, after the recent devaluation, the prices of hops from Western Germany and Czechoslovakia will rise again. As a matter of fact, the hops from Bavaria are paid for in dollars and the Czechoslovak crown, so far, has not been devalued. Its exchange rate is now one crown equals seven francs, as against 5.40 before the devaluation."

Mexico: Malt and hops are imported mainly from the United States.

Western Germany: "In the Anglo-American zone of Western Germany the hop harvest of the present campaign is estimated to be 5,650 metric tons, which represents a good average year. Last year the hop production, from a planted surface covering 5,500 hectares, amounted to approximately 4,750 tons. The hop prices show an upward trend. "Tettang" and "Spalter" hops are paid 500 Deutschmarks per quintal, which corresponds to 115 dollars, as against 112 dollars and less last year. The Bavarian hop harvest is good and estimated at between 50,000 and 60,000 quintals; 40,000 quintals are to be exported, of which 15,000 quintals goes to the Russian-occupied zone."

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POINTER ON PESTOX III

The same issue of the publication referred to above contained the following information: "Control of Hop Pests."

"Pest Control, Ltd., of Bourn, Cambridge, arranged a tour on September 7th of the Worcestershire and Herefordshire hop yards in which the new systemic insecticide Pestox III has been used.

"The farms visited were:—Mr. L. G. Farr, The Hill, Castle Frome, Herefordshire; Messrs. George Nott and Co., Ltd., Newnham Farms, Newnham Bridge, near Tenbury Wells, Worcs.; Mr. J. Nott, Kyrewood, Tenbury Wells, Worcs.

"Dr. R. H. Greenslade, who has been in charge of experiments in the field, accompanied the party to answer any technical queries.

"As a result of the experimental and contract work carried out with Pestox III during the last two years, hop-growers in Herefordshire and Worcestershire are said to be satisfied with this new systemic insecticide. It is claimed that it gives a complete control of aphids and appears to have a stimulating effect on the bines. Mr. J. K. Winser, of Petersfield, Hants, in a report on the effects of the insecticide on his hops, wrote: "I am perfectly satisfied that in some way there was a beneficial result from the spray, quite apart from the freedom from aphids."

"Pestox III claims to be an insecticide which acts systemically. It is absorbed by the plant and translocated in the sap, so that the whole plant becomes toxic to sucking insects. It has been known to act systemically by absorption through the roots or through a cut stem, but its most valuable character is that it can also be absorbed by the leaves, and can therefore be applied as a spray. It has a very weak direct contact effect against aphids, but against other insects this effect is negligible. There is no contact action by residual film, and no fumigation effect either of the chemical itself or of sprayed plants. The systemic action is most marked against aphids, but other sucking insects and spider mites can also be controlled.

"The amount of Pestox III required to kill an insect varies from species to species, even when feeding on the same plant. In general, larger species require a higher dosage. The speed of action is proportional to concentration or amount of Pestox applied to the plant. The dosage required seems to be influenced more by the physiology of the plant than by the species of insect. Insects feeding on sugar beet and brassicas appear to need about five times the dosage of those on hops and strawberries. This may be connected with the selective waxiness of the leaves.

"Low-volume spraying is possible in some cases, though exact amounts of liquid per acre are not yet worked out. On hops 1 lb. applied in 200 gallons per acre was effective. The same quantity in 60 gallons was also effective. On beet and brassicas best results have been obtained at 100 gallons per acre."

COAST COMPARISONS

From official sources comes the information that the 1949 hop crop was of better quality than usual. A recent summary of inspections during the season, released by the Pacific Coast Headquarters, indicated an unusually low leaf and stem content. In comparison with last year, Oregon production of 14.7 million pounds is down 7 percent; the Washington crop of 19.4 million is down 15 percent, while California's crop of 15.3 million is up 35 percent.
BULLY FOR THE BREWERS

I entertain the deepest respect for the opinions of a more or less militant minority who prefer milk shakes to mulled ale. Quantities consumed considered, however, beer ranks third to coffee and tea as the popular potables in these United States. A further fact for the fastidious is that the better breweries, sanitarily speaking, are among the finest factories of foodstuffs extant. So there!

Brewing is big business. A national expenditure of 130 million dollars is contemplated in 1950 for new plant and equipment alone! And talk about taxes! Since repeal of prohibition in 1933, U. S. breweries have contributed an estimated 8 billion dollars to federal, state and local governments. Golly! Breweries are listed among the ten highest tax-paying industries.

The benisons I hereby bestow upon the brewers, however, stem from their interest in and material support of scientific research.

Any galaxy of the great would include scientists such as Black, Kjeldahl, Pasteur, Sorensen and von Guericke, all of whom were brewing technologists! Numerous other names might be mentioned but the list is too long.

Many a modern brewery maintains a well-equipped laboratory staffed with trained personnel who would be a credit to a college.

There are two national associations of brewers: The United States Brewers Association and the Small Brewers Association. Over the years the membership of these two national associations of brewers have set aside sizeable sums to support research on colloidal chemistry, hops, malt and yeast. The five-year course in brewing recently established at the University of Wisconsin was due, in part, to their patronage.

The Brewers Hop Research Institute was their baby! The Agricultural Research Foundation of the Oregon Agricultural Experiment Station has benefited by the Institute's interest in our hop research program and by their generous monetary support. The more recently organized U. S. Brewers Foundation, Inc. has already made its benign influence felt.

The solvency of the American brewer and a satisfactory financial status for the American hop grower are inseparable!

FOOTNOTE FOR FEBRUARY

"Shame on him who evil thinks."
PESTOX PARTICULARS

Dr. W. E. Ripper, British authority, in a recent mimeographed publication stated:

"Control of Hop Aphis: It has been found and verified on 1,500 acres of hops in Worcestershire, Herfordshire and Hampshire that spraying of 3/16 pounds of Pestox 3H (66% anhydride) in 100 gallons of water per acre, applied to the hops at the end of May or beginning of June before the aphides appear, and then again at the end of June or early July at the same concentration but at a higher rate of application, namely 150 to 200 gallons per acre, will keep a hop garden free from aphides and red spider and increase the yield by 2 - 1/4 cwt. per acre over nicotine dusted control plants. The application of Pestox 3H was carried out with a high pressure tractor-drawn spraying machine using 350 pounds pressure and applying the spray chemical through whirldisc nozzle spray guns arranged on an automatic sprayer.

"The spraying machine used commercially was a Pest Control 'Hatley' sprayer equipped with standard potato spraying nozzles and pest guns. In these operations the tractor driver was protected by a cab from the spray and spray drift. Operatives were equipped with rubber gloves when handling the concentrate and wore white overalls which were frequently washed; all work was carefully supervised. It is, therefore, recommended that two applications of Pestox 3H (66% anhydride) at the rate of 3/16 pound per 100 gallons to be carried out when the first aphides appear and the second 3 weeks later, but no spraying be carried out later than 6 weeks before picking."

SIGNIFICANT STATISTICS

"Oregon's Specialty Field and Drug Crops" is the title of Oregon Extension Bulletin 596 covering the period 1915 through 1948.

Hops still show the highest economic value among the specialty crops, accounting for more than one-half the income. Production problems and lower prices, however, have reduced the Willamette Valley hop acreage, where 90 percent of the Oregon crop is raised.

TEEPEE TOPPLERS

The APPEAL TRIBUNE of Silverton, Oregon in the issue of December 2, 1949 carried the following account:

"A preview of what may come to the thousands of hop pickers in the Oregon country is contained in a resume of conditions which prevailed in the Yakima valley this past season.

"The mechanical hop picking machines took over practically all of this irrigated valley where 40 per cent of the nation's hops are grown. Thousands of Indians used to pitch their teepees in the hopfields each season in the pre-machine age to do this work.

"It is estimated by hop authorities that 50,000 workers may be displaced by 250 or more portable harvesters which are rated as doing a clean job."

In Oregon the number of Indians who assist in the hop harvest are not nearly so numerous as in Washington. In the Willamette Valley other crops such as string beans may benefit by a release of some of the farm laborers who formerly were absorbed by the hop harvest."
A CASE FOR CAUTION

In a CLIP SHEET issued by the U. S. Department of Agriculture for release January 8, 1950 we glean the following statement: "Phosphorus Insecticides Dangerous."

"Some kinds of insect pests in greenhouses found new perils in their lives last year, and this year is likely to prove even more fatal.

"U. S. Department of Agriculture entomologists report tests of several new phosphorus compounds that are deadly to mites, aphids, and other pests that have been hard to control with more familiar insecticides.

"The effect of one of the new ones, appears to make a plant deadly to the insect that plagues the plant. The chemical can be applied to or mixed with the soil. It then seems to be taken up by the plant, and aphids and two-spotted spider mites feeding on the plant are killed.

"In these studies the investigators are men familiar with the perils of the work, and they make use of gas masks, respirators, and specially treated protective clothing to reduce the dangers that are unavoidable in making the studies. Obviously, they say, such chemicals are not safe for general use by inexperienced persons, any more than hydrocyanic gas as used for fumigation by licensed specialists only.

"The experimenters know they will need several seasons of practical experience to gain knowledge of the powers and perils involved in the use of these new compounds. Principal subjects of concern are the perils to users in the application of the insecticides, and—even more important—the dangers to the public. Some of the new phosphorus compounds may prove highly desirable for flower crops, but may be unsafe to use on such food crops as greenhouse-grown tomatoes and cucumbers.

"On the other hand, continued experience and study of these new phosphorus compounds may make it possible to develop still other new chemicals that are less hazardous."

MORE VINES MORE HOPS

AGRONOMY JOURNAL for December, 1949 carried an article of interest, "The Relationship Between the Number of Vines per Hill and Yield in Hops (Humulus lupulus L.)" by Kenneth R. Keller and Jerome C. R. Li.

Seedless Fuggles harvested on an individual hill basis gave maximum yield when the number of vines per hill was six; trained two vines to each of three strings.

A limited number of reprints are available upon request.

LIQUID FERTILIZERS

POTASH NEWS LETTER FOR WESTERN TERRITORY published January 1950 by American Potash Institute, Inc. in discussing liquid fertilizers stated, "It would seem that the possibilities in applying fertilizers through irrigation systems from both standpoints of convenience and effectiveness will continue to be recognized by growers wherever water is applied to crops."
Under date of September 22, 1969 the following information was reported by the American Consulate General, Munich, Germany:

"During the late 1920's when a peronospora blight practically wiped out the German hops crop, German breweries got together and formed the German Society for Hops Research. The Society purchased the large hops estate of Huell near Wohnzach, Bavaria, and has been engaging in research in cooperation with the Bavarian State Institute for Plant Protection for about 20 years. Research has consisted of an effort to obtain strains which are highly resistant to peronospora; to determine the best type and quantity of fertilizer; to ascertain the times during the year at which fertilizer should be applied; to obtain the proper concentration of fungicides and insecticides; and to determine the effect of cutting the vine at the time of harvest upon the quantity, quality and life expectancy of the hops vines.

"In developing better and hardier strains of hops which are able to withstand peronospora and in attempting to eliminate the need for spraying, the main obstacle was the procurement of male plants for crossing purposes. The estate presently has large gardens of female plants from all over the world and has finally succeeded in establishing a male hop garden of several assorted strains which is located at considerable distance from the female vines in the middle of a wood in order to preclude the possibility of natural pollination. Some 10 to 15 thousand seeds are planted yearly in greenhouses following artificial pollination. The most inbred strains die for lack of chlorophyll. Those which remain are artificially infected with peronospora which eliminates 90% of the remainder. The harder 10% are then planted out in the open and later on are replanted into the main test garden if they prove to be female plants and survive the first year without spraying. After the second year slips are made from the better plants and small colonies are formed. If these live up to expectations they are again used for slipping until a complete garden can be planted to the new strain. After this new strain has been time tested, groups of the vines are planted all over the country in different soils, climates, altitudes and types of terrain. Several years remain before new strains will be released for general cultivation.

"Tests carried out with mixed fertilizers in various proportions seem to indicate that top dressing considerably improves yield and quality if it is applied in the last third of the vegetation period. However, with fertilizers freely available this year for the first time since the war, several local growers have used too much top dressing, counting on rainfall which failed to materialize, and the result was the "burning" of a number of hops gardens.

"Commercial fungicides and insecticides are tested extensively on the Huell estate. These are not used on the new strains which, like the main test garden containing standard, local and foreign strains, are never sprayed. In this connection, it has been found that, except for the advanced new strains, the standard types showed heavy damage from peronospora. The latest hops sprays are a number of hexa-compounds marketed by Bayer, Leverkusen and other producers, which are contact poisons against plant lice and red spiders and also act as fungicides. However, most growers use them in combination with the Bordeaux mixtures to be doubly safe. DDT preparations made by various local companies, under licenses from the Swiss Geigy Company, are also used to a certain extent."
"Research is also being carried on in Huell on the influence of vine cutting at the time of harvest on the quality and yield of hops gardens. These tests are being conducted for the purpose of ascertaining the advantages and disadvantages of machine picking, which necessitates the removal of the vines at the harvest. Customarily the hops vines in Germany are left on the ground, the vines uncut but curled up until late October or early November so that the plant has an opportunity to withdraw whatever sustenance it needs for hibernation. In the past three years, tests seem to indicate that under the old method a hops garden will yield top quantities and qualities for an average of 25 years, while so far the indications are that cutting the vines at the time of picking substantially reduces output and to a lesser extent the quality, and possibly even the total life expectancy, of hops gardens.

"The results already obtained at Huell, such as the development of a strain which requires spraying only twice in the growing season as compared with an average of 8 times for gardens under general cultivation during the past year, augers well for the future development of a particularly high grade of Bavarian hops."

WORD FROM AROUND THE WORLD

FOREIGN AGRICULTURE CIRCULAR, issued by the Office of Foreign Agricultural Relations, U.S.D.A., Washington, D. C., under date of November 21, 1949 was entitled "World's 1949 Hops Crop Continues Under Prewar Levels." There are 38 pages of fascinating facts on hop production which defies adequate quotation. The following abstracts, however, should be of interest:

Australia: The Hop Growers Association was petitioning the State Price Commission for an increase in prices.

Belgium: The large breweries are equipped with modern research laboratories, and the smaller ones usually have well-known research technicians as advisors. Research is also carried on in four brewery institutes annexed to the universities, their work being subsidized by the National Fund for Scientific Research. Consideration is being given to centralizing all of this research in a Technical Center of Brewery, Malting and Related Industries, established on March 9, 1949. The aim of the Center is to promote scientific and technical progress in those Belgian industries and to distribute the results of the research throughout the world.

Colombia: Hop production is still on an experimental basis. One experimental area near Armero in the Upper Magdalena Valley will be expanded to 37 acres in 1950. A recent agreement between the government and leading breweries provides that home-grown hops must be used before license will be granted for imports. A special tax of 3.5 cents a pound has been imposed on all hops consumed. The proceeds from the tax are deposited in a special fund which will be used for promoting domestic production of hops.

Czechoslovakia: Exports are controlled by the Public Marketing Office in Zatec (Saaz). According to an announcement by the Ministry of Agriculture, old and low-productive hops gardens are to be abolished during the next few years and new plantings are to be made to take their place. Special consideration (priority in obtaining the necessary materials for the construction of gardens and in obtaining young and healthy plants) is to be given to the needs of agricultural cooperatives that renovate hops gardens on lands owned by two or more growers but consolidated into one garden.
Denmark: Such quantities of hops as are produced are used entirely by growers for home brew.

Ecuador: A few hop plants are being grown experimentally near Tambillo.

France: Most of the hops grown in Alsace, which accounts for 90 percent of the French crop, are controlled by one large cooperative which sets the prices.

Italy: Plans to revive prewar production have not as yet materialized.

Mexico: Recent efforts to grow hops in the Matamoros region of Tamaulipas in the Monterrey area apparently have failed. The experiments were sponsored by Mexican breweries.

New Zealand: Recently the New Zealand government acquired a farm for hops research in the Motueka area. The difference of 2 cents per pound between the f.o.b. price received by growers and that paid by the breweries is placed in a research fund subsidized by the Government and administered by the Department of Scientific and Industrial Research. A Hops Marketing Committee governs sales.

Poland: An experimental farm is maintained at the Farming and Hops College at Krasnystaw where special attention is being devoted to a study of fertilizers for hops.

Sweden: Attempts are being made to establish a hops producing industry in the southern part of Sweden. There were 25 acres in 1949.

United Kingdom: The annual crop is estimated by the Hops Marketing Board. Farm prices for the 1949 crop will be established in January, 1950. A committee of experts will establish prices on the basis of costs of production during the season. The annual quota for the 1949 crops has been increased from 94 to 98 percent of the basic quota. This refers to the quota system employed in marketing hops under the British Hops Marketing Act, whereby each producer is guaranteed a price for his quota based on a percentage of past production. The remaining quantity can be disposed of at whatever price the market will bring. The total annual quota is fixed on the basis of estimated demand for the season.

Early in each year the Brewer's Society makes an estimate of brewers requirements for home grown hops during the coming brewing season (October-September). There is an agreement between the Brewer's Society and hops producers that imports of hops will not be allowed to exceed 1,000 cwt. (112 pounds each), so long as British production can fill the needs of the home market.

Uruguay: Small experimental plantings do not give promise of success for commercial production.

**HOP GROWER MEETINGS**

Nine district meetings were held during the month of January in Oregon. These meetings were sponsored by the U. S. Hop Growers Association and the Hop Control Board. The Independence meeting was sponsored jointly by the Independence Hop Growers of which H. H. Withrow is Chairman.

District advisory committee members to serve for the U. S. Hop Growers Association and for the Hop Control Board were elected at each district meeting.
MORE ABOUT BITTER ACIDS


"Experiments have shown that a substantial proportion of the bitter components of hops are removed from wort and beer by the coagulum, the yeast and the subsequent precipitate. These last bitter substances are of value, although they lack the capacity to give any aromatic character to beer, because they include none of the hop oil and the author reviews the methods which might be used to retrieve the loss. Admixture with fresh hops or extraction of the bitter substances with water, with solutions of salts or with organic solvents is suggested, and the most promising results appear to have been given by extraction with a non-decarbonated water."

In WALLERSTEIN LABORATORIES COMMUNICATIONS for December, 1949 the following abstracts were found:


"The study of the bitter substances of hops is discussed. Pure a-acid (humulon) and b-acid (lupulon) have been prepared by the application of the chromatographic technique. By this method, humulon and lupulon are separated from the soft resins and subsequently purified. The soft resins were examined and found to have no bittering power. It is concluded, therefore, that humulon and lupulon are the only specific constituents of the hop giving rise to bitterness. Of the two, humulon has by far the greater bittering power. It was found further that the humulon molecule itself was not responsible for the bittering properties but that during the brewing process it undergoes a molecular transformation which results in the formation of an isomeric substance which is called iso-humulon. This was prepared in a state of purity and its chemical composition determined. It is more soluble and bitter than humulon. The action of lupulon during boiling of the wort appears to be favorable but exceedingly small. Researches on this aspect are still in progress."

3. "Evolution of Bitter Acids during Ripening of Hops" by M. Verzele and P. Eugene in FERMENTATIO No. 10/12, 95-104 (1949)

"The quantities of a-acid (humulon) and b-acid (lupulon) which develop in hops during ripening were determined polarimetrically. In a study of different varieties (Kent, Hallertau, Saaz, Tettnang), examined at varying intervals during the growth season, it was concluded that the a-acid is formed mainly during the last two weeks of August. Picking time extends for two or three weeks; in general, hops are picked too early.

"From a study of the relationship between the amounts of the two acids, it was found that in the upper parts of the plants the humulon content increases and lupulon decreases. The sum of the amounts of both acids is usually slightly higher in the upper parts of the plants, but this difference disappears in plants which have been uniformly exposed to light. In general, formation of humulon is considerably favored by sunlight.

"In drying hops the temperature should not exceed 50°C, as high temperatures lower the a-acid content. Losses of bitter substances in spite of careful drying are attributable to faulty handling later. Hops should be allowed to rest directly after drying to regain a certain amount of moisture."

-7-
LITTLE DROPS OF WATER

From USDA issue of January 2, 1950 the following facts were filched:

"Scientists measure small objects in microns of which an inch contains 25,000 and a meter a million. Thus measured, a drop of sea fog is 5 microns in diameter, cloud drops are 33, mist drops 100, drizzle drops 200, and light raindrops 500 microns in diameter. The last is one-fiftieth of an inch. But a light raindrop of 500 microns has not 5 but 125 times the volume of a mist drop 100 microns in diameter, and it has 8,000 times the volume of a drop of sea fog! Now we're getting somewhere — if you're still following through the fog.

"The size of the particles that emerge from the end of a spray nozzle has a great effect on the spread of insecticides over surfaces sprayed. A gallon of spray provides only 9 drops per square inch if each drop is 500 microns in diameter whereas a misty spray of 100-micron drops will deposit 1,164 to the square inch. However, if the drops are only 5 microns in diameter, the gallon of spray will provide more than 9 million particles to each square inch of ground sprayed.

"Again, in still air a 5-micron drop of water falls 10 feet in 66 minutes, a 100-micron drop does that in 10 seconds, and a 500-micron drop in about 1 1/2 seconds. But in a slight 3-mile-per-hour breeze a 5-micron drop drifts more than 3 miles in falling 10 feet while a 500-micron drop would settle 10 feet with a drift of only 7 feet. Hence when spraying, both the droplet size and the wind drift must be considered and controlled. Precise regulation of spraying equipment used with the new high-power insecticides is extremely important. Entomologists have to work with both engineers and plane pilots to get just the right equipment combinations. This bug-killing business is getting to be very precise and very scientific, and it takes bug engineers to do the job properly."

The same situation exists in the control of plant diseases.

HOP CONTROL BOARD

The present membership of the Board is mentioned as a matter of information for those not already advised.


Dealers and Grower-Dealers: Ralph E. Williams, Jr., Vice-Chairman, John I. Haas, Ludwig S. Lyon, Robert Oppenheim, F. G. Schlesinger.

Brewers: J. Oliver Doern, Edward V. Lahey, Harris Perlstein, Joseph Sisben.

LENGTHY LEGEND

H. R. Fortmann received his B. S. degree from Oregon State College in June, 1942. His thesis, on file in the OSC Library, was entitled, "A Study of the Interrelationships and Effects of Certain Factors and Cultural Treatments Affecting the Quality of Hops."
THE CREAKING WHEEL

Agriculture has traveled a long way toward mechanization since the advent of the well-known wheel. Ancient wheels creaked! From this fact some practical pre-Christian "character" concocted the pat proverb, "The creaking wheel gets the grease!" Early in the Christian era a divine directive was to "ask and ye shall receive." This latter suggestion still makes sense. The old adage is also still applicable.

Hop growers could do themselves great good by grasping the basic idea and "going to town" with it!

The Hop Research Committee of the Oregon Experiment Station is composed of an agricultural engineer, three agronomists, a chemist, an economist, two entomologists and two plant pathologists. Periodically, this committee confers with the Oregon Hop Research Advisory Committee which consists of six dealers, grower-dealers and growers. Out of these conferences come valid suggestions of value to federal personnel associated with the Hop Production, Disease and Quality Investigations being cooperatively conducted by the U.S. Department of Agriculture and the Oregon and Washington Agricultural Experiment Stations at Corvallis, Oregon and Prosser, Washington. State personnel at both of these centers as well as at Berkeley and Davis, California; Geneva, New York; Pullman and Puyallup, Washington are also concerned with experimental work with hops. Government scientists at regional research laboratories at both Albany, California and Peoria, Illinois have been or are now also engaged in hop experimentation. The Oregon Extension Service includes on its staff a part-time Hop Specialist who works with hop commodity committees of three Oregon County Agricultural Planning Councils.

Surely this imposing aggregation of agricultural experts should be in position, sooner or later, to solve many problems of primary importance to the American hop industry.

Hop growers, individually or collectively, who have questions they want clarified should present them promptly and persistently to these panels of pundits. They all hanker to help!

A MOTTO FOR MARCH

"Heaven helps those who help themselves."
HOP GROWERS CONFERENCE

At peak, around a hundred persons attended the Hop Growers Conference held on campus February 24. Growers, dealers, industry representatives, including reporters, County Extension Agents, members of the Central Experiment Station and Extension Service staffs participated in a full day of consideration of a variety of hop production problems as indicated by the program presented below.

A WORD OF WELCOME

Wm. L. Teutsch, Assistant Director, Oregon Extension Service

MOVING PICTURES

Courtesy Interstate Brewery Company, Vancouver, Washington

PANEL DISCUSSION

Supply, Demand and Prices
Cost of Production
Breeding
Soils
Drainage
Irrigation
Fertilizers
Cover Crops
Culture
Weed Control

MEMBERS OF PANEL

G. R. Hoerner, Hop Specialist, Chairman
M. D. Thomas, Agricultural Economist
G. W. Kuhlman, Agricultural Economist
K. R. Keller, Agronomist
R. E. Stephenson, Soil Scientist
A. S. King, Soil Conservation Specialist
L. E. Warner, Soil Conservation Specialist
H. A. Schoth, Senior Agronomist
R. E. Fore, Agronomist
Virgil Freed, Associate Agronomist

LUNCHEON

Memorial Union Tea Room

PANEL DISCUSSION

Insects
Diseases
Harvesting
Drying
Freezing
Grades

MEMBERS OF PANEL

G. R. Hoerner, Hop Specialist, Chairman
R. W. Every, Entomology Specialist
J. B. Rodgers, Head Agricultural Engineering Department

FEDERAL-STATE HOP INSPECTION SERVICE

A. J. Fleming, In Charge Hop Laboratory
Oregon State Department of Agriculture

Eighty-five people partook of the informal luncheon. The only member of the panel unable to be present was Art King, who was held up by a train wreck en route.

A motion was made by Gene MacCarthy, and passed unanimously, that a similar conference be held next year; details of arrangements to be left to the discretion of the Extension Hop Specialist.
The following data was distributed by G. W. Kuhlman, Department of Agricultural Economics, during his discussion at the Hop Growers Conference held at Corvallis on February 21, 1950:

**ESTIMATED AVERAGE COST OF HOP PRODUCTION IN WESTERN OREGON, 1949**

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost per acre</th>
<th>Ratio</th>
<th>Cost per cwt. 1949</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1935* 1949**</td>
<td>1949</td>
<td>Full Restricted</td>
</tr>
<tr>
<td>(Yield,973 lbs/acre)</td>
<td>(Yield,920)</td>
<td>lbs/acre</td>
<td>basis**(690#/ac.)***</td>
</tr>
<tr>
<td>Fixed and preharvest costs</td>
<td>$29.85</td>
<td>$131</td>
<td>$14.00</td>
</tr>
<tr>
<td>Labor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sprays and dust</td>
<td>2.16</td>
<td>30</td>
<td>1.100</td>
</tr>
<tr>
<td>Machinery and miscellaneous</td>
<td>19.37</td>
<td>37</td>
<td>192</td>
</tr>
<tr>
<td>General expense</td>
<td>5.93</td>
<td>11</td>
<td>192</td>
</tr>
<tr>
<td>Depreciation on equipment</td>
<td>14.15</td>
<td>27</td>
<td>192</td>
</tr>
<tr>
<td>Interest on investment @ 5%</td>
<td>17.76</td>
<td>34</td>
<td>192</td>
</tr>
<tr>
<td>Total Fixed and Preharvest</td>
<td>$89.22</td>
<td>$270</td>
<td>303</td>
</tr>
</tbody>
</table>

Harvest costs

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost per acre</th>
<th>Ratio</th>
<th>Cost per cwt. 1949</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1935* 1949**</td>
<td>1949</td>
<td>Full Restricted</td>
</tr>
<tr>
<td>Picking</td>
<td>$16.33</td>
<td>$110</td>
<td>$240</td>
</tr>
<tr>
<td>Other harvest labor</td>
<td>16.96</td>
<td>83</td>
<td>192</td>
</tr>
<tr>
<td>Machinery and miscellaneous</td>
<td>11.36</td>
<td>22</td>
<td>192</td>
</tr>
<tr>
<td>Total Harvest Costs</td>
<td>$71.65</td>
<td>$215</td>
<td>288</td>
</tr>
</tbody>
</table>

TOTAL COST

|                                           | $163.87       | $485  | 296               | $52.73 | $63.31 |

* Oregon Agricultural Experiment Station Bulletin 364, "Cost and Efficiency in Producing Hops in Oregon."

** Indicated 1949 average yield was 920 pounds (gross production) per acre in Oregon, as reported by the Bureau of Agricultural Economics, U.S.D.A., September 1, 1949.

*** Indicates relative cost in 1949 compared to cost in 1935. Index of picking hops is based on rate of 3 cents per pound (green basis) in 1949. The index of other labor is based on Oregon farm wages per month without board in 1948 as reported by the B.A.E. The cost for sprays and dusts is based on data obtained in 1947. The indexes for all other costs are based on the index of production costs (prices paid by farmers for commodities, interest, and taxes) as reported in "The Agricultural Situation", published monthly by the B.A.E.

**** Harvesting permitted under Marketing Agreement.

**BOY BREWERS**

By unanimous vote the New York City Board of Education recently decided to add a class to its high school evening course on how to brew beer.
"TIMELY HINTS FOR HOP GROWERS" is a weekly program presented by the Extension Hop Specialist over Radio Station KOAC each Saturday at 12:15 p.m. The series started in March and runs through September. Thereafter, during October through February, 1951, hop subject matter is presented on a once-a-month basis.

CROP DUSTERS MEETING

Under date of February 12 the OREGONIAN carried the following item of interest:

"The Washington State Aviation association has called a meeting of aerial crop dusters and sprayers in Walla Walla, February 17, Executive Secretary Robert N. Ward announced."

OREGON'S OWN

On February 20 the Second Annual Conference on Airplane Dusting and Spraying was held on campus at Oregon State College. The meeting was sponsored by Oregon Flying Farmers Association, Oregon Aerial Dusters Association, Oregon State Board of Aeronautics and Oregon State College.

Morning, Luncheon and Afternoon Sessions were well attended, A total of twenty-three speakers contributed to a very interesting and highly instructive program which stimulated considerable discussion from the floor.

The control of two important hop pests—aphis and red spider mites—was given consideration. No mention, however, was made of the use of the airplane as a means of applying fungicides for the control of downy mildew.

REMARKS ON MARKETING

CALIFORNIA AGRICULTURE, issue of March, 1950 carried an interesting article by George L. Mehren entitled, "Marketing Agreements and Orders Regulating Sales have Effect of Law." Mention is made of the marketing agreement and order affecting hops.

FLAX FORM FACTS

In the same publication, mentioned above, is an interesting article by A. Earl Pritchard and W. W. Middlekauff, "Wind Borne Pest Omnivorous Leaf Tier Controlled Readily by Insecticide Treatments."

This pest has been troublesome on hops in some sections of the Willamette Valley in Oregon and attempts at control have not proven too successful.

In California, satisfactory control was reported with either DDT or dichlorodiphenyl dichlorethane when used at the rate of two pounds of the 50% wettable powder per 100 gallons of water. Control of the caterpillars was most easily accomplished when they were leaving the leaf mines and before they were protected by new growth.

BRIEF NOTE FROM BRITAIN

AGRICULTURE for July, 1949 mentions the following West Midlands varieties: Fuggles, Bramling, Early Bird, Mathon, Brewers' Gold, Bullion and Northern Brewer.

The fluctuating form of Verticillium wilt is present in the area. All commercial varieties are attacked by nettlehead. Fuggles, most Wye seedling varieties and some males are symptomless carriers of mosaic.
The Fourth Annual Convention of the U. S. Hop Growers Association held at Salem, Oregon February 9 to 11 was a "honey." Attendance is reported to have reached around five hundred; this record would seem to vindicate the opinion of those who favor holding these conventions at cities located in the centers of hop production in the several hop-growing states on the Pacific Coast.

The various committees functioned most effectively. Contributions to the serious side of the program were significant. The social gatherings were glamorous. One motion picture, a colored 'talkie' entitled, "Hop Growing Operations," shown by John I. Haas, Inc. is worthy of special mention. It was a masterpiece.

Dean Wm. A. Schoenfeld of Oregon State College, because of illness, was unable to discuss his assigned topic, "Foreign Trade Situation." F. L. Ballard, Associate Director, Oregon Extension Service, delivered an interesting address, "Influences Affecting Oregon Agriculture," K. R. Keller, Agronomist, U.S.D.A., Hop Research Project at Corvallis, discussed the "Hop Research Program." Oregon's Extension Hop Specialist talked about "Hop Production Problems."

HOP EXHIBIT

The hop exhibit at the above Convention attracted a lot of attention. The suggestion from several who saw it was that the exhibit be made a regular feature of future conventions.

Samples were supplied by: J. D. Harlan, New York Agricultural Experiment Station, Geneva; K. R. Keller, Oregon Agricultural Experiment Station, Corvallis; F. J. Haas, J. O. Hughes, A. J. Ray & Son, Paul Reinemann Co., George Segal, J. Sonnenschein and S. S. Steiner.

GREEN GUESS

THE BREWER'S JOURNAL AND HOP AND MALT TRADES REVIEW for November 16, 1949, in mentioning the 1949 English hop crop, stated: "Further examination of the crop confirms the original view that it is in the main of good quality, with East Kent Goldings being paramount in that respect. Although hops in general are considerably greener in appearance than last year, nevertheless in most cases they are fully ripe. It is possible that the green colour is in some measure due to lack of rain.

PROBLEMS APLENTY

From the same source mentioned above, portions of the report of the October monthly meeting of the Council of The Brewers' Society will be of interest:

"The present agreement between the Society and the Hops Marketing Board would terminate on March 31st, 1950, and discussions had been going on a considerable time as to the amendments to be made for the purpose of the new agreement for the succeeding seven years. There were two points on which the Society and the Board had been unable to agree, and these would be submitted for decision by the Permanent Joint Hops Committee at a meeting early in November."
"The first point of difference related to the incorporation in the agreement of the undertaking given by the Society in 1945 that brewers would not import more than 1,000 cwt. of hops in any season in which the whole of the English crop grown on a specified acreage was not purchased or contracted for. These hops were required mainly for the brewing of lager beer, but in the view of the Society it should not be limited strictly to distribution to lager brewers.

"The second point arose out of the decision of the Permanent Joint Hops Committee earlier this year that, in determining whether the valuation of the crop in each season was in accordance with the average price fixed by the Committee, all-fault hops should be excluded from the calculation. The Committee had upheld the Society's contention that unless such hops were excluded the price of all merchantable hops would be unfairly enhanced. The Society desired to include a provision to this effect in the agreement, together with a definition of what constituted merchantable hops, but the Board were not prepared to accept this.

"Under the provisions of the brewers' contracts, the brewer had the right of rejection of hops on the ground of contamination or of their having been insufficiently dried, and the Board then had an obligation to offer other hops in replacement. It was therefore necessary for the Board to retain a certain reserve of hops for these replacements. For a number of years the crop had been less than the total of the brewers' contracts, and since contracts had only been fulfilled by the main release up to a specified percentage, there remained a liability on each brewer to take his share of the sound hops remaining in the reserve at the end of trading.

"This distribution had now been completed for the 1948 crop. There were inevitable difficulties in carrying out this operation because, in spite of the efforts of the Hop Merchants' Association to apportion the hops fairly, it was impossible to allocate to each brewery exactly the type of hops which it preferred. The distribution did not, however, amount to more than 1 per cent of each brewer's contract, and in spite of some protests as to unsuitability, all brewers had accepted their allotment.

"In order to minimise this difficulty in the 1949 crop the Board had agreed to reduce the size of the reserve held to the absolute minimum. In 1948 it had been approximately 6,000 pockets, but for 1949 only 2,800 pockets would be held; and after allowing for the estimated proportion which would be used up in replacement of rejected hops it was unlikely that more than 1,200 pockets would fall to be distributed at the end of the season, equal to about 3/4 per cent of each brewer's contract.

"The total crop this season through the Board was estimated at 151,500 pockets, nominally 227,250 cwt., against a total of 250,618 cwt. contracted for. The Board had therefore fixed the percentage release at 89 per cent of contract quantities, which compared with 88 per cent last season."

BELGIAN BREWING

From the same source mentioned above, in a section entitled, "Brewing and Malting Notes," reference is made to a paper by J. de Clerck in the JOURNAL OF THE INSTITUTE OF BREWING for September-October, 1949, "The Technical Evolution of the Belgian Brewery During and After the War." A paragraph on "Hopping" is pertinent:
"Prof. de Clerck states that antiseptic power is of less significance in Belgium than the bittering power of the hops, and that Belgian brewers have found it possible to obtain more regular results by calculating their hop rates according to the bitter value of the hops used. When a change to another hop is to be made an equal weight is not used, but a certain proportion giving the same bitter value. Another novelty is that arising from the work of Govaert, who has recently concluded that the bitterness of beer is due to an isomeric transformation product of the humulon; this product he calls isohumulon. When hops are boiled in the copper only a proportion of the humulon changes into isohumulon; the other part becomes resinous and is without brewing value. Govaert has patented a procedure which sets out to transform all the humulon into isohumulon before the hop itself is added to the copper. This process consists of treating the hops with alkaline solution. It is claimed that this results in no more losses of humulon, and that 50 per cent of the hops may be saved. Several Belgian breweries have tried this procedure, and although there is a quite considerable saving of hops, it has not yet been found to reach the 50 per cent claimed. Whether the process deleteriously affects the other qualities of the beer has not yet been determined."

HOPS HELP

In a FOOD AND HOME NOTES release of January 25, 1950 by the USDA Office of Information an interesting item on "Canning with Antibiotics" appeared. Among the four antibiotics employed in the process, "still in the very early stage of experiment", was lupulon. All four, as used, did not affect the flavor of the canned vegetable.

NOTES FROM ABROAD

THE BREWERS' JOURNAL AND HOP AND MALT TRADES' REVIEW, issue of December 21, 191*9 carried the following items of interest:

Austria: Hop quotas, fixed in different trade agreements with Germany, Czechoslovakia and Jugoslavia, have been delivered, though sometimes with delays. Next year hop-growing tests will be carried out in Austria, but with not too high expectations, as neither the climate nor the soil is sufficiently fit for hop-growing.

Belgium: The 1949 hop crop is estimated at 22,000 quintals, two-thirds of which are grown in the Poperinghe area and one-third in the Alost area. The demand is exceptionally active, especially for hops certified by the National Hop Office. The crop of the Alost area is almost completely sold. Prices vary between 4,000 and 5,000 Belgian francs. The bi-monthly bulletin of the Belgian Food Industries Confederation published the following estimates of the 1949 hop harvest in different countries:

<table>
<thead>
<tr>
<th>Country</th>
<th>1948</th>
<th>1949</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>14,000</td>
<td>22,000</td>
</tr>
<tr>
<td>U. K.</td>
<td>275,000</td>
<td>275,000</td>
</tr>
<tr>
<td>France</td>
<td>30,000</td>
<td>25,000</td>
</tr>
<tr>
<td>Germany (West)</td>
<td>105,000</td>
<td>125,000</td>
</tr>
<tr>
<td>Czechoslovakia</td>
<td>97,000</td>
<td>110,000</td>
</tr>
<tr>
<td>Jugoslavia</td>
<td>23,000</td>
<td>23,000</td>
</tr>
<tr>
<td>Poland</td>
<td>5,000</td>
<td>5,000</td>
</tr>
<tr>
<td>U.S.A.</td>
<td>450,000</td>
<td>450,000</td>
</tr>
<tr>
<td>Australia</td>
<td>18,000</td>
<td>10,000</td>
</tr>
</tbody>
</table>

-7-
These figures have to be taken with a certain reserve—e.g., the estimated Czechoslovak figure is much higher than the real one, i.e., 87,200 quintals.

Chile: Chile depends entirely upon imports of hops to meet the requirements of its brewing industry. Current annual consumption is probably from 220 to 230 metric tons gross weight.

Until the beginning of World War II Germany was the principal source of Chilean hop imports. Czechoslovakia also supplied substantial quantities in certain years, but imports from the United States were negligible. Since 1940, however, the United States has been almost the sole supplier.

Czechoslovakia: The hop purchase by the State Export and Import Society is finished and the whole crop is already in the stores of the hop-growers' co-operative. Hop exports started on October 9 and 15 per cent of the crop had been exported. This year's crop is about 10 per cent lower than last year's; down 38 per cent in the Ustek and 26 per cent in the Roudnice area.

Following are the figures of this year's crops, according to areas:

<table>
<thead>
<tr>
<th>Area</th>
<th>Quintals*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zatec (Saaz)</td>
<td>73,600</td>
</tr>
<tr>
<td>Ustek</td>
<td>7,800</td>
</tr>
<tr>
<td>Roudnice</td>
<td>5,200</td>
</tr>
<tr>
<td>Trsice</td>
<td>600</td>
</tr>
<tr>
<td></td>
<td>87,200</td>
</tr>
</tbody>
</table>

* 1 quintal is roughly 1 cwt.

Netherlands: Hops are not produced in commercial quantities in the Netherlands. Detailed information on consumption is not available. Until recently Czechoslovakia has been the principal source of hops used by the Netherlands brewing industry, but because of the high prices fixed by the Czechoslovak government on export hops, supplies for 1948-1949 were purchased from Germany.

WASHINGTON WORK

WALLERSTEIN LABORATORIES COMMUNICATIONS for December, 1949 carried the following abstract:

"Hop Insect Control in Western Washington" by G. S. Batchelor and E. P. Breakey in HOPPER 6, No. 2:6-8, 10 (1949).

"A research project on the control of some of the principal insect pests of hops was set up at the Western Washington Experiment Station in 1947. It was concerned primarily with the hop aphid, Phorodon humuli Shrank, and the two-spotted spider mite, Tetranychus bimaculatus Harvey. Nicotine, customarily used against the spider mite, is effective only when the temperature is 21°C (70°F) or higher, which is warmer than usual in western Washington. Two new products, parathion and tetraethyl pyrophosphate, were, accordingly, tested. Both appeared to give better control than nicotine preparations. However, parathion cannot be recommended for such use until residue studies on harvested hops have been made to determine its relative toxicity. A respirator or mask should be worn when tetraethyl pyrophosphate is applied to avoid unpleasant effects."
April 18, 1950

WREATHS FOR THE WORTHY

Not long ago I uncovered a container of musty memoranda in which mention was made of fully fifteen hop-grower organizations which had once flourished fitfully in these United States. All are now defunct!

Time took its toll too of some seven hop trade papers. Pshaw!

Several aggressive grower groups, however, still survive. Among them are the Independence Hop Growers, the Oregon Hop Producers, Inc., the Washington State Hop Producers, Inc. and of course the U. S. Hop Growers Association.

THE HOPPER, official organ of the last named organization, is the only magazine in existence, as far as I know, devoted entirely to the interests of the hop industry. Editor Ed Markell directs the destinies of this meritorious little magazine in a masterly manner.

Markell, for many years, has been doing a bang-up job of unobtrusively urging the consummation of a lengthy list of Association objectives.

A comprehensive and constructive 16-point program, for example, was printed in the April, 1946 issue of THE HOPPER. Many of the matters mentioned, and more, have since come to pass. Credit for these accomplishments is due, in large part, to the patient persistence of the Association's sapient Secretary.

True, he has not always succeeded in securing the sought-for results but his industry and integrity, the reasonableness of his pleas or the soundness of his petitions have never been questioned in any quarter.

His capable co-worker, Paul T. Rowell, has recently reaped a well-earned reward by being chosen Managing Agent of the Hop Control Board and Secretary of the Growers Allocation Committee of the U. S. Hop Growers Association.

Ed continues to carry on, to the best of his ability, under the limitations of a rock-bottom budget made so by the ultraconservative contributions of his grower constituents.

A wreath of high-grade domestic hops, herewith, for an able advocate, considerate confrere, self-effacing servant, genial gentleman.

ADVICE FOR APRIL

"No group rises higher than its leadership."
HARRIS HANDBOOK

M. R. Harris, Extension Plant Pathologist, has prepared a very attractive handbook for the use of Washington County Extension Agents, entitled "Plant Diseases in Washington."

Mention is made of crowngall, downy mildew and mosaic of hops.

CONFEDERATES CONFER

A little late in letting you know, but A. Irving Dow, Assistant Agronomist stationed at the Irrigation Experiment Station at Prosser, Washington, was a campus visitor January 3 to 10. Conferences and consultations, together with library reference work, provided convenient cover from our "unusual" wintry weather.

GROWERS ELECT

An item in the YAKIMA HERALD for February 21, 1950 indicates that on the previous afternoon 130 of the 160 grower members of the Washington State Hop Producers, Inc. re-elected M. A. Lesh and W. H. Hill to the board of directors.

TENTH ANNIVERSARY

In the JOURNAL OF THE INSTITUTE OF BREWING, issue of November-December, 1949, it was stated that "before the last war Belgium grew only 6 percent of the malting barley and only half of the hops which were required." In 1938 Prof. Isebaert founded an organization for encouraging the cultivation of improved varieties of barley and hops, known as V.E.B.O. The tenth anniversary was celebrated in connection with the annual barley and hops exhibition. Awards are based on a points system, identical with that used by corresponding organization in France (SECOBRAH) and in Holland (Na Co Brouw). All three of these organizations work in close collaboration in co-ordinating the methods and results of the varietal trials conducted in the three countries.

TEST FOR MATURITY

From the above source a meeting of the Scottish Section of the Institute is reported to have considered a paper by H. L. A. May, "The Season's Hop Crop." True ripeness is indicated, it was said, by the mauve or black color of the seed.

Almost all districts except East Kent showed decreases in production ranging from 9 to 17 percent. Domestic usage and export requirements were down 10 percent according to early estimates. A hop rate of .9 pound per bulk barrel was mentioned.

BREWING TRIAL

From the above source, an article by L. Fletcher, entitled "Brewing Trial with a New Variety Hop" (Ref. No. CTh8), is summarized as follows: "Small-scale brewing trials with this variety, which has previously been found to have some degree of resistance to Verticillium wilt, have shown that this hop imparts no objectionable flavors to beer and it can therefore be strongly recommended for future trials."
In THE BREWERS' JOURNAL AND HOP AND MALT TRADES' REVIEW for January 18, 1950 mention is made that a Brewers' Exhibition will be held next October whereat a hop competition will be conducted.

IMPORT DUTIES

From the above source we learn, "The Customs duty on imported hops is 4 pounds per cwt. and there are corresponding duties on imported extracts, essences and similar preparations made from hops, based on the quantity of hops used in their manufacture. The duty on hop oil, however, formerly based on the quantity of hops used in its manufacture, is now fixed at 1 pound per oz. Empire products are granted a preference of one-third of the duty."

MARKETING SCHEME

From the above source we are informed, from a section entitled "Orders and Regulations", that "The Hops Marketing Scheme (Amendment) Order, 1949, provides that all basic quota allotted by the Hops Marketing Board prior to the 31st day of March, 1950, shall lapse on that date and that a complete reallocation shall be made, the total amount of which shall be determined by the Board and based on the aggregate productive capacity of all the farms in England occupied by registered producers on the 31st day of March, 1950. Thereafter the position will be subject to periodic general reviews, the first to be held on or before the 31st day of March, 1955, and thereafter within five years after each previous general review according as circumstances render such action necessary. On every general review the Board may make a general reallocation of basic quota, or an adjustment by issuing additional basic quota, or accepting surrenders of basic quota by agreement.

"This Order further lays down the method by which the determination and allotment of basic quota and annual quota are to be carried out, redefines the existing powers of the Board under Section 5 of the Agricultural Marketing Act, 1931, in respect of the regulation of the marketing of the product and the encouragement of co-operation, education and research, and makes minor and consequential amendments in the body of the Scheme which are a necessary corollary to the main amendments."

Under another section, "Markets", we find that, "Distribution of the English crop continues satisfactorily. The Permanent Joint Hops Committee has fixed the average price of the 1949 crop at 26 pounds 10s. 6d. per cwt. to the growers, an increase of 15s. per cwt. on the 1948 price. Grade prices will, no doubt, be announced shortly. The 1949 crop to be marketed through the Board is estimated at 227,250 cwt."

NOTES FROM ABROAD

In the above source we found the following items of interest:

Brazil: An increased demand for American hops is predicted by the Commerce Department because of lower prices and better arrival condition than competing hops from Europe. But, if prices reach competitive level, demand may switch back to the European product which the Commerce Department quotes a Brazilian source as saying contains less leaf and stem than the U. S. product.
Jugoslavia: "The Savinia Valley of Slovenia, adjacent to the town of Zalec, produces approximately 55 per cent of the total hop output of Jugoslavia. Before the war, this area averaged 6,177 acres, with an annual production ranging from 2,000 to 2,500 tons, according to U. S. Department of Commerce sources. The most recent published figures available for this area, probably pertaining to 1948, report 2,471 acres and a production of 600 tons. While comparable information has not been obtainable for 1949, it is believed that the planted area ranges from 3,089 to 3,707 acres, with production at 750 to 850 tons.

"For Jugoslavia as a whole, the five-year plan goal for hops is 22,239 acres. A recent publication states that 21,992 acres are planted to hops in 1949. Considering the generally favourable growing conditions for hops, it may be estimated that the total 1949 crop for all Jugoslavia approximates 5,000 to 5,500 tons.

"The Jugoslav brewing industry is steadily increasing its production of beer and its consumption of domestically produced hops."

ROOT ROTS DOWN UNDER

Root rots of hops have been known in New Zealand for 20 years or more. They've been serious for at least the last six. Where drainage is poor, the disease is most severe.

Three pathogens have been held responsible:

1. Gibberella cyanogenena
2. Phytophthora cactorum
3. Verticillium albo-astrum and dahliae

Various fungicides have been employed to combat the disease but so far without complete success.

OLD NOTE

In Nelson, New Zealand there is a Hop Research Committee. A half penny a pound is contributed by both growers and brewers to finance research. A Hop Marketing Committee sells all hops through a system of quotas and pools. There is no standard system of grading. The grower price in 1948 was 2 shillings, 11 pence per pound.

BUDWEISER BUSINESS

TIME, issue of April 3, 1950, in the Business & Finance section, pages 83-85, contributes some interesting comments on Anheuser-Busch, Inc. big buyers of hops. There is an intriguing illustration of how a lot of hops are still bought.

VARIED VIEWPOINT

Elbert E. Miller, University of Utah, and Richard M. Highsmith, Jr., Assistant Professor of Geography at Oregon State College, published an illuminating illustrated article in THE JOURNAL OF GEOGRAPHY for February 1950 entitled, "The Hop Industry of the Pacific Coast." Reference is made to an earlier article, "The Hop Industry of the Pacific Coast States", published in the April 1936 issue of ECONOMIC GEOGRAPHY by Otis W. Freeman. Why, oh why don't the shoemakers stick to their own lasts!
STATE SUMMARY

AGRICULTURE BULLETIN for March, 1950 carried an interesting compilation called, "Oregon Crop Production Summary". Information on hops is included.

BUG BAIT

THE DAILY SUMMARY, published by U.S.D.A. under date of February 27, 1950, carried the following item of interest: "NEW METHOD OF INSECT CONTROL NOW IN MAKING."

"New chemicals that make plants toxic to insects for short periods are being tested by scientists of the Department of Agriculture. These chemicals kill insects that suck the juices of treated plants. They are known to the entomologists as "systemic poisons," and should not be used by the public until tested further...Chemicals most suitable for this purpose in tests, so far, are derived from the inert calcium phosphate rock, basis for our most common agricultural fertilizers...The entomological discovery of these new materials has renewed interest in the idea of controlling insects by injecting or applying insecticides that will be taken into the plant tissues so that insects feeding on them will be killed. Bureau entomologists have studied the problem for many years. But none of the chemicals studied until recently have warranted further investigation."

HOP EXPORTS

BREWER AND DISPENSER for February, 1950 contained the following item: "HOPS EXPORTED TO 13 COUNTRIES; CANADA TAKES 3.2 MILLION LBS."

"During the 1948-49 marketing season, United States hops were exported to more than 13 different countries of the world."

"While these countries were widely distributed over the globe, our nearest neighbors took the largest amounts. Canada received about 3.2 million pounds and Mexico took 1.5 million pounds. Shipments to Colombia were only slightly smaller than to Mexico. Brazil was the fourth country out of the 13 to receive more than a million pounds of domestic hops during the past season, but practically all other American countries took some. Australia took nearly 800,000 pounds.

"Comparatively few hops went to Europe, although Ireland took some 450,000 pounds. The past season's exports to Canada, Ireland, Portugal and Japan were the largest in several years."

OUTLOOK FOR OREGON

AGRICULTURAL SITUATION AND OUTLOOK is ably edited by Extension Agricultural Economists Breithaupt and Thomas. The issue of March 10, 1950 contained interesting information on hops. The parity price, as of mid-January, was 66.5¢ lb.

DRIER BULLETIN

Oregon Station Bulletin 174, "A Hop Drier for Oregon Farms" by C. Ivan Branton was published in February, 1950. Better late than never!

Copies are available for distribution upon request.
WALLERSTEIN LABORATORIES COMMUNICATIONS for December, 1949 carried the following items:

BELATED NOTE FROM BRITAIN

"The 1948 Hop Crop" by H. L. A. May in J. INC. BREWERS' GUILD 35, No. 4;12:60-65 (1949)

"The hop crop in England in 1948 was inferior to that of the preceding year because of unfavorable weather, particularly in August when there was heavy rainfall. Goldings were especially disappointing; Fuggles were not so badly affected since they have more resistance to long periods of rain. The hops were characterized by a reduced lupulin content and, therefore, a lower preservative value.

"Since acreage assigned for hop growing is strictly limited in England, new varieties would have to be grown at the expense of the commercial types already in use. Brewers differ in their opinion as to the utility of new varieties such as Brewers Gold, Brewers Favourite, Bullion, and Early Promise. The consensus was that there should be a reduction in the number of different types of hops grown; agreement was unanimous that no new varieties could replace Golding."

GOING UNDERGROUND

"Note on the Root System of Hops" by J. G. Lambert in ECHO BRASSERIE 5, No. 26:555-566 (1949)

"The root systems of hops have not been very extensively studied, owing to the practical difficulties involved. However, the fact seems to be established that differences in root systems are not varietal factors but are dependent on the condition of the soil. Deep, vertical-type roots are found in relatively dry soils with humid subsoils; and the more or less horizontal type is characteristic of humid soils with elevated aquiferous layers. The mixed type of root system seems to be found in soils of medium humidity but with deep aquiferous layers. From the point of view of utilization of fertilizers, the first type is less advantageous.

"A more extensive knowledge of the behavior of root systems of hops is desirable, and further study is urged to determine which soils are the most suitable for hop growing."

ALL HOPPED UP

"Boiling Hops in Water" by P. Kolbach and C. Schwabe in BRAUEREI, WISSENSCH. BBL. 2, No. 4:25-29 (1949)

"Aqueous hop extract has been used in Germany instead of water for diluting beer. This provides a beer of the low gravity required, yet with the bitter substances content almost unimpaired. The use of aqueous hop extract is also said to be more economical than ordinary hopping. In many cases this procedure has been successful, but in certain instances, particularly with very low gravity beers, a slight haziness and a disagreeable hop taste were observed. Nevertheless, a study of the influence of different conditions on the tannin and bitter substances content of aqueous hop extract seemed to be worthwhile.

"The tannin content showed only small variations as a result of changes in duration of boiling, hopping rate, and carbonate content of the water. On the other hand, the extraction of bitter substances was found to depend on the hopping rate and the carbonate content of the water. Unsoftened
water should be used, as hardness aids in the conversion of the a-acid to the a-soft resin. The amount of water should be kept to a minimum to save fuel. The pH of the water after boiling should be 6.2 to 6.4.

"The aqueous hop extract is added to fermented wort which should have a sufficiently low pH to precipitate the tannin-protein complexes formed, and sufficient time should be allowed for the precipitation to take place. The tannin of aqueous hop extract did not appear to be any more harmful to the quality of beer than the tannin of hopped wort.

"Knowledge of this subject is still very incomplete, but the authors believe the publication of their results is justified."

**ANTIBIOTIC ACTIVITY**

"Lupulon—An Antibiotic Extracted from the Strobiles of Humulus lupulus" by A. J. Salle, Gregory J. Jann and Michael Ordanik in PROC. SOC. EXPTL. BIOL. MED. 70, No. 3:409-411 (1949)

"The bactericidal properties of lupulon were investigated. A study of the action of lupulon on a number of Gram-positive and Gram-negative bacteria by the penicylinder method showed that a 1:10,000 dilution of the antibiotic was effective against Gram-positive bacteria but had little or no effect on Gram-negative bacteria even in concentrations as high as 1:500. Lupulon in 1:500 dilution also had no demonstrable effect on a number of higher organisms (pathogenic and non-pathogenic molds and actinomycetes).

"When tested in the presence of 10% horse serum, lupulon exhibited no antibiotic effect. In the absence of serum it showed its greatest activity against Mycobacterium tuberculosis H37Rv. A comparison of the action of a freshly prepared solution of lupulon and one 10 days old on M. tuberculosis H37Rv showed the former to be considerably more effective. This inactivation on standing is compatible with the general instability of the lupulon molecule. Experiments on mice showed lupulon to be completely inactivated *in vivo.*"

**MIGHTY MITES**

**DOWN TO EARTH,** Volume 5, Number 4, carried an article by W. E. Blauvelt and W. E. Hathaway entitled, "K-6451 Aerosol For Greenhouse Mite Control." Mention was made of Tetranychus telarius, the red spider mite of hops.

"Mites are about one-fiftieth inch in length. One mite in 30 days gives rise to over 13,000 mites and eggs in 70 degrees temperature and 13,000,000 at 80 degrees." Heat helps!

**NEW MATERIAL FOR MITES**

Dupont's AGRICULTURAL NEWS LETTER for March-April, 1950 carried an interesting item, "New Organic Phosphorus Compound -- DUPONT EPN300--Introduced to Step up Offensive Against Orchard Mites."

At least one of the mites mentioned is an important pest of hops.

**A FORTUNE FEATURE**

FORTUNE for April, 1950 carries an interesting article, "The Brotherly Brewers." The cover page is devoted in its entirety to a pretty painting of a hop harvest.
<table>
<thead>
<tr>
<th>COUNTY</th>
<th>NUMBER OF GROWERS</th>
<th>TOTAL NUMBER OF ACRES</th>
<th>AV. NO. ACRES PER GROWER</th>
<th>TOTAL PRODUCTION IN POUNDS</th>
<th>AV. POUNDS PER GROWER</th>
<th>TOTAL ALLOTMENT IN POUNDS</th>
<th>ALLOTMENT PER GROWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benton</td>
<td>8</td>
<td>22.96</td>
<td>2.86</td>
<td>101.43</td>
<td>356,128</td>
<td>39,569</td>
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<tr>
<td>Clackamas</td>
<td>60</td>
<td>1,300.90</td>
<td>21.68</td>
<td>1,130,527</td>
<td>18,842</td>
<td>872,387</td>
<td>14,539</td>
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<tr>
<td>Jackson</td>
<td>57</td>
<td>656.34</td>
<td>11.45</td>
<td>60,563</td>
<td>60,563</td>
<td>46,573</td>
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<tr>
<td>Josephine</td>
<td>20</td>
<td>1,259.86</td>
<td>62.99</td>
<td>1,903,490</td>
<td>95,174</td>
<td>1,463,783</td>
<td>73,189</td>
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<tr>
<td>Lane</td>
<td>9</td>
<td>326.53</td>
<td>36.28</td>
<td>245,458</td>
<td>27,273</td>
<td>188,756</td>
<td>20,972</td>
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<tr>
<td>Linn</td>
<td>8</td>
<td>314.54</td>
<td>39.31</td>
<td>330,879</td>
<td>41,359</td>
<td>254,446</td>
<td>31,805</td>
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<tr>
<td>Malheur</td>
<td>6</td>
<td>209.49</td>
<td>34.91</td>
<td>320,020</td>
<td>53,336</td>
<td>242,104</td>
<td>40,350</td>
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<tr>
<td>Marion</td>
<td>213</td>
<td>6,855.33</td>
<td>32.18</td>
<td>6,752,755</td>
<td>31,703</td>
<td>5,188,444</td>
<td>24,358</td>
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<tr>
<td>Polk</td>
<td>42</td>
<td>3,214.25</td>
<td>76.20</td>
<td>3,077,088</td>
<td>73,264</td>
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<td>56,337</td>
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<tr>
<td>Umatilla</td>
<td>2</td>
<td>105.78</td>
<td>52.89</td>
<td>178,890</td>
<td>89,445</td>
<td>137,566</td>
<td>68,783</td>
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<tr>
<td>Washington</td>
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<td>187.99</td>
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<td>116,613</td>
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<tr>
<td>Yamhill</td>
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<td>63.89</td>
<td>15.97</td>
<td>52,231</td>
<td>13,059</td>
<td>40,166</td>
<td>10,041</td>
</tr>
</tbody>
</table>

N.B. There were a total of 3,960.128 more pounds of hops produced than were allocated for sale. This allowed growers to sell more than their allocation permitted them to sell.
A MESSAGE TO MARCUS

Governmental agencies are not unique in their use of alphabetical abbreviations to denote their names. Certain combinations of letters have become so commonplace, and their connotations so clear, we often forget the full translations, if we ever knew them! G.O.P., for instance, produces immediately the mental mirage of a ponderous pachyderm. By association there comes to mind, with equal clarity, a once demure donkey which at the moment appears particularly puissant in the national political menagerie.

At sight of the symbols M.B.A.A., I think instantly of Marcus Maegerlein, erstwhile Chairman of the Materials Improvement Committee of the Master Brewers Association of America. Because of his considerate concern, my attendance at three national meetings of that Association were professionally profitable and personally pleasant. Through his friendly ministrations were engendered the fraternal feelings I have long entertained toward that gracious group ever since their cup of kindness first overflowed in my direction 13 years ago. I recall with pride my participation in the meetings held at Milwaukee in 1937, at San Francisco in 1939 and at St. Louis in 1940. Over the years several meetings of District Northwestern have also been indulged. Keeping in touch with "the trade" has definite advantages.

The M.B.A.A. is international in scope with 21 Districts in the United States, 2 in Canada and 1 in Cuba. Membership comprises the production heads of over ninety per cent of the breweries and malt houses in the western hemisphere. There were, at last count, 1100 active, 250 associate and over 1000 allied members! Fifteen committees conduct the business of the Association. Cooperative relationships are maintained with: the U.S. Brewers Foundation, Small Brewers Association, Midwest Barley Improvement Association, U.S. Hop Growers Association, Brewers Yeast Council and the Brewers Hop Research Institute.

I welcome the opportunity of renewing acquaintances at the International Brewing Industries Exposition to be held, in conjunction with the 47th annual meeting of the Master Brewers Association of America, in Philadelphia October 3 to 6 this year. I hope Marcus Maegerlein will be there to give a nostalgic glance at the Hop Industry Exhibit.

A MEMORANDUM FOR MAY

"To be born a gentleman is an accident; to die one is an achievement."
GROWER GROUPS NAMED

One member and one alternate from each hop-growing district in Oregon was named to the Growers Advisory Committee of the Hop Control Board and the U.S. Hop Growers Association at growers meetings held throughout the state during January, as follows:

<table>
<thead>
<tr>
<th>DISTRICT NO.</th>
<th>MEMBER AND ALTERNATE</th>
<th>ADDRESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>D. T. Eismann</td>
<td>Grants Pass</td>
</tr>
<tr>
<td></td>
<td>R. H. DeArmond</td>
<td>Rt. 2, Grants Pass</td>
</tr>
<tr>
<td>2</td>
<td>L. S. Christofferson</td>
<td>Eugene</td>
</tr>
<tr>
<td></td>
<td>W. H. Anderson</td>
<td>Rt. 2, Box 97, Eugene</td>
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<tr>
<td>3</td>
<td>J. A. Winn</td>
<td>Albany</td>
</tr>
<tr>
<td></td>
<td>S. P. Linn</td>
<td>Rt. 4, Box 535, Albany</td>
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<tr>
<td>4</td>
<td>Eugene MacCarthy</td>
<td>Salem</td>
</tr>
<tr>
<td></td>
<td>Gordon F. Hadley</td>
<td>Independence</td>
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<tr>
<td>5</td>
<td>Herman Goschie</td>
<td>Silverton</td>
</tr>
<tr>
<td></td>
<td>Alfred Von Flue</td>
<td>Rt. 3, Silverton</td>
</tr>
<tr>
<td>6</td>
<td>Ray Kerr</td>
<td>Salem</td>
</tr>
<tr>
<td></td>
<td>Homer L. Goulet, Jr.</td>
<td>Rt. 2, Box 213, Salem</td>
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<tr>
<td>7</td>
<td>Ray Obendorff</td>
<td>Rt. 1, Parma, Idaho</td>
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<td>V. O. Kelley</td>
<td>Ontario</td>
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<td>Joseph Serres</td>
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</tr>
<tr>
<td></td>
<td>(no alternate)</td>
<td>Hermiston</td>
</tr>
<tr>
<td>12</td>
<td>Harvey Kaser</td>
<td>Rt. 2, Oregon City</td>
</tr>
<tr>
<td></td>
<td>Horace Eldredge</td>
<td></td>
</tr>
</tbody>
</table>

Eugene MacCarthy was chosen Chairman and Herman Goschie, Secretary.

Hugh J. Chrisman, Salem, is Oregon-Idaho Field Supervisor of the Hop Control Board and Representative of the U.S. Hop Growers Association.

BOARD OF DIRECTORS

The members of the U.S. Hop Growers Association recently elected the following hop growers to serve as Directors for the 1950-51 fiscal year:

R. E. Oehlman, Sebastopol and E. T. Rooney, Sacramento, California.
Ray Glatt, Woodburn and Ray Kerr, Salem, Oregon.

The Board, at a meeting held in Portland in late March, elected Warren Brown, Ukiah, California to serve as the seventh Director.

COMMODITY COMMITTEES

County Agricultural Planning Councils, or their equivalent, have established a number of commodity committees.

Commodity committees or sub-committees dealing with hops are operative in three hop-growing counties: Josephine, Marion and Polk.
HOP CONTROL BOARD

The OREGON JOURNAL, issue of March 26, 1950 carried the following item of interest, "Oregon Men Selected to Hop Control Board."

"The U.S. department of agriculture has announced the selection of 18 members and their alternates to serve on the hop control board which will administer the federal marketing agreement and order regulating the handling of hops and hop products produced in Oregon, California, Washington and Idaho.

"Grower members selected for Oregon and Idaho and alternates are Dean H. Walker, Independence, and W. H. Anderson (alternate), Eugene; Ray J. Glatt, Woodburn, and Ben Hull, Grants Pass; Harvey Kaser, Hermiston, and Herman Goschie, Silverton.

"Grower members selected from California and their respective alternates are Tom Tanner, Sloughhouse, and P. M. Rooney, Sacramento; Earle W. Peterson and I. D. Wood, both of Santa Rosa; Warren L. Brown and G. Everett Dutton, both of Ukiah.

"Grower members selected from Washington and alternates are Edward M. Schott, Selah, and W. H. Hill, Jr., Yakima; Shirley Ward, Yakima, and Victor Belaire, Moxee City, and George Norman, Yakima.

"The member and alternate selected to represent grower-dealers having their principal office within the four-state area are Ralph E. Williams, Jr., Portland, and E. Clemens Horst, Jr., San Francisco.

"The member and alternate selected to represent grower-dealers having their principal office outside the four-state area are: John I. Haas and Frederick J. Haas both of Washington, D. C.

"Dealer members selected, and alternates, are Ludwig S. Lyon, New York, and Leon Joseph, San Francisco; Robert Oppenheim and George Segal, Ferdinand G. Schlesinger and Franz B. King, all of New York.


Board members and their alternates will serve for two years, commencing April 1, 1950.

HOP GROWERS ELECT

The annual meeting of the Independence Hop Growers was held on March 6. Thirty-five growers were present from the Albany, Dallas and Independence districts.

The following directors were elected:


Officers elected were:  H. H. Withrow, Chairman; Gail Prather, Vice-Chairman; R. M. Walker, Secretary-Treasurer.  Dean C. Omans continues as Manager.

-3-
HOP INSPECTORS MEET

The annual Federal-State Hop Inspectors' Meeting was held in San Francisco, California April 6 and 7, 1950. Attendance totaled twenty-five representatives of the U. S. Department of Agriculture and the State Departments of Agriculture of California, Idaho, Oregon and Washington. J. E. Barr, Chief, Inspection Division, Grain Branch, P.M.A., U.S.D.A. participated in the discussions.

In addition to inspection service personnel, program participants included Messrs. G. Alderton and F. B. Stitt, representing the Western Regional Research Laboratory, Albany, California; D. E. Bullis and G. R. Hoerner, representing the Oregon Experiment Station and Extension Service, respectively; E.L. Markell and P. T. Rowell, representing the U.S. Hop Growers Association and the Hop Control Board.

Mrs. A. T. Walker directed a demonstration of sampling, inspection, certification, and accounting procedure by the California State Hop Inspection Laboratory. It is hoped that a similar demonstration can be staged at the International Brewing Industries Exposition scheduled for Philadelphia, October 3 to 6, 1950.

An inspection tour of the Rainier Brewery was arranged. Rainier uses California seedless hops only, produced on their own ranch!

Vern Wolcott and his cohorts merit special mention for their work in making the meetings well worth while by day and definitely delightful by night!

HOP RESEARCH

An extract from the ANNUAL REPORT of the New Zealand Department of Scientific and Industrial Research, 1949 indicates the program the joint responsibility of the Department and Cawthron Institute. A. S. Nash was appointed Director of the Hop Research Station by the Hop Research Committee early in 1949 and sent to England and Czechoslovakia for observation and study of hop production problems. Disease-free cuttings of new varieties developed at Wye were obtained and planted in an isolated area. Aerial surveys of New Zealand hop gardens have been made.

Following a visit to Tasmania preliminary hop drying experiments were carried out at the Dominion Laboratory, Wellington, by the Chemical Engineering Section.

A disease survey of hop gardens revealed the presence of root-rot (Phytophthora sp.), canker (Gibberella sp., Fusarium sp.) and symptoms suggestive of mosaic or nettlehead.

"Gardens seriously affected with root disease were located on soils of heavier texture, with poor drainage, or on sandy soils with a somewhat high water-table."

Chloropicrin and D-D are being examined as possible chemicals for sterilizing infected soils. Chemical treatment of hop cuttings previous to planting is being tried as is crown disinfection of hop plants previous to pruning.

Tasmanian hop cuttings of Kent Golding, White Bine and Lates were planted in an isolated area to avoid the possible introduction of virus diseases.
NOTES FROM ABROAD

THE BREWERS' JOURNAL AND HOP AND MALT TRADES' REVIEW, issue of February 15, 1950 carried the following items of interest:

Australia: Beer production in 1949 was increased due, in part, to importation of English hops.

Brazil: "Hop consumption in Brazil in 1948 is estimated to have been 640 tons, an increase of 3 per cent above the 1945-48 average. The entire supply of hops used in Brazil must be imported. The United States supplied the bulk--83 per cent in 1948, 93 per cent in 1947, and 97 per cent in 1946.

"In 1947, the first year since the war that hops were readily available, the largest brewing concerns overestimated requirements, and heavy deliveries of hops were made. This resulted in a carry-over of about 130 tons from 1947 imports into 1948, beer production being average for that year. As a result of the practice of receiving over 50 per cent of the total yearly requirements of hops at the turn of the New Year, official statistics may be confusing when comparison is made of one particular year with another. Imports of hops in 1949 are estimated at 575 tons. By 1950, with proposed expanded brewing facilities, beer production is expected to rise about 15 per cent over 1949, and hops import requirements will be 650 tons.

"In Brazil, hops are used in a concentration of about 160 to 165 grams per hectolitre of beer. This figure varies from one locality to another, depending on preference; in Sao Paulo, more hops are used per hectolitre than in Rio de Janeiro. Brewers have had to depart from the use of the average of 160 grams per hectolitre because of difficulty in the past of obtaining adequate supplies of hops, due to price variations; in 1943, for example, the national average was only 117 grams per hectolitre.

"In 1948, hop imports amounted to 530 tons, of which 462 came from the U.S.A., and 68 from European countries. In the first quarter of 1949, about 344 tons were imported, of which 324 were from the U.S.A. and 20 from Europe.

"Although the proportion of hops imported from the U.S.A. has declined, Trade sources say that there will be a continued heavy demand for U.S. hops, because of lower prices and because they arrive in better condition than those from Czechoslovakia. Regardless of the arrival factor, however, local brewers state that it takes 10 per cent less Czechoslovak hops than U.S. hops, by weight, to obtain the same effect. An official of one plant stated that hops from Czechoslovakia contain less seed and are more concentrated in protein. This factor is expected to influence the sources of supply for Brazil if prices reach a competitive level.

"Dollar exchange was granted for hop importation in 1949, with a delay in remittances of approximately seven months. Decree law 153, effective July 1st, 1949, superseding all previous import regulations, listed hops as being among the items for which import licences would be accepted. Trade sources expect no unusual difficulties in continued imports."

France: "The French brewers are dissatisfied with the constant decrease of Czechoslovak hop supplies. Their journal BRASSERIE, writes in this connection:

"'Are we to suppose that our purchases in 1950 will be reduced to mere samples? Everything has been done to obtain supplementary quantities, and the Czechoslovak Hop Export Society has alleged that the harvest was deficient, that the Czech brewers' hop consumption was on the increase, and that the
quotas of all countries had been reduced. As to the latter point, we do believe that reductions have been applied to other countries, but we suppose that they were nowhere as big as here (from 590 to 126 tons). We purposely publish in this issue the text of what Mr. Bitterman said. According to this the Czechoslovak Hop Export Society does its best to maintain the reputation of Czech hops abroad, but we are, for the time being, probably not among the buyers who offer an interest to Czechoslovakia."

Portugal: "Hops are grown in Portugal on a commercial basis. Consumption of hops by the four active breweries in Portugal was approximately 43 metric tons in 1949, as compared with estimates of 48 tons for 1948 and 43 tons for 1947. A total of 41 tons came from the U.S.A. in 1948, as compared with 56 tons in 1947 and 47.7 tons in 1946. Other imports in 1948 were 1.1 tons from Germany and 0.9 ton from Czechoslovakia. Pre-war imports of hops were mainly from Belgium, Germany, Czechoslovakia and Jugoslavia. Hungary occupied the first place in some of the war years. The U.S.A. entered the market in 1942 and continued to retain its dominant position through 1948.

"According to the director of the Lisbon company, which operates three breweries and has a sales agreement with the fourth, stocks of hops in June, 1949, were approximately 30 tons, which was considered sufficient for consumption during the next six months. In view of the large stocks, he stated that his company would be in the market for only about 25 tons in 1949.

"The principal company received word from Czechoslovakia that that country is disposed to supply hops to Portugal on a barter basis, and the Portuguese authorities would probably approve such a transaction. It is possible that the Portuguese Government will not grant import permits for U.S. hops if supplies can be obtained from Czechoslovakia on a compensation basis."

ENGLISH ESTIMATES

From the above source we obtained the following figures:

Statement of total production of hops of the 1949 crop and acreage as at June 4th, 1949, based on the information available to the Hops Marketing Board:

<table>
<thead>
<tr>
<th>District</th>
<th>Acreage</th>
<th>Production Cwt.</th>
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</thead>
<tbody>
<tr>
<td>Kent: East</td>
<td>2,630</td>
<td>35,692</td>
</tr>
<tr>
<td>Mid</td>
<td>3,086</td>
<td>36,121</td>
</tr>
<tr>
<td>Weald</td>
<td>6,633</td>
<td>77,365</td>
</tr>
<tr>
<td>Hants</td>
<td>677</td>
<td>7,853</td>
</tr>
<tr>
<td>Surrey</td>
<td>114</td>
<td>1,402</td>
</tr>
<tr>
<td>Sussex</td>
<td>2,167</td>
<td>22,991</td>
</tr>
<tr>
<td>Hereford</td>
<td>4,666</td>
<td>46,583</td>
</tr>
<tr>
<td>Worcester</td>
<td>2,168</td>
<td>21,493</td>
</tr>
<tr>
<td>Other Counties</td>
<td>55</td>
<td>702</td>
</tr>
<tr>
<td>total</td>
<td>22,196</td>
<td>250,202</td>
</tr>
</tbody>
</table>
HOPS AGREEMENT

The above publication carried the full text, too lengthy for inclusion here, of the new Agreement between the Brewers' Society and the Hops Marketing Board which will cover the seven crops 1950-1956.

CREDITS CO-OP

BREWER AND DISPENSER, issue of April, 1950, carried the following account: "Lesh Credits Hop Group for Boosting Washington to Top."

"H.A. Lesh, president and manager of the Washington State Hop Producers association, states that the association is a cooperative marketing group composed of about half of the 400 hop producers in the Yakima, Wash., area. Mr. Lesh states that in the 12 years the association has been in operation, Washington has raised itself from a poor third to first in hop production.

"Prior to 1938 Oregon stood first, California second, and Washington third with about 20,000 bales of hops per year. Oregon at that time produced about twice as much as Washington. Washington is now producing about 120,000 bales, on about 13,000 acres, and about a third more than Oregon, Mr. Lesh said."

"Washington production virtually means the Yakima valley, because the Yakima area, which extends from the Wenatchee to Prosser, produces about 98 per cent of the Washington output. As a Yakima crop, hops rank second only to apples, squeezing out all the soft fruits and other farm products."

"The marked increase in production is attributed to the improved varieties, and acceptance by the trade of the type produced by valley growers."

FERTILIZER TRIALS

Identical layouts have been used in establishing fertilizer trials in commercial hopyards in Josephine, Malheur, Marion and Polk counties. Similar experimental areas have also been established at Ukiah, California, Corvallis, Oregon and Prosser, Washington. Each trial consists of twelve plots of 5 hills each, replicated 4 times. Four levels of ammonium nitrate and two of treble superphosphate alone, and in all possible combinations, are represented. The amounts of ammonium nitrate range from 0 to 492.4 pounds and the treble superphosphate from 0 to 166.6 pounds per acre. Each separate 5-hill plot will be hand picked and green weights obtained; dry-down will be determined and chemical analyses run.

HOP BITTERS

WALLERSTEIN COMMUNICATIONS for March, 1950 carried an interesting article by Evald Sandegren entitled, "The Bitter Substances in Hops in the Production of Beer."

The above publication also carried abstracts of the following articles of interest.


3. "The Nutrition of the Hop Crop." A. H. Burgess. J. INC. BREWERS' GUILD 35, No. 11:316-352 (1949). "Hops require mainly potassium, phosphorus, and nitrogen, also calcium and magnesium. There is some indication that they are more susceptible to a deficiency of potassium than of phosphorus."


5. "Two New 'Hops Resistant to Verticillium Wilt." E. S. Salmon. J. INST. BREWING 55, No. 4:234-236 (1949). "Keyworth's Midseason (OR55) and Keyworth's Early (PJ47) are moderately resistant to Verticillium wilt and immune from the effects of mosaic disease, as they carry the virus without being affected in any way. They are, however, more susceptible to downy mildew than Fuggle hops."


ARRESTING ABSTRACTS

The JOURNAL OF THE INSTITUTE OF BREWING for January-February, 1950 carried the following articles of interest:

1. As part of the Institute of Brewing Research Scheme there appeared, "Thirty-Second Report on the Trial of New Varieties of Hops--1948" by E. S. Salmon.

"Many of the new varieties, in common with English hops in general gave lower P.V. in 1948 than in 1947, but there were some exceptions; some examples were also found of new varieties giving higher resins content when grown as commercial varieties than they did at East Malling, and district variations also occur. The variety OR48 gave 11.27 per cent a-acid and 11.45 per cent b-resins, but its yield has so far been too small for commercial cultivation. Two varieties resistant to Verticillium wilt are described. Brewing trials with selected new varieties have given very promising results in a number of cases, improved beer stability and the possibility of a reduced hop rate being noted. Cropping data are provided for the varieties tested."

2. "The Season's Hops 1949" by F. N. Richardson.

"Though yield is lower than usual as a consequence of drought, some good hops have been produced, especially among the Goldings, and the quantity available should be adequate. The use of systemic insecticidal washes is noted and advantages and disadvantages of mechanical pickers are discussed. Other topics dealt with include the jute position, extra compression, warehouse accommodation, and the possibility of developing an export trade in hops."
Current criticism of the accomplishments of the Hop Marketing Agreement and Order seem to stem from an ill-advised or misinformed minority. The men from Moxee who hummed their "hymn of hate" at Mt. Angel recently plan to sing the same song in California and Idaho. They represent a state in which voluntary acreage increases are alarming, in face of certain surplus. Washington growers elected to harvest heavily of "hot" hops which, in view of recent brewer requests for the release for sale of 10,000 additional bales, apparently burns them up!

Small-brewer late-season buys of 95-cent domestic hops were not typical of the offerings of some of the larger dealers. The Hop Control Board was adroit in denying the brewers' requests. Any such release would have been pro-rated among all growers, both large and small. Certificate transactions would probably have predominated with but minor monetary benefit to most individual growers. Furthermore, such release could not have been effected until so close to the oncoming 1950 harvest that it might have necessitated a higher percentage of unsaleable quotas of the current crop than were deemed desirable in 1949!

The malcontents from Moxee want to ditch the Agreement, it has been reported, unless it can be amended to eliminate a number of real, or fancied, shortcomings. It is claimed 97 per cent of Washington growers have signed their petitions asking for a hearing. It is proposed to circulate similar petitions in other Pacific coast hop-growing states.

Let's face the facts! In 1948 the average price per pound received by Oregon growers was 49 cents. The Marketing Agreement became effective on July 1, 1949. The average price per pound received by Oregon growers in 1949 was 53 cents. The bulk of the 1950 crop on the Pacific coast has already been contracted at an average grower price of 57.5 cents per pound. Parity rests at 66.5 cents per pound. Abandonment of the Marketing Agreement will, in my humble opinion, result in the abandonment of a considerable acreage of hops by the smaller growers!

Real wrongs, of course, should be righted. Hop growers, however, might well consider Hamlet's soliloquy, "The undiscovered country from whose bourn no traveller returns, puzzles the will, and makes us rather bear those ills we have than to fly to others that we know not of." To do otherwise would indeed be penny wise, pound foolish!

A JEST FOR JUNE

"Most folks welcome something for nothing—unless it's advice."
MOXEE MEN MAD

Items in the YAKIMA HERALD under dates of April 23, May 2 and May 4, 1950 were captioned "Smaller Moxee Hop Growers Dissatisfied with Mart Plan", "Moxee to Talk Hop Marketing", and "Committee to Study Hop Marketing Plan."

The YAKIMA REPUBLIC for April 26, 1950, under the heading, "Hop Marketing" summarized the Farm Bureau-sponsored furor as follows:

"There appears to be a growing feeling among some Moxee growers that the hop marketing agreement now in effect is not accomplishing what it should and that it is working a hardship on smaller growers.

"It is asserted by some of these growers that the agreement has failed to limit importations of foreign hops, it has failed to control acreage, and alleged injustices prevent small growers from making any profit on hops.

"They hold that growers with less than 30 acres should not have come under the agreement. Small growers, they say, have been left with 23 per cent of their last year's crop on hand, the portion from which they should make their living.

"Large growers, it is felt, are in a better position to take chances with their greater production.

"An industry magazine states that a scramble has developed for every certified bale left in the hands of growers, creating the illusion of a hop shortage when there are ample supplies on hand.

"New hop plantings in the valley have been estimated at 800 to 1,600 acres for this season.

"Other representatives of the hop industry in the valley feel that the marketing agreement has accomplished its purpose."

Your Editor definitely agrees with the last sentence of the above quotation. The sole purpose of the Hop Marketing Agreement and Order was to hold supply and demand in reasonable balance to enable all growers to obtain a reasonable price for the saleable allotment which was allowed all growers, including grower-dealers and grower-brewers.

PRODUCERS PROGRESSING

The MOUNT ANGEL NEWS for March 23, 1950 reported, "Building to House Hop Picking Machine Completed."

"The building to house the stationary hop picking machine of the Oregon Hop Producers, Inc. is nearly completed. The structure is of aluminum and is 24 ft. by 70 ft. and 24 ft. high.

"The installation of the picking machine will get under way shortly and will definitely be ready for the harvesting of this year's crop.

"The foundation for their office building has been poured and will also be completed this summer.

"The buildings are located just north of the city limits on the Silverton-Woodburn highway."
WORKERS WANE

The YAKIMA REPUBLIC of May 2, 1950 carried an interesting item quoted herewith, in full: "Hop Worker Influx Drops 75 Per Cent in Moxee Area."

"The population in Moxee and the surrounding territory served by the Moxee post office has increased about 250 since hop work started this year, George Cartier, postmaster, said.

"He said this is a considerable drop from the 1930s, because tractors and other machines have been added to the hopyard equipment as labor-savers. He said before the machines went into use the influx into Moxee and near-by hoplands would be at least 1,000 at this time of year.

"But the biggest decline in workers, Cartier said, is in the fall. In the mid-'30s the additional autumn population in the area served by the Moxee post office often reached 10,000 to 15,000 but since the addition of machines only about 1,000 to 1,200 added workers are now needed for the harvest."

DISTANCE LENDS ENCHANTMENT

The YAKIMA REPUBLIC for March 25, 1950 carried farm labor story with an unusual slant, "Hop Harvest Looks Golden in Arkansas."

"Hop picking appears as lucrative as gold mining to an Arkansas resident who wrote Sheriff Bert Guns for information.

"'Last year we met some people who went to Yakima and picked hops and made enough so they came back and bought them a little home,' the Arkansas woman writes, explaining that her husband is crippled and they are seeking to better their condition. 'If we could make any money picking hops it would mean a lot to us,' she adds.

"'When does the hop harvest begin and how much does it pay?' The woman inquired, enclosing a $1 bill and a dime for a map of the state and detailed information.

"Sheriff Guns is returning the money with a map of the state and an explanation that most of the hop picking in this state is now done by machine."

FIESTA DATES FIXED

The OREGONIAN of May 8, 1950 carried an account which is quoted, in part, herewith: "Hop Festival Dates Named."

"The Hop Fiesta will be held on August 2, 3, 4, and 5 this year in Independence Hop Bowl, according to an announcement made by Harry Day, general chairman.

"The event, which has been held in the past during the latter part of August, between the harvesting of the early and late hop crop was advanced to an earlier date so as not to attract workers from the harvest fields."

MATERIAL FOR MITES

DOWN TO EARTH, summer issue, 1950 carried an interesting article by Thomas Armstrong, "A Laboratory Study on the Toxicity of Para-Chlorophenyl Para-chlorobenzenesulphonate to Mites." The two-spotted mite, a serious pest of hops, is mentioned.
AERIAL PEST CONTROL

From the THIRTIETH ANNUAL REPORT of the California State Department of Agriculture the following abstract is of interest:

"The importance of the airplane in California in applying insecticides and in other agricultural usage is evidenced by the 2,117,006 acres reported covered during 1949. This is a 150 per cent increase over the 844,000 acres recorded the preceding year. In all, 21 basic materials as such, or in varying combinations of one or more, were applied by plane as dusts or sprays to 71 crops in the control of 48 species of plant pests. Most of these applications were directed against lygus bugs on seed crops and against aphids and mites on cotton and other field crops. Prominent among the materials so applied were DDT, nicotine sulphate, sulphur and chlordane, either as such or in various combinations."

A total of 4,540 acres of hops were treated by airplane for pest control.

"The Pacific mite, Tetraphychus pacificus, was severe in some hop fields in Sacramento County, especially in May and June. Vapor sprays of TEPP were used over much of the infested area. Control was not always satisfactory. Parathion was used on a commercial experimental basis on a small area."

TIBIA TROUBLE

OREGON STATESMAN of May 4, 1950 carried an important item quoted, in full, herewith: "Lack of Toilets Blamed in Damage Suit."

"Laura Ertelt, 13, of Mt. Angel, filed a $5,000 suit against the Andrew Leleck hop yard Wednesday alleging the hop yard was negligent in not providing sanitary facilities.

"The complaint was lodged in Marion county circuit court by the girl's father, Carl Ertelt. Leleck is charged in the complaint with failing to comply with the Oregon wage and hour commission's sanitary law, with not providing women's toilets of any kind and forcing employees to improvise toilet facilities without regard to their personal safety.

"According to the complaint the girl, while employed at the yard Sept. 1, 1948, was 'forced to improvise' facilities in a 'brushy place' and took a tumble 'fracturing the epiphysis of the left tibia.'"

"This, said the complaint, caused her physical pain and mental anguish and permanent injuries. The $5,000 is sought for physician and hospital fees."

OLD ONES FOR OVERSEAS

The MOUNT ANGEL NEWS for March 23 carried the following item of interest, "Carload of Hops Leave Here for Germany."

"A car of hops was loaded at the Fred Schwab Commission Co. from where it will go to New York to be loaded aboard ship for Rastach, Germany. The hops are from the 1948 crop."

"On the same day another car was loaded for South America via Mexico. This is the second car of hops of the 1949 crop to go to South American countries."
HOPS IN BREWING

BREWERS' JOURNAL for March 1950 ran an interesting article by W. Kleber on "Modern Hop Boiling", a translation by Oskar S. Scholz from the August 1948 issue of BRAUWISSENSCHAFT.

The article deals in considerable detail with the chemistry of hops.

NOTES FROM ABROAD

THE BREWERS' JOURNAL AND HOP AND MALT TRADES' REVIEW FOR March 15, 1950 carried the following account:

Australia: "It is reported that failure of the Tasmanian hop crop may affect the Australian supply of beer unless the Federal Government is prepared to allow the importation of hops from hard-currency areas. Tasmania, which normally supplies 93 per cent of Australia's hop requirements, this year has only sufficient for her own needs."

France: "The French brewers complain that never since the beginning of the last war have hop imports been so difficult as they are at present. In spite of all efforts of the different Trade organizations, it has not been possible, as yet, to cover the entire hop requirements of the brewers.

"There are several reasons for this insufficient hop supply. First, the mediocre harvest in France in 1949, due to unfavourable climatic conditions. Moreover, the area of the hop plantations, though increasing slowly, is still considerably smaller than pre-war. Other difficulties arise through the high and still increasing hop prices, especially in Western Germany and, in a lesser degree, in Belgium. So far, according to different agreements, France is to obtain from abroad 579 metric tons of hops, of which 129 m.t. will come from Czechoslovakia, 300 from Western Germany and 80 from Belgium.

"The last French hop harvest amounts to approximately 1,100 tons, as against 1,400 tons in 1948. Thus, the French breweries should be able to dispose of 1,679 tons, but they need nearly 2,000 tons; a gap of some 321 tons is therefore to be filled. It would be easy to get this quantity from the U.S.A., but dollars are not available for this purpose. Another solution will have to be found."

Switzerland: "The Swiss Brewers' Association in Zurich estimates the annual consumption of hops at 320 metric tons. Import of hops in 1948 amounted to about 378 m.t. In the first six months of 1949, imports totalled approximately 32 tons, as against 118 during the corresponding period of 1948.

"Germany and Czechoslovakia continue to be Switzerland's main suppliers of hops. Orders placed for 1949 crops by Swiss importers, including breweries which import directly, totalled approximately 119 m.t. from Germany, 180 m.t. from Czechoslovakia and not more than 5 m.t. from Jugoslavia."

Venezuela: "Venezuela, according to U.S. Department of Commerce sources, is a fair market for U.S. hops, inasmuch as none are grown there. Of Venezuela's total imports of hops in 1947, 1948 and 1949, the U.S.A. supplied 80,103 and 42 metric tons respectively, according to Department of Commerce statistics. It may be assumed that under current conditions Venezuela will need to import from 200 to 250 metric tons of hops annually for the next several years. The latest import figures supplied by the Venezuelan Statistical Service are for 1947. In that year about 201 m.t. of hops valued at 360,972 U.S. dollars were imported."
"Over the period 1942-47 inclusive, each litre of beer produced in Venezuela required 3.45 grams of hops. Using this ratio to estimate 1943 imports a figure of 199 m.t. is determined. However, since the 1942-47 period includes the war years of scarcity, a better estimate could be made by using the ratio for the years 1946 and 1947. This is 4.04 grams of hops per litre of beer or 233 m.t."

MISSING HILL SURVEY

A. I. Dow, Agronomist at the Irrigation Experiment Station, Prosser, Washington, recently released the following information, "1950 Survey of Winter Damage on Hops."

"Because of extremely low temperatures during the winter of 1949-1950 and the resultant damage to fruit crops, a survey of possible winter damage to hops seemed desirable. Estimates were obtained relative to the number of missing hills from a random sample of 23 hop yards in the Lower Yakima Valley, April 17 to 21, 1950. The range of per cent missing hills was from 0 to 55 in Early Clusters with an average of 7.3. In Late Clusters the range was from 0 to 13 with an average of 3.2.

"Most of the yards contained not more than what is considered a "normal" per cent of missing hills. With 5% being arbitrarily chosen as the maximum for per cent missing hills which can be considered normal, there were 35% of the Early Cluster yards which contained more than the normal number of missing hills. Of these the average per cent missing hills was 17.9. In the Lates 20% of the yards contained more than 5% missing hills, and of these the average per cent missing hills was 10.3.

"It was apparent that the excellent snow cover during the period of low temperatures in January, 1950 prevented extensive penetration of frost into hop soils of the Yakima Valley. It was observed that hop cover crops of Austrian Winter peas, normally rather susceptible to severe winter conditions came through the low temperatures of 1950 in excellent condition, presumably because of the snow cover.

"In the table below are shown the figures obtained on the survey:

<table>
<thead>
<tr>
<th></th>
<th>Early Clusters</th>
<th>Late Clusters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent missing hills, range</td>
<td>0 to 55</td>
<td>0 to 13</td>
</tr>
<tr>
<td>Percent of missing hills, average</td>
<td>7.3</td>
<td>3.2</td>
</tr>
<tr>
<td>Percent of yards with more than 5% missing hills</td>
<td>35</td>
<td>20</td>
</tr>
<tr>
<td>Average percent hills in those yards containing more than 5% missing hills</td>
<td>17.9</td>
<td>10.3</td>
</tr>
</tbody>
</table>

OFAR CIRCULAR

The most comprehensive statistical reports on the hop industry, both foreign and domestic, that find their way into my files are the FOREIGN AGRICULTURAL CIRCULARs issued by the Office of Foreign Agricultural Relations, U. S. Department of Agriculture, Washington, D. C.

The 25-page circular, issued May 5, 1950 was entitled, "World's 1949 Hops Crop Lower than Estimated Last Fall." An adequate abstract is out of the question in these pages. Readers of THE HOP PRESS are advised to secure a copy of the circular for permanent reference.
RUSHING THE SEASON

Come hop harvest time we have a habit of expecting disaster to befall a certain number of hop driers. May, however, is a bit early!

The OREGON STATESMAN for May 11, 1950 carried the following Dallas item, "Classen Hop Drier Burns."

"A hop drier on the Henry Classen farm, six miles north of here in the Salt Creek district, burned to the ground late this afternoon.

"The drier had not been in use for several years and was not insured, the owner stated. There was no estimated made of loss, but neighbors moved to safety some farm machinery.

"Mrs. Classen said that she believed the blaze started from sparks from burning of blackberry brush in a creek bottom about 50 feet from the drier. Power was disrupted by the fire for a short time on Mountain States power lines. Dallas rural fire trucks answered the call but arrived too late."

POLE TREATMENT

The YAKIMA REPUBLIC for April 7, 1950 carried the following account, "Fir Hop Poles."

"Truckloads of long poles destined for use in the hop yards of the valley are seen moving along the highways in increasing numbers these days. They are being used for replacements or in new acreages. Ordinarily creosoted cedar poles are used but a new method for treating fir poles has been developed.

"A hole is bored in the pole just above the ground and the hole then filled with two tablespoonfuls of a mixture of equal parts of arsenic, mercury and salt. This method is based on experiments over a period of 18 years at Oregon State College and appears to have proved successful. E. T. Herron of Sunnyside was one of the first valley growers to use the method. Others are now trying it."

A more recent recommendation, cold-soak with pentachlorophenol was discussed at some length in the December, 1948 issue of THE HOP PRESS.

VERTICILLIUM WILT

THE JOURNAL OF HORTICULTURAL SCIENCE for December, 1948 carried an article entitled, "Verticillium Wilt of the Hop (Humulus lupulus) V. The Influence of Nutrition on the Reaction of the Hop Plant to Infection with Verticillium Albo-atrum" by W. G. Keyworth and E. J. Hewitt.

"A description is given of two experiments extending over four years on the effect of Verticillium albo-atrum on hops growing in sand cultures supplied with various nutrient solutions. The plants were grown under conditions involving both deficiencies and excesses of most of the major elements necessary for plant growth.

"In both experiments nitrogen-deficient plants showed much less severe symptoms than those grown in complete nutrient. In the first experiment only, deficiencies of phosphorus and potassium (and possibly of magnesium) produced the same effect. Other modifications in the nutrients supplied did not result in any marked alteration in the final symptom status of the plants."
MORE MECHANIZATION

The CAPITAL JOURNAL for March 21, 1950 carried the following item from Independence, "New Hop Picking Machine Arrives."

"A new hop picking machine has been purchased by Gordon Hadley and Gail Prather, from the Dauenhouer Manufacturing company of Santa Rosa, California.

"The new machine will be installed on the Hadley ranch. Work is expected to start by April 1 on the building which will house the picking machine, and the machine is expected to be ready to harvest this year's crop.

"It will have a capacity to pick 30,000 to 40,000 pounds of hops in a 10-hour shift."

LAYERING LORE


"A detailed account is given of three methods of hop propagation by layering, for the guidance of those who wish to raise selected stocks."


"Descriptions are given of two methods of establishing a permanent hop layer bed. One which has been in use for some years possesses certain practical disadvantages, and the other is a modification designed to eliminate these. Notes are given of practical experience with this latter method and the two methods are compared from the points of view of yield of cuttings and suitability for commercial application."

3. From the above source, "II Layering Young Plants" by W. G. Keyworth and Dorothy J. Wilson.

"An account is given of experiments on the layering of the bines on young hop plants grown from sets and cuttings. The effects of various planting and layering distances are described and it is shown that certain of the methods enable the stock to be multiplied from nine to fifteen times per annum. Cuttings which are layered also produce plantable bedded sets and the methods should prove of value in raising varieties or strains of hop in short supply."

HOP CULTIVATION

The JOURNAL OF THE INSTITUTE OF BREWING for January-February, 1915 carried the following article of interest:

"Hop Cultivation" by A. Williamson (CANADIAN BEVERAGE REV., July-Aug., 1949; through BREWER'S DIGEST, Oct., 1949, 49-50).

"Nearly all commercial hops are varieties of Humulus lupulus, but recently the wild North American hop, H. americanus, has been cultivated in that country and in England. The principal English varieties are Fuggles, Goldings and Golding varieties, each with its characteristic valuable qualities and defects."
FRIENDLY FANFARE

In perusing previous preachments presented in these pages, the initiated might infer that I was attempting to "needle" the humble hop grower into nirvana. Frankly, that's a fact!

The job of an Extension Specialist, it has been said, is, "to teach them when they ask it and when they do not ask it." The last half of this simple-sounding assignment is something to conjure! To follow such a course, by roundabout, requires "something" that Solomon had but which somehow seems to have escaped me.

I'd rather be wrong than neutral!

Age has its emoluments, however. Many of my contemporary grower-constituents I consider personal friends. Were it in my power to revive the ancient knightly Order of the Daisy and the Hop which flourished in Holland in medieval times, I could name, off-hand, a hop kiln full of fine folks worthy of charter membership!

Incidentally, I know some lady hop growers who are "lulus"!

As for the children, there are a lot of likely lads, now leaders in the industry, who were knocking about their ancestral acres in knee pants when I first engaged their proud papas in practical palaver. Some of the boys believed me even if some of their dads didn't!

Hop growing is hard work. It's certainly a specialty requiring more than ordinary agricultural acumen. The investment necessary to establish, maintain and operate a hop yard is high. The risk of loss which must be run is great. Possible monetary rewards presently provide sufficient stimulus for inducing several successive generations of hop growers to follow in the footsteps of their forebears.

The youngsters yearn to adopt new and maybe better cultural practices than their fathers followed. They are machinery-minded. They are disease-and pest-conscious. They are avid for advice. Our task is to teach them; fully, frankly and without fear or favor!

As for the "old-timers", shucks! Some of them can still tell the Extension Hop Specialist, among others, a thing or two about growing hops.

A JOB FOR JULY

"Let your light so shine that there will be no reflection on others."
CONTROL BOARD ELECTS

At a meeting in Portland May 22, 1950 all officers were reelected. They are: Dean Walker, Independence, Chairman; Ralph Williams, Portland, Vice-Chairman; William S. Walton, Salem, Treasurer; Paul Rowell, Salem, Managing Agent.

Walker, Williams, and Edward Schott, Selah, Washington are grower representatives on its executive Committee. Other members are Harris Perlstein, Pabst Brewing Company, Chicago, and John I. Haas, dealer, Washington, D. C.

ARGUMENTS FOR AGREEMENT

THE OREGON FARMER, issue of June 1, 1950 carried the following account of timely interest. "Marketing Agreement Worked With Hops."

"When a surplus hop production became apparent a year ago, the hop price was 25 to 30 cents a pound to growers, or about half the cost of production. With continued surplus production last season but with the marketing agreement in effect, the price has averaged more than double the market in the late fall of 1949.

"The present market is, of course, only for the salable quantity, explains Paul T. Rowell, Salem managing agent, hop control board. This represented 76.9 per cent of each grower's 1949 production. However, past experience under surplus conditions has shown that the brewer consumers then took delivery of no more than their needs, even at the disastrously low prices then in effect. Under the marketing agreement and order the consumers are assured that no cut will be made that will prevent them from buying their full need of hops.

"The surplus crop is evenly distributed among growers, and much of this surplus may not even be picked, thereby saving harvest expense on that portion of the crop which would not be salable. Under surplus conditions without an agreement and order, a much larger share of the surplus crop was picked and remained unsold in growers' hands, though not evenly distributed among growers.

"Under the diversion privilege of the hop marketing agreement and order, any grower with hops of unsatisfactory quality may replace these within the limits of his salable allotment, by acquiring so-called "hot" hops of better quality from other growers, under the supervision of the hop control board. About 32,000 bales of such 1949 hops were left unharvested by growers, a large share of which were low quality which were replaced by higher quality hops for brewers' needs. It is generally agreed that the quality of hops thus delivered to brewers from the 1949 crop has been the highest in history. Leaf and stem content was reduced from an average of 6 per cent last year, to an average of less than 4 per cent this season, and other qualities were improved accordingly.

"The marketing agreement and order program cannot do everything growers might like it to do,' Rowell concludes, 'but on a commodity like hops, with a rather flexible demand regardless of price, it has proved very valuable in stabilizing the growers' market at fair prices to both the grower and the consumer.'"

MONEY MAKER

"From the standpoint of value, hops are the most important specialty crop exported. Around ten million pounds shipped out of the country in nine months had a declared value of nearly $7,500,000." The above quotation was abstracted from an item in the NEWBERG GRAPHIC for June 15, 1950, under the heading, "Oregon Hops Crop Most Valued Specialty Export."
PROPER PROCEDURE

The INDEPENDENCE ENTERPRISE, issue of June 16, 1950 carried the following heartening report, "Petition to End Marketing Agreements Under Fire From Hop Growers Group."

"The Oregon-Idaho Hop Growers advisory committee, serving jointly under the hop marketing agreement and for U. S. Hop Growers Association, at a meeting at Salem on Tuesday, June 6, went on record as being opposed to the circulation of any petitions of the type placed before a hop growers' meeting held at Mt. Angel Friday evening.

"The petition proposed termination of the marketing agreement unless several amendments could be made, according to an announcement by Eugene D. MacCarthy of Salem, chairman of the joint committee.

"MacCarthy stated that the committee favored full investigation of any possible legal and workable means whereby restraints might be placed on further plantings of unneeded new hop acreage in all Pacific coast states, but were unanimously opposed to any movement which might jeopardize continuance of the marketing agreement program as a whole with administration on the best basis possible.

"The Oregon-Idaho advisory committee is requesting all possible help by the U. S. Hop Growers Association and by the hop control board in efforts directed toward the acreage problem, according to MacCarthy.

"The Tuesday meeting was attended by hop control board members, by U. S. Hop Growers Association directors, and by growers' advisory committee members and alternates from all Oregon hop producing districts."

SMALL BREWER SQUEEZE

William M. O'Shea, Executive Secretary of the Small Brewer's Association issues a series of very interesting buttetins. The issue of May 23, 1950 reported on the Hop Control Board meeting held in Portland, Oregon, May 22 during which a brewer request for release of 10,000 additional bales of 1949 hops was denied.

The four brewer representatives voted in favor of the request, naturally! The lone grower member who voted for the request was a representative of the Washington State Hop Producers, Inc.!

The U. S. Brewers Foundation and the Small Brewers Association, through their respective General Counsels, "will bring to the attention of the Secretary of Agriculture the facts that a Marketing Agreement which was designed to bring parity prices to growers (around 60 cents) is now resulting in 'speculators' squeezing brewers for prices up to 95 cents per pound."

A BOWL OF CHERRIES

According to the INDEPENDENCE ENTERPRISE, issue of June 16, the Independence "HOP BOWL, INC., will have a delegation marching in the grand parade of the Cherryland Festival in Salem Saturday, June 17."

RABAK RATES

THE WEST COAST BREWER for April 1950 carried an article by Bill Balbach entitled "Dr. Frank Rabak Is Speaker at So. Cal. District Meeting." A recent likeness of "Doc" indicates he has been doing OK since he retired from the U. S. D. A.!
DUST-SPRAY PROGRAM

A suggested dust-spray program for downy mildew control during 1950 of which County Extension Agents in hop-growing counties in Oregon were advised on March 9 is presented herewith:

"DUST, as indicated in Oregon Extension Circular 516 up to June 1. Substitute liquid sprays thereafter, as follows:

<table>
<thead>
<tr>
<th>DATE</th>
<th>MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 1-7</td>
<td>Bordeaux Mixture, 4-3-100 or</td>
</tr>
<tr>
<td></td>
<td>Zinc sulphate-lime, 8-6-100</td>
</tr>
<tr>
<td>June 25-30</td>
<td>Bordeaux Mixture, 6-4-100</td>
</tr>
<tr>
<td>July 6-12</td>
<td>Bordeaux Mixture, 6-4-100</td>
</tr>
<tr>
<td>July 24-31</td>
<td>Bordeaux Mixture, 6-4-100</td>
</tr>
</tbody>
</table>

"Note: (1) Follow the same seasonal pattern of spray application suggested for a dusting program in Oregon Extension Circular 516, (2) use a minimum pressure of 350 to 400 pounds, (3) nozzle disc openings size 1/32" will give better coverage with less material, (4) the use of rosin-potash spreader is advised (See Oregon Station Circular of Information 236), (5) gallons per acre per application—150 to 140, depending on growth of vines.

The dates of application and materials recommended have been used with good results in New York State, and I see no reason why they should not apply under our conditions, with the possible exception that, under conditions favorable for the development and spread of downy mildew, and additional application might be made between June 7 and 25."

AERONOMISTS GATHER

The Western Section, American Society of Agronomy meetings were held at Davis, California June 14 to 16. Hop workers who went included A. I. Dow from Prosser and R. E. Fore and K. R. Keller from Corvallis.

Keller's paper will be available as a reprint from the Journal of the American Society of Agronomy under the title "Relative Efficiency of Rectangular and Tripple Rectangular Lattice Designs Using Hop Uniformity Trial Data."

HOPS FOR ALBERTA

The Provincial Horticultural Station at Brooks, Alberta hopes to have a 5-10 acre experimental hop yard in 1951.

DUSTING CO-OP

RURAL OREGON for July 10, 1950 reports on a Polk County farmers' dusting cooperative. More than 21 thousand acres of Austrian peas and hairy vetch were treated with 213 tons of insecticidal dusts. Ace Flying Service of Salem made the applications.

Such a set-up might be of service to hop growers.
DOWNY MILDEW CONTROL

CALIFORNIA AGRICULTURE for July, 1950 carried an interesting article by C. E. Yarwood entitled, "Downy Mildew Control. New Chemicals Greatly Reduce Damage From Downy Mildew of Leafy Garden Vegetables."

ZINEB spray (zinc ethylene bisdithiocarbamate) is reported the best fungicide yet tried for the control of the downy mildew of hops.

"Field results under epidemic conditions for hop downy mildew were difficult to obtain. The disease was severe in only two of the 15 years of the studies.

"In one test, 0.8% tribasic copper sulfate, 0.6% spergon, and 0.2% zineb were applied May 25th and 30th; and June 4th, 9th, and 14th, 1948 to adjacent single rows of hops 26 hills long.

"On June 14th the untreated vines showed 63% of the trained terminal shoots with systemic infection, 52% of the untrained basal shoots with systemic infection and an average of 312 downy mildew lesions per leaf on the lower leaves.

"The row treated with tribasic copper sulfate showed 4% of trained and 4% of the basal shoots with systemic infection and 38 lesions per leaf. The row treated with spergon showed 7% of the trained and 9% of the basal shoots with systemic infection and 21 lesions per leaf.

"Zineb again gave the best control. The zineb-treated row showed 8% of the trained and 3% of the basal shoots with systemic infection and two lesions per leaf.

"This result was similar to that on all the other tests in the studies in that zineb proved itself the most effective fungicide."

MALHEUR HOPS

THE OREGON FARMER, issue of June 15, 1950 carried an illustrated item of interest, "Grows Hops Under Sunny Skies." Must be "Hop Heaven" for former Willamette Valley growers!

LIVESLEY LIQUIDATES

The CORVALLIS GAZETTE-TIMES, issue of June 8, 1950 carried the following account, "Biggest Hop Ranch Near Salem Is Sold."

"The T. A. Livesley estate's 657-acre Lakebrook hop ranch, believed to be the largest hop ranch in the world, was sold yesterday for $140,000.

"The buyers are O. E. Kurtz and H. C. Robertson, both of the Amity dis- trict. It is located 10 miles north of Salem.

"The new owners said they would raise cannery crops on the place."

HOP QUALITY STUDIES

A 60-page mimeographed report was issued in June 1950 entitled, "Hop Quality Studies 1949 Crop". The work was done by the Oregon Agricultural Experiment Station in cooperation with Grain Branch, Production and Marketing Administration, U. S. D. A. The six authors were: J. D. Sather, D. E. Bullis, D. D. Hill, B. W. Whitlock, and W. T. Wisbeck.
NOTES FROM ABROAD

THE BREWERS' JOURNAL AND HOP AND MALT TRADES' REVIEW for April 19, 1950, carried interesting comments, quoted in part herewith:

Czechoslovakia: "According to a Government decree the Czechoslovak Hop Export Society ceased to exist from April 3rd, 1950. At the same date, its rights and obligations were passed on to the Czechoslovak Maltsters' Society whose name is changed into 'Hop and Malt,' Czechoslovak Society for Hop and Malt Export, Ltd. The seat of this national enterprise is Prague, and capital amounts to 20 million Czech crowns."

France: "As already reported in an earlier communication, French brewers are meeting with difficulties in their hop supplies. The local supplies are not big enough to cover the whole demand and as for imports the main obstacle in their way is lack of foreign currency. But this is not the only complaint of the French brewers: they also resent the high, and in their opinions, exaggerated, hop prices, not only those of imported hops but also of local ones, which seem to be the result of speculative manoeuvres.

"The hop-growers say they are not interested in an exaggerated price increase because it favours purely speculative hop-growing which, in the following years, floods the market with often indifferent hops and provokes a price slump as soon as the harvest is abundant. As during a price boom hops left unsold at the beginning are sold later at a price often much higher than that of the best qualities, all effort to effect an improvement of quality becomes vain. This apology, though theoretically exact, cuts, however, little ice with the brewers who declare quite rightly that given the present economic situation, with its completely broken-down purchasing power of large consumer masses, it is hardly possible to pay 50,000 fr (over 50 pounds) a quintal (approximately 1 cwt.)."

Sweden: "Production of hops in Sweden is insignificant, though attempts are being made to increase production in certain southern areas. Production acreage in 1949 is estimated about 10 hectares (25 acres). A good yield is 900 kilogrammes of dried crop per hectare (about 1.5 tons in green weight). Production in 1948 was about 8 tons. Great interest is being shown in a recently developed variety, 'Svalof 85' and new field trials have been started in Southern Sweden in order to ascertain the commercial possibilities of this variety.

"Imports of hops into Sweden during the year ended June 31st, 1949, amounted to about 375 tons, compared with 264 tons in 1947-48 and an annual average of 259 tons in 1935-38. Czechoslovakia has always been the main supplier of hops to Sweden. In the 1948-49 crop year, 275 tons were obtained from Czechoslovakia, 50 tons from Yugoslavia and 50 tons from Belgium. Consumption of hops has decreased slightly since the pre-war years, caused in part by a decline in the consumption of beer and also by increased economy in the use of hops. Normal stocks represent 1 1/2 to 2 years' supply or 600 to 800 tons. Present stocks are below normal at about 350 tons."

NEW VARIETIES OF HOPS

From the above source, under the heading, "Brewing And Malting Notes," the following comment appeared:

"Although many varieties of English hops in commercial cultivation gave lower P.V.s in 1948 than in 1947, some of the new varieties raised by Professor Salmon were an exception to this general rule. In particular, the variety 0.E. l½ gave, on analysis, 11.27 per cent alpha acid and 11.45 per cent beta resin."
Unfortunately the yield of this variety has not yet been sufficiently great for commercial cultivation to be practicable. In addition to the high P.V. recorded for this variety, in the 'Thirty-second Report on the Trial of New Varieties of Hops' (J. Inst. Brew., 1950, 6), Professor Salmon gives interesting notes on two new varieties, which have proved resistant to Verticillium wilt. These two varieties O.R. 55 and O.J. 47, are both partly of American ancestry, and are described by Dr. Keyworth, in the course of his studies on wilt caused by *V. alboatrum*, 'as moderately resistant to this disease.'

"Both of these varieties are vigorous growers and crop well, a satisfactory planting distance having been found to be 7 ft. square. Both these hops are carriers of the virus of mosaic disease, but are immune from its effects. They are, however, more susceptible to downy mildew than are Fuggles, and in this respect are akin to Goldings and Golding varieties. Both are fairly rich hops, with a P.V. usually higher than that exhibited by most ordinary commercial varieties. In brewing trials these varieties are stated to have been acceptable when used in the proportion of 10 to 30 per cent in blends with other hops (but opinion differs on their suitability for general brewing purposes, at least as far as the present writer has discovered in conversations with brewers and hop merchants)."

**WORLD HOPS CROP ESTIMATED**

The WEEKLY OREGON SPECIALTY CROPS REVIEW, issue of July 3, 1950, prepared by the OSC Extension Service carried the following item: "The prewar (1934-1938) world production of hops was around 131 million pounds, according to USDA estimates. In 1949, the countries that produced 92 percent of its prewar total, the hops crop is now estimated to have been 110 million pounds. This is slightly less than in 1943."

**BRITISH HOPS ACREAGE UNCHANGED**

From the above source we are informed that, "The acreage of hops in the United Kingdom this year is reported at 22,000. This is practically the same as in 1949. The restriction on acreage, in effect since 1940, was removed in May 1950. Growers must still operate under market quotas, however, and are being advised against expansion."

**BLYTHE BY BINES**

The Oregon City ENTERPRISE-COURIER, issue of June 23 carried an interesting photo under the following caption, "English Farmer Learns About Hop Raising In Oregon." An accompanying account is quoted herewith, in part, "Peter James Blythe, already given the nickname of "Pete", is learning by close association the hop-raising angle of Oregon farming at the Otto Lucht farm near Molalla. Blythe is one of four English farm youths spending the summer in this country while four American FFA members are exchanged for a summer in England. Otto Lucht's son, Charles, is one of the four FFA youths now in England."

**DANCERS DID IT**

The YAKIMA HERALD, issue of June 7, 1950, presented an unusual instance of vandalism, "Owner Says Hop Vines Damaged During Night."

"Elmer Close, route 7, Yakima, told Yakima sheriff's officers yesterday that someone had entered his hop yard and cut down about 20 plants Monday night. The cut vines were later found behind a Donald dance hall, Close said."
HALF THE WORLD'S HOPS

The YAKIMA REPUBLIC, issue of May 30, 1950, carried the following item, "Hop Production."

"The United States produces almost as great a hop tonnage as all the rest of the world combined. How this country rates in comparison with the other producing nations is shown in statistics provided by federal-state market information service.

"Last year the United States produced 49,340,000 pounds of dried hops, according to the report.

"Other countries and their crop yields were: United Kingdom, 28,023,000; Germany, (excluding the Russian zone) 12,437,000; Czechoslovakia, 9,612,000; France, 3,549,000; Australia, 2,392,000; and Canada, 2,209,000 pounds, making a total yield outside the United States of 58,222,000."

MOXEE FESTIVAL

According to the YAKIMA REPUBLIC, issue of June 22, 1950, the Moxee Hop Festival, sponsored by the Commercial Club, will open the night of August 11, with a coronation ball for the 1950 Hop Queen. The festival is scheduled for August 12.

Proceeds of the festival will go toward completing the community swimming pool and bathhouse.

NEWLY DEVELOPED DRYER

The SUNNYSIDE SUN, issue of June 15, 1950 carried an interesting illustrated article, "Local Man Inventor of New Hop Dryer. Batch Style May Replace Kilns." A. E. Tanasse has patents pending.

Allen Regimbal of Mabton, Washington will use two of the new six-batch dryers this year.

PICKER IN PLACE

The MOUNT ANGEL NEWS, issue of May 18, 1950 carried the following account, "Co-op Hop Picking Machine Being Installed."

"The installation of the new Regimbal-Thurmer stationary hop picking machine in the new Oregon Hop Producers, Inc., building got underway last week.

"Mr. Fred Thurmer, co-owner of the company in Yakima, Wash., is in charge of the installation, and expects to have the machine assembled the latter part of this week."

PICKING EXPERIMENTAL PLOTS

Agronomic experiments being conducted at the Irrigation Experiment Station, Prosser, Washington present a picking problem. In the hope of solving it, a miniature modification of the Regimbal-Thurmer type picker is in process of erection. It is hoped that construction will be completed in time for use this season. There is also a pressing need for a mechanical harvester for use in connection with the experimental plots located at Corvallis.
TRIUMPHANT TRIUMVIRATE

The field of service of our Agricultural Colleges, like ancient Gaul, is divided into three parts: resident instruction, the Experiment Station and the EXTENSION SERVICE. No part, as Euclid long ago determined, can be greater than the whole. All three functions are, or should be, interdependent if not equally important. Federal, state, and county appropriations, in varying proportion, provide the wherewithal which makes the wheels go 'round.

There is probably little to be learned about hops in the classrooms of the colleges in the five states where hops are grown. Here at Oregon State however, the Farm Crops department offers a specialty crops course, when sufficient demand dictates, which covers production, harvesting, storage, distribution, marketing, and costs of hop production. I know of several sons of hop growers, one at least from out-of-state, who have matriculated at my alma mater primarily for the purpose of enrolling in this particular course. Incidentally, the content of other courses offered by a number of other departments includes subject matter of practical importance to potential hop growers. As examples, I might mention: agricultural economics, agricultural engineering, chemistry, entomology, and plant pathology.

The Oregon Experiment Station has, intermittently, been concerned with hop production problems for fully fifty years. Similar interest has been shown for a like period by some of the other experiment stations in states where hops are still of commercial concern. The U. S. Department of Agriculture, of course, pioneered research to solve some of the important problems of the hop producer.

The relatively recent assignment of a half-time Extension Specialist in hop production is the unique accomplishment of the Oregon Extension Service. An effective extension program in hop production is predicated on the active cooperation of the County Extension Agents in Oregon's twelve hop-growing counties. With resident instruction and experiment station personnel as allies, the County Extension Agent concerned may be merely a catalyst in a chain reaction or he can be, if he so elects, the keystone of an arch of accomplishment in the building of which the Extension Specialist merely brings him the mortar!

The consummation of such a coalition in the interest of Oregon's hop industry should prove to be a truly triumphant triumvirate. Anyhow, it's worth trying!

AN AUGURY FOR AUGUST

"We cannot do everything at once, but we can do something at once."
PROGRAM

HOP GROWERS FIELD DAY

Corvallis, Oregon
August 4, 1950

MORNING

10:00 to 12:00 Demonstrations of Dusting and Spraying Equipment.

NOON

12:00 to 12:30 PICNIC LUNCH.
12:30 to 12:45 Introductions and a Review of the Hop Research Program.
12:45 to 1:15 KOREA. Kline R. Swygard, Professor, Political Science, Oregon State College.

AFTERNOON

1:15 to 1:25 High-Low Fuggles Selections.
1:30 to 1:50 Hop Breeding Block.
1:55 to 2:05 Brewers' Gold and Bullion Crosses.
2:10 to 3:10 Cultural Trials.
3:15 to 4:15 Fertilizer Trials on Beach Hop Yard.

COOPERATORS

Manufacturers and their representatives participating in demonstrations of dusting and spraying equipment.

The Hardie Manufacturing Company. Portland, Oregon
Mr. W. R. Redhead

Jonas Byberg Company. Silverton, Oregon
Mr. Jonas Byberg

Besler Corporation. Emeryville, California
Mr. Ray Teerling

Food Machinery and Chemical Corporation
John Bean Western Division. Portland, Oregon
Mr. H. P. Hill

About fifty folks participated in the above program. The Extension Hop Specialist directed the morning demonstrations. K. R. Keller and R. E. Fore did a fine job of directing the afternoon tours. En route, H. E. Morrison outlined the proposed plan of work with Parathion, made possible by donations by the American Cyanimid Company.

Irving Dow came down from Prosser to attend the Field Day and for conferences with Experiment Station personnel.
HOP APHID CONTROL

Under date of July 7, 1950, Robert Every, Entomology Specialist, and the Hop Specialist prepared a circular letter under the above title for the information of County Extension Agents in hop growing counties. It is reprinted herewith, in part, with the thought that it may be of more general interest.

"Hop growers should be advised that the time to apply aphid control is at hand. Hops are now generally in the burr stage. Aphid migration from prunes to hops appears to be complete. It is important that dust or spray applications be made before aphids have entered the developing hop cones. A good clean-up of the aphid infestation at this time will prevent them from entering the cones and thus avoid mouldy hops at harvest time.

Recommended Control

"Nicotine is the insecticide being recommended for the control of hop aphids. It may be used as:

A. Dust

1. 10 percent nicotine sulphate dust containing 4 percent actual nicotine.

2. A 3 or 4 percent nicotine alkaloid dust.

Both the nicotine sulphate and nicotine alkaloid dusts have given excellent control. Dusts should be applied at the rate of 0 to 1/2 pounds per acre.

B. Spray

Use one pint of 40 percent nicotine sulphate to 100 gallons of water. Apply at the rate of 150 to 400 gallons per acre depending on growth of vines. Apply at a minimum pressure of 350 to 400 pounds. Nozzle disc openings, size number 2 (2/64), will give better coverage with less material. Add to the spray an alkaline soap in a sufficient amount to wet the underside of the hop leaves.

If one of the speed sprayers is used the same amount of actual insecticide per acre as recommended above (about 1/2 pounds actual nicotine per acre) should be used.

Other Insecticides Not Recommended by Oregon State College Experiment Station

"Certain of the organic phosphate materials such as parathion, tetraethyl pyrophosphate and hexaethyl tetraphosphate are being widely used by hop growers for the control of hop aphids and giving satisfactory results. The Oregon State College Experiment Station is not recommending these materials for use by hop growers because of hazards involved."

WAGE BOOST

THE OREGONIAN, issue of July 26, 1950 carried an item of interest from Salem, "Hop Men Boost Harvest Wages. A wage of four cents a pound was fixed for harvesting this year's hop crop at a meeting of growers with William Kimsey, state labor commissioner, Tuesday. The wage is an increase over last year."
BRITISH MISSION

The United Kingdom Hop Growing, Picking, and Productivity Team spent July 16 to 24 in Oregon. They will return for the period August 18 to 23.

Hop growers and dealers, representatives of Federal and State experiment stations and officials of the Hop Control Board and the U. S. Hop Growers Association, Independence Hop Growers and Washington State Hop Producers, Inc. will be contacted before the tour through California, Oregon, Washington, and British Columbia hop-growing centers is concluded. The team arrived in the United States on June 29 and will depart on September 6.

Team personnel comprises: John F. Brown, Team Leader, a member of the Brewers' Society and Hops Marketing Board Joint Committee on Hop Costings, and in charge of Guinness Hop Farms; John M. Brewin, Team Secretary and Agricultural Economist at Wye Agricultural College; Charles J. Gray, agricultural engineer and manager of Guinness Bodium Hop Farm; Captain James Day, a practical hop farmer and a member of the Hops Marketing Board; Samuel R. Allsopp, Chairman, Hops Marketing Board.

While in the United States, the team is touring under the auspices of the Economic Cooperation Administration.

SALABLES SET

THE OREGONIAN, issue of July 23, 1950 carried a timely article which we quote herewith, in brief, "Salable Hops Increase Set, Oregon Man Heads Western Control. The Pacific Coast Hop Control Board will recommend to the Secretary of Agriculture that the salable quantity of 1950 western hops be established at 49,000,000 pounds. This is the equivalent of 245,000 bales, 50,000 bales more than last year."

IDAHO HOPS

THE IDAHO STATESMAN, issue of July 20, 1950 carried the following item, "Idaho Hops Production Increase Continues. "With the acreage increasing every year since 1947, the U. S. department of agriculture Wednesday estimated production of Idaho hops at 1,650,000 pounds."

"Production last year was 1,390,000 pounds. This is the first year size of the crop has been forecast in advance."

HOP RANCH SOLD

The CAPITAL JOURNAL for July 19 carried the following item of interest, "160-Acre Hop Ranch Bought for $185,000. "A 160-acre Willamette bottom-land tract which has been in hop cultivation was reported sold Tuesday in a $185,000 transaction. The former Arch German acreage north of Lakebrook ranch was sold to Raymond Kerr of Salem.

"Sellers of the property were H. L. DeArmond and wife, and R. M. Amrine and wife of Hubbard. The land has been devoted almost exclusively to hop growing, and Kerr, a buyer with S. S. Steiner & Co., hop dealers, has indicated that he will continue the practice. Kerr already owns a 40 acre farm adjoining the new purchase."
TOPPENISH TALKS

The YAKIMA HERALD, issue of July 2, 1950 carried the following interesting item, "Growers Discuss Hop Marketing. Formulation of an amendment to the present marketing agreement was discussed at a hop growers' committee meeting Thursday night at the Bungalo.

"Meeting with the committee was William Broadhead, department of Agriculture, Washington, D. C., who suggested that since the marketing agreement has proved unsatisfactory, the committee should formulate an amendment and present it with a petition to the secretary of agriculture.

"In order to obtain the specified number of signatures of the petition, the committee will contact growers in Salem, Oregon and in central California, Mrs. Laverna Aries, committee member said. When the committee met with the Oregon Hop Growers at Salem in May, the vote was four to one in favor of amending the agreement.

"Other business during the meeting included a request by Chairman William A. Roy, that the hop growers' attorney, Kenneth Hawkins, Yakima, send a written reply to a recent anonymous article appearing in the 'Hopper' entitled 'Have the Moxee Growers Already Forgotten'."

LESH ENLIGHTENS

From the same source as above, under date of July 4 we collected the following comment, "Hop Men Eye Market Plan. Hop growers of the valley are continuing their meetings for the purpose of considering specific changes in amendments to the hop marketing agreement.

"For the most part the growers of this area are protesting some phases of the agreement they consider undesirable, M. A. Lesh, president of Washington State Hop Producers, Inc., said. One of the objections is that to the regulations restricting the marketing quota of hops without also restricting the production or acreage. Proposed adjustments of changes are also under consideration in Oregon and California.

"In the event that the proposals are considered worthy of consideration by the industry, the department of agriculture may schedule hearings next fall or winter when they will be considered in grower and dealer meetings. If there should be sufficient sentiment for them they will be submitted to the growers for a vote. If they fail of support the agreement will continue in operation, unchanged Lesh said."

LICE LICKED

The YAKIMA REPUBLIC, issue of July 3, 1950, carried an item of interest, quoted in part herewith, "Hot Spell May Cut Aphis Infestation. The spell of hot and dry weather should help reduce the amount of aphis infestation in the hop yards of the valley, says M. A. Lesh, president of the Washington State Hop Producers, Inc. and a valley grower.

"The infestation is not general but showed up in several yards during the cool, wet weather, he said. With the change the aphis activity will be reduced and there will be less need for spraying or dusting for control, Lesh pointed out."
According to the WEEKLY SPECIALTY CROPS REVIEW, issue of July 17, 1950, "The U. S. hop crop is expected to be larger than last year. According to the Crop Reporting Service, conditions the first of July promised a total of a little more than 56 million pounds of hops. This is 11 per cent or nearly 5 1/2 million pounds more than produced last year, and around 16 million pounds above the quantity of 1949 hops declared salable under the hop marketing agreement.

"Each of the four producing states of Idaho, Washington, California, and Oregon show prospects for more hops than in 1949. These prospects stem from both larger acreage and better growing conditions. Plantings in the four states have increased by about 900 acres. Most of the increase is in Washington, which now has 13,400 acres compared to 15,000 in Oregon. While yield prospects are much better than last year in all states, they are still below the ten-year average in Washington."

U. S. D. A., Production and Marketing Administration release of July 15, 1950 is reprinted herewith in its entirety, "Hop Research Indicates Value of Whole Cones: A study of various factors which affect the quality of hops emphasizes the need for care in harvesting and handling this crop, as whole cones contain more and better soft resins, the substance which makes hops more desirable for brewing than broken ones. The study of hop quality was recently made by the U. S. Department of Agriculture and the Oregon Agricultural Experiment Station under authority of the Research and Marketing Act.

"Samples representing approximately 1/4 of the hops produced in 1949 were furnished by the Federal-State Inspection Departments of California, Oregon, Washington, and Idaho to the Pacific Coast Headquarters of the Grain Branch, of USDA's Production and Marketing Administration. The 541 samples were tested for various factors of quality. In one of these tests the whole cones were separated from the broken cones, and the alpha and beta resin content of each was determined by the Oregon Station. The alpha and beta resins are the desirable soft resins.

"Lupulin is a fine yellow resinous powder in the hops which contains these resins. When the hop cones are broken during picking and cleaning, part of the lupulin spills out and is lost. Furthermore, something as yet unknown happens to the lupulin that remains in the broken cones which tends to further lower the brewing value.

"The percentage of broken cones varied greatly in different lots. This was true with the hand-picked as well as the machine-picked hops. Many producers have an opportunity of improving the quality of their hop crop by using more care in picking, drying, curing, and baling, which will reduce the loss of lupulin.

"The 1949 crop was found to contain only small percentages of leaf and stems and to be practically free from discoloration and disease. The hops were also low in moisture content. Improvements that have been made on these factors indicate that the quality of the hops can be further improved by reducing the percentages of broken cones."
NEw SUIT

The POLK COUNTY ITENIZER OBS RIVER, Dallas, Oregon, issue of July 13, 1950 carried the following account, "Hop Worker Seeks Damages of $7,770. Damages totaling $7,770 are sought by Nana Delie McLean from the Golden Gate Hop Ranch in a complaint filed July 5 in the office of E. B. Hamilton, county clerk. The plaintiff alleges that she was permanently injured in an accident while working at the ranch on August 30, 1948.

"The complaint states that the accident occurred while the plaintiff was riding on a specially-designed truck, equipped with a crow's nest constructed of metal tubing and other materials. Another workman lifted up the legs of the crow's nest and caused it to fall on her, striking her head, she alleges.

"As a result of the accident, the plaintiff has suffered head and eye injuries, blurring of vision and headaches, she states. Damages of $270 are sought for loss of time and $7,500 is asked as general damages. Rhoten and Rhoten of Salem are attorneys for the plaintiff."

We wonder how many hop growers carry sufficient liability insurance, if any!

WILLIAM AT ORK

THE OREGON JOURNAL, issue of July 20, 1950 carried a picture of William T. Wisbeck, which appeared above the following account, "Hop Research Results Reported. A study of USDA and Oregon State college specialists of various factors affecting quality of hops emphasizes need for care in harvesting and handling this crop. William T. Wisbeck, hop specialist with USDA's Pacific Coast board of grain supervisors, Portland, is shown dividing hop samples to a workable size. This agency furnished Oregon State college hop laboratory with some 541 samples representing around one fourth of Northwest and California-produced hops. College specialists found out that the whole cones contain more and better soft resins—substance making hops more desirable for brewing than broken ones."

LANE LED

The EUGENE REGISTER GUARD, issue of July 23, 1950 contributed to the history of hop culture as follows, "Lane County Hop Yard Has First Yield. Lane County had the distinction of producing the first hop harvest in the state of Oregon.

"In the spring of 1869, George Leasure purchased enough hop plants to set out five acres and put them in fine bottom land in what at that time was a "suburb" of Eugene City. The hops grew well and the harvest that year was the first yield of Oregon hops ever placed on the market.

"The success of Leasure's hop yard demonstrated the ability of Lane County land to grow hops and since that time the hop industry has been a dominant feature of Lane County's agriculture activities.

"Leasure's yard continued to produce for many years, but the great flood of 1891 washed away one corner of his yard and by 1899 only three and one-half acres were left.

"The yard produced 300 pounds of hops to the acre."
HELPING HANDS

The OREGON STATESMAN, issue of July 9, 1950 carried an article of interest quoted herewith in part, "Neighbors Do Work For Ill Hop Rancher. Richard King, Talbot hop grower, is seriously ill at his home. Neighbors have all gone in this week and are trying to finish the work in his hop yard and will complete stripping the vines in a day or two."

A shining example, to be sure, of extra-ordinary neighborliness!

FARMER OF THE WEEK

The Forest Grove NEWS TIMES honored former hop grower Oscar N. Love with a good photo and an interesting article which is quoted herewith, in part, "Half-Century-Old Thatcher Hop Yard Passes From Local Agricultural Scene. As Oscar N. Love says, 'A lot of water has gone under the bridge since he came to Thatcher district in 1906.' His 90 acre place, for instance, no longer includes the late cluster hops that grew there for 42 years.

'Two hop houses remain but Love went out of the business in the spring of 1949. At that time he plowed out what was left of his 35 acres of hops.

'It used to be that hop picking earnings provided the where withal for school supplies for children of many families. Love's yard used to require about 85 pickers each year.

'Now only four yards are left in Washington County out of 30.

'Love named off the Valley View, Nelson, Johnny Buchanan, and James Hayes yards. They're the ones still in existence.

'His annual yield averaged 1,400 pounds of dry hops per acre, compared to 1,000 pounds average throughout Oregon. In a big season, Love's hop houses could handle 13,000 pounds of green hops a day. When he was harvesting 35 acres, his total crop averaged 49,000 pounds of dry hops a year. Picking weight, however, was about 200,000 pounds.

'He had nine acres in hops in 1906 and gradually built up his yard to 35. In 1937, Love took out 19 acres, removed eight more in 1948 and cleaned out the rest in 1949.

'Love recalls that 1941 was the best price year. Hops sold for $1.25 a pound. During 1933, however, 3½ cents was his best offer for that year's crop. Even in that day of low costs, the 3½ cent figure was 13 cents below the cost of production.

'Love has been farming 51 years. He was only 17 when he first went into the hop business with his father."

IRON CURTAIN CROP

The Corvallis GAZETTE-TIMES, issue of August 9, 1950 carried the following facts: "More Yugoslav Hops. A substantial increase in the hop acreage in Yugoslavia was recently reported by the United States agricultural representatives at Belgrade. The acreage in the important Savina valley is reportedly 50 per cent larger than a year ago. The hops made a good growth in early June, but the shortage of rain made production prospects uncertain. Last year, Yugoslavia produced around 1,100 tons of hops from 3,700 acres,"
LET THE EAGLE SCREAM

The Small Brewers Association, "The World's Largest", periodically publishes some pertinent and sensible sales suggestions for its membership. Post-war patronage is something to ponder at this point in our participation in the United Nations' war effort which for some months has been far from frigid!

It is neither my purpose nor my prerogative to presume to present public policy, but if I were clad in khaki crouching in a Korean fox hole and were issued a can of brew built with hops from an "iron curtain" country, I would find it far from cool and refreshing. It would make me boil! I'd remember the brand, too, in case I came home.

American brewers may be helpless to hoist the hopping rate, but they could with clearer consciences and perhaps with appreciable profit to purse, eliminate in ever increasing amount the flair for foreign hops purchased from folks who are not our friends.

The Hop Control Board estimated at San Francisco in July of this year that 1,000,000 pounds of hops would be imported between September 1, 1950 and August 31, 1951. As of September 1, 1950 the salable quantity of American hops was tentatively 8,753,000 pounds short of probable production. Elimination of prospective imports would reduce the American hop producers' "hot" hops by half!

Domestic brewers, it is estimated, will produce 2,852,000,000 gallons of beer from September 1, 1950 to August 31, 1951. Many an American brewer, large or small, might be smart to spend his hop money where it's made. How many barrels, bottles, or cans of his beverage it appears appropriate to inquire, are consumed by the citizens of the foreign countries whose hops he supposes are so superior to our own!

The eager editor of THE HOPPER for August, 1950 hit the nail on the head with his arresting article, "Hops and Patriotism". The American Eagle has been called by the callous, "The National Bird of Prey". It's high time we took off the hood, as far as imported hops are concerned, and let the eagle scream!

A SAYING FOR SEPTEMBER

"Our country right or wrong! When right to be kept right; when wrong to be put right."

September 15, 1950
ANNUAL FIELD DAY

The 1950 Annual Field Day of the Irrigation Experiment Station at Prosser, Washington was held on August 23. R. A. Magee, Assistant Chemist, USDA, and G. R. Hoerner attended. The former arranged a very interesting demonstration and discussed, "A Chemical Evaluation of Hops." The latter presented, "A Review of Hop Research In North America And Hop Diseases." E. C. Klostermeyer, Station Entomologist, discussed hop pest control. A. I. Dow, Assistant Agronomist, USDA reported on hop investigations under his supervision at the station. These include: fertilizer trials, cultural practices, the missing hill problem, selection and cover crops.

AN AGGRESSIVE COMMITTEE

The INDEPENDENCE ENTERPRISE, issue of August 11, 1950 carried the following account, "Hop Growers Select Advertising Group. The board of directors of the Independence Hop Growers met Monday and discussed advertising and labor problems.

"D. F. Kennedy was elected chairman of the 1950 hop advertising committee. Serving with him will be Dean Walker, C. F. Noakes, Melford Hoover, Dr. C. E. Long, LaVern Dalkenberg, and John Martin.

"The advertising committee met Wednesday to form a program for the coming picking season."

Under date of August 22 the committee reported on a newspaper advertising and statewide radio appeal for pickers for the Independence area. A voluntary grower assessment of 25 cents per acre was proposed to finance the two campaigns.

LOOKING BACKWARD

"Ranch Ramblings", an intriguing column in the OREGON STATESMAN, issue of August 3, 1950 contained the following comment, "We are almost wondering if this 4 per cent picking money for hops is a bit of sarcasm. Looking around at a lot of the yards we used to know from the inside out, we find they have been converted to mechanical picking. Many of the growers say it is because 'pickers complained too much.'

"While we haven't picked hops for some years, we recall the time when it was one thing we thought was a lot of fun each year. Picking used to start on our birthday, late in August, and we could scarcely wait for the Sunday when the campers moved in from Oregon City to our own camp shacks along our own creek. A watermelon 'feed' with our pickers (the same ones came year after year) was our idea of a birthday celebration. We can close our eyes and almost smell the creek and the watermelon in the early dusk of a late summer Sunday evening. These modern contraptions likely make for cleaner hops with fewer complaints but—well, there are still a few yards where they'll be picking by hand this fall."

DIVERSION DOINGS

The Oregon City ENTERPRISE-COURIER, issue of August 8, 1950 carried an interesting item which we quote herewith, in part, "North OC Hops Face Plows. There will be no harvesting of hops this summer in the 120-acre yard just north of Oregon City on the east side of McLoughlin boulevard, according to Horace Eldridge, yard operator."

"Eldridge said Monday that he sold his harvesting rights to other growers under the federal hop marketing agreement which effects growers in Oregon, Washington, California, and Idaho."
TALK ABOUT TOUR

The YAKIMA HERALD, issue of August 12, 1950 carried the following account, "Valley Hop Men Report on Tour. A report on their trip to Oregon and California was made by committee members at the hop growers meeting held at the Bungalo Wednesday night. Purpose of the trip was to obtain signatures on a petition requesting amendment of the hop marketing agreement.

"It was noted that the committee was favorably received. One member observed that the growers in marginal yards were in favor of the hop marketing agreement while long time successful growers were against it.

"It was also observed that the 2,000 new acres of planting reported by the hop control board had defeated the purpose of the marketing agreement. Members attending the hop control board meeting in San Francisco felt that the lower cut of 12 1/2 per cent this year was due partly to their efforts.

"Activities concerning the petition will be resumed by the committee immediately following the harvest, Mrs. Laverna Aries said."

BUOYVILLE IN BUSINESS

The YAKIMA REPUBLIC, issue of July 29, 1950 ran the following account, "Youth Farm Invests in Hop Acreage. The purchase of the 140-acre J. F. Moreland ranch by Youth Activities, Inc., was announced yesterday by Gordon Hanson, the corporation's attorney.

"The organization, a non-profit charitable corporation which operates Buoyville for the rehabilitation of boys, has leased the property to Yakima Chief Ranches, Inc., under terms which will insure Buoyville an annual income. The purchase was made possible by the granting of convenient terms by Moreland and the acceptance of a long-term lease by the Yakima Chief ranches.

"This is a major step in Buoyville's financing program,' said Hanson. 'The income will not be sufficient to operate Buoyville, which must still have substantial public support. It will mean, however, that there is a backlog which will insure continued operation. With this certainty of continuance we feel we are now in a position to interest sufficient support to enlarge our facilities.'

"Buoyville, situated on the Naches River, at present has six boys and plans call for a unit to house 16 boys, according to Hanson. Present plans do not contemplate moving Buoyville to the new ranch property, although this may prove to be feasible, said Hanson. The trustees have not discussed this phase of the project, it was pointed out."

DEFOLIANTS

THE AGRICULTURAL SITUATION for August 1950, carried an interesting article entitled, "Progress and Problems Mark the Search for Defoliants." While applying to cotton, the subject is one which may be of eventual interest to hop growers.

Some preliminary and inconclusive experimental work has been done in a search for a successful chemical method of suckering and stripping hops. With the rapid development of mechanical hop harvesting, a means of removing the leaves on vines when ready for picking without injuring the cones would be welcome.

The Pacific Coast Borax Company has supplied three materials for preliminary trial this season at the suggestion of Dean C. Omans, manager of the Independence Hop Growers who was to arrange for field trials. Results will be reported as soon as available.
OREGON HOP PRODUCERS MEET

The MOUNT ANGEL NEWS, issue of August 3, 1950 carried the following account, "Oregon Hop Producers Hold Annual Meeting. The members of the Oregon Hop Producers, Inc., held their annual meeting last week at which time two new directors, Kiliam Smith and Perry Larson, were elected. Fred Lucht was re-elected. Hold over directors are Lelan Woodling, Elmer Palmquist, Dave Scharrer, and Alois Humpert.

"The report showed that the organization now has nearly 40 grower members, and a number of applications for membership on hand to be acted upon.

"At the board organization meeting Fred Lucht was re-elected president; Perry Larson, vice-president; and Mrs. Wm. Burger, secretary-treasurer."
THE BREWERS' SOCIETY

THE BREWERS' JOURNAL AND HOP AND MALT TRADES' REVIEW, issue of May 17, 1950 reported on the monthly meeting of the Council of the Brewers' Society in part as follows: "Export of Hops: The committee had examined the position and were satisfied that, while giving full facilities for the promotion of the export trade in English hops, every precaution was being taken to see that the requirements of brewers in the United Kingdom were being safeguarded. Brewers were protected by the courtesy call system under which they had the first refusal of growths or parts of growths which they purchased in the previous season. Even where the brewer did not exercise his 'call' on those hops, arrangements had been made for transfers between merchant and merchant in order that it should be quite clear before those hops were released for export that they were not required by another brewer in the United Kingdom."

"Marketing of the 1949 Crop: The valuation of the crop had been completed, and the average of the valuations having exceeded the average price laid down by the Permanent Joint Hops Committee, all valuations had been reduced by 3s. per cwt. in accordance with the provisions of the agreement.

"The Committee were glad to report that after meeting certain demands from breweries who were short of hops no balance remained of the Board's reserve hops for the pro rata distribution by the Society."

NOTES FROM ABROAD

From the above source we gleaned the following facts: "Australia: The Minister for Shipping officially announced in Parliament recently that the Commonwealth Government is 'actively considering' the establishment of a special committee to investigate the cost of production of hops. In New South Wales the Department of Agriculture has begun a campaign to encourage hop-growing in that State. At the present moment the island State of Tasmania produces 90 per cent of all hops harvested in Australia (although the current season has been a bad one and it is expected that Tasmania herself will need all the hops harvested there), the balance coming from Western Australia and Victoria. Prior to the war the Commonwealth grew sufficient hops for domestic consumption, satisfies the local demand, and it is necessary to import supplies from the United States. Australian quarantine regulations prevent the importation of hops from Britain and from those European countries which suffer from downy mildew and hop mould in their fields.

"The hop industry in Australia can be a profitable one, for although the grower in Tasmania, for instance, gets only 2s. 3d. in Australian currency per lb. for his hops, his annual average yield is about eight bales (or 2,000 lb.) an acre compared with the English average of 1,550 lb., the United States 1,200 lb., the New Zealand 1,100 lb., and the Canadian 1,000 lb. or less. Often the Tasmanian grower gets a return of A. 100 lbs for each acre planted.

"The New South Wales Department of Agriculture has ordered cuttings of new and improved hop varieties from Britain. These are to be despatched by air and, after quarantine regulations have been observed, they will be transplanted in promising districts in the central, southern, and northern highlands."

"Belgium: In 1949 hop imports amounted to 1,609 m.t., valued at 178,511,000 Bel. Fr., coming from Germany (Bizone) 659 m.t., Czechoslovakia 627 and Jugoslavia 130 m.t."
1. "Determination of Bitter Acids During Maturation of the Hop. J. de Wever and W. Emery (FERMENTATIO, 1949, No. 5, 73-81). The authors have repeated the experiments made by Verzele and Eugene on some 1948 hops, (this Journ., 1949, 273), working on the same hop plants in 1949. The method of analysis used was that of Govaert (FERMENTATIO, 1948, Nos. 4-6, 35) and samples were taken daily from the upper part of each of the chosen plants (varieties of English, Hallertau, Saaz, Tettnang, and V/69) over the period from 16th August to 25th September. The following conclusions were reached. Hop moisture varies from 78 to 83 per cent under normal conditions, is not a varietal character, is less in the upper part of the plant than in the lower, and is at its lowest when the hop is just ripe. The beta acid (lupulon) forms before the alpha acid (humulon), and towards the end of maturation the alpha acid appears to form at the expense of some of the beta acid. This transformation is favoured by light. These observations confirm those made by Verzele and Eugene, but whereas the latter stated that the hops could be dried, with care, without loss of bitter acids, the present authors were unable to avoid some loss, which was greater for the alpha than for the beta acid. It was also found necessary to dry the hops as soon as possible after picking to prevent a progressive loss of bitter acids."

2. "Post-harvest Treatment of Brewers' Hops. A. G. Williamson (BREWERS' DIGEST Dec., 1949, 45-48, 53). Hop picking should not be carried out until the hops are fully ripe; even if over-ripe they are superior in quality to those picked too early. Ripeness is indicated by a greenish-yellow colour, stickiness, resilience and the purplish-red colour of the seeds if any. Although hand picking is usually adopted, stationary picking machines yield successful results and the hops from them are practically free from stems and leaves. To avoid heating and spoilage, hops should be dried soon after picking, as they may contain from 65 to 80 per cent of moisture. The most suitable temperature for drying is dependent upon the rate of air flow and the thickness of the hop bed on the horsehair cloth, but in general it begins with the air at 90 or 100°F, and is gradually increased during 4 or 5 hr. to a maximum of 145 to 150°F, when the hops will contain only about 6 per cent of moisture. If heated above 160°F deterioration of the colour, preservative value, and aroma occur. In the United States sulphuring is considered to be of doubtful value and is seldom adopted. To avoid undue damage owing to brittleness when baling, the kilned hops are spread on the cooling floor, covered with cloths, and left until the moisture content has increased to 10 or 12 per cent. Jute sacking is used for baling and is placed in a box mould, the hops being compressed into it by a power press. Tramping in order to fill the corners should be avoided as many cones are broken by this procedure. For home use, pressure is applied to yield a weight to 11 lb. of hops per cu. ft., but for export purposes further compression is used to give about 22 lb. per cu. ft. Hops stored at high temperatures soon deteriorate, but at 36° or 40°F with a relative humidity of 50 per cent they remain in good condition for 18 months.

3. East Malling Research Station Annual Report, 1948. The area under hops was ten acres. "Work has continued on 7 clonal Goldings and about 100 Fuggles clones which have been under observation in recent years. The crops from more than 150 new varieties were picked and dried separately in order to estimate the yield of each and, where necessary, its preservative value. The crops from 18 of these varieties, half of which showed some resistance to wilt, were pressed into small pockets for brewing trials. In the cultural trial in which the hills are cut three times with or without subsequent removal of the most forward bine, the best crops in 1948 were given by plots where the most forward bine had been
put to the strings. More observations have been made of varietal and seasonal differences in the take and size of sets produced with strap cuts of the clonal Goldings and the named new varieties. In a trial in which Fuggle cuts were planted at monthly intervals from December to April, the latest planted cuts gave a poorer performance than those planted at the other dates.

"The number of cases of progressive Verticillium wilt to be reported increased by about 23, partly as a result of the new Verticillium Wilt of Hops Order (1947). Of these, probably only 6 were of recent origin; one in West Kent and another in North Kent were some miles from the nearest previously reported outbreak. Fluctuating wilt was particularly prevalent and troublesome, both in Kent and Sussex and in the West Midlands; the severity of the symptoms was presumably determined by the cold, wet season. Two cases in the West Midlands appear to have been associated with the prior planting of potatoes. One new variety resistant to wilt was selected from the seedling tested in 1947, but no resistant variety has yet been found more suitable for commercial use than OR 55 and OJ U7. The correlation noted in 1947 between wilt incidence and nitrogen status of the plant is being further examined. Other cases of symptom masking of nettlehead have been noticed in commercial gardens, and in most outbreaks of this disease some plants bore enations similar to those found on the leaves of an infected plant in the greenhouse. As a means of diagnosis, however, the symptom is of limited value because, although enation was evidence of infection, by no means all infected plants showed enation. The 'leaf curl' disorder seen on some plants in 1947 was not so apparent on the same plants in 1948, but some leaves bore the necrotic flecks which had previously been noticed. Phorodon humuli Schr. has been tested as a possible vector of nettlehead and mosaic, hop red spider of mosaic, and flea beetle of nettlehead. No symptoms of the diseases were found on any of the test plants, which were being planted in 1949 for further observation.

"For the second successive year cockchafer larvae (Melolontha melolontha L.) have attacked the roots of young hops in a number of gardens, severely checking the growth and vigour of the hills. Soil treatments with naphthalene and the newer synthetic insecticides were ineffective, and it appeared that the infestation would continue until the grubs became fully fed in 1949 and dispersed as adults. The second insect to cause damage was the pug moth (Eupithes assimilata Guinee), the larvae of which gnaw through the growing tips of the shoots and frequently cause the fines to become 'blind.' The larva of the hop snout moth (Hypera rotalis L.) caused similar, but much slighter, damage in several hop gardens."

4. The Research Foundation - Its Aims and Purposes. Ian Heilbron and A. H. Cock. A pertinent portion of this stimulating paper is presented herewith, "Our main brewing materials are among the most fascinating for study. For instance, a great bulk of data is available on hops, their varieties, drying characteristics, hop rates, and many other aspects. Surely, however, our outlook on hops would be less circumscribed if we knew more about the exact nature of their constituents. At the present time we recognize two antiseptic principles—humulone and lupulone—together with A- and B-, soft and hard resins, tannins and other components; yet not one of these has been proved conclusively to be an entity for precise study. To-day there is abroad a widespread opinion that lupulone and related materials may be of value, for example, as anti-tubercular substances. Although there is no suggestion that the Foundation should engage upon the synthesis of such chemicals as additives for beer, we see what is possibly a major advance developing and one to which we can, and should in the national interest, make our contribution."

5. Annual Report of the Council of the Institute of Brewing for the Year Ended 31st January, 1949. Portions of the above report pertaining to work on hops are referred to in the following paragraphs:
College of Technology, Manchester:

1. "A study of Biological Stability of Beer in Relation to Hop Antiseptic was designed to provide answers to the following questions, among others:
   (1) What relation subsists between the humulone content of new hops and the stability of the beer brewed with those hops, (2) How is the above relationship affected by the ageing of the hops (a) in cold storage and (b) under ordinary conditions of storage, (3) Why do the humulone contents of certain varieties of hops diminish at a rate faster than the average rate, during storage.

   "In order to afford information relating to the third question the behaviour of humulone when stored in atmospheres of (a) ordinary air; (b) nitrogen; and (c) hydrogen, respectively, is being studied and further experiments are being undertaken to ascertain to what respective degrees the stability of humulone is affected by the presence of other constituents of hop-cones. In further experiments products obtained from humulone or from lupulone by aerial oxidation during storage are being studied and tested for bacteriostatic potency."

2. "Humulone Boiling Product. There is evidence from several sources that this substance consists largely of iso-humulone. Its bacteriostatic properties have been examined and its potency tested against Lactobacillus species isolated from different beers."

University of Birmingham. Hop Trials. "Further experimental brewings with Verticillium resistant varieties OR 55 and OJ 47 have been carried out, also brewings with a set of seven clonal varieties of Golding which were last tested in 1945."

Department of Hop Research, Wye College

1. "The new Hops Laboratory has been completed and equipped with the exception of the experimental kilns. The kilns are built but, owing to delay in supply, the electric heaters have not yet been installed. The new building is being used for work on the nutrition of the hop and hop breeding. The work of hop analysis and associated investigations are being continued in the Guinness Hop Laboratory, where 671 hop analyses were made during the year."

2. Nutrition of the Hop:
   (a) "Magnesium deficiency in hops had not been fully identified in the field until it was investigated by this Department. More than one form of this deficiency occurs; an experiment to study magnesium deficiency induced by excess of potash on alkaline soil is now in its second year and useful results have been obtained on kation balances associated with the deficiency. On acid soils the deficiency of magnesium can be associated with other deficiencies and toxicities and an experiment has been laid down to study these effects."

   (b) "Soil Acidity. Recent work by the Department has emphasized the complexity of the action of soil acidity as it affects the hop. Two experiments have been laid down to study the problem."

   (c) "Fertilizer placement. As a perennial plant with a deep-rooting habit, the hop can draw upon nutrients in the lower layers of the soil. Evidence has accumulated to show that, in particular, potassium deficiency can arise in the hop where the subsoil is very low in potassium even when the top soil contains a high amount. Potash placement in the subsoil in solid form and by injection in the form of a solution are being investigated as a means of overcoming the trouble."

   (d) "Micro-nutrients. Investigations on the micro-nutrients of the hop are being continued and, in this connection, studies on the boron status of hops are being commenced."

The above discussion will be continued in the October issue of THE HOP PRESS.
MEN OR MICE

Hop growers should decide, and soon, whether they are going to grow hops or certificates! The growing of hops, saleable allotments considered, simply for the diversion privilege of selling certificates will not prove to be a permanently profitable practice for Oregon operators. The practice, however, is becoming prevalent. Entire yards have been left unpicked for this purpose. Oregon growers are said to have sold certificates to others whose yards were located out-of-state.

According to competent cost accountants, a Willamette Valley hop grower, in 1949, producing 920 pounds of dry hops per acre had an investment of 29.35 cents per pound by the time his crop was ready for harvest. In light of current costs, the margin of presumed profit from the sale of certificates may well be less than it appears to be "on paper". The top price paid for certificates this season was reported as 42 cents per pound. Some, it is said, changed hands for as low as 35 cents. Orders for "olds" have been filled at prices to growers hardly more than enough to pay for the burlap!

Oregon's average yield is the lowest of the four Pacific Coast States! The greater the yield per acre, the less the pre-harvest cost per pound will be. Increases in yields are dependent upon a number of factors which include: (1) selection of superior planting stock, (2) maintenance of more complete stands (3) suitable spacing of plants (4) proper number of vines per hill (5) correct height of trellis (6) method of stringing (7) cultivation practices (8) a well balanced cover crop-fertilizer program (9) irrigation (10) adequate control of diseases and pests.

If hop growers in Oregon are to maintain a competitive position with growers in adjoining states, it is paramount that more attention be paid to cultural practices productive of higher yields.

Time was when they led the production procession. They were more concerned in the "good old days" with the sale of a crop of hops than with a crop of certificates.

AN OPINION FOR OCTOBER

"Sweet are the uses of the other fellow's adversity"
From the Grants Pass DAILY COURIER of August 15 we quote as follows, "Pickers Warned to Guard Health. Dr. C. W. Dewey, county health officer, today issued a warning to all persons planning to pick hops to avoid heat exhaustion by taking plenty of salt in the diet and, if necessary, using salt tablets.

"Dr. Dewey also urged hop-workers to avoid drinking water of doubtful purity. Minor cuts and scratches should be treated promptly to avoid infection, he said, and all injuries, no matter how slight, should be reported immediately to the employer or his agent.

"Protective clothing should be worn, as contact with the hops and hop vines causes various kinds of skin irritation for some people."

An interesting item in the MOUNT ANGEL NEWS, issue of August 17, 1950 is quoted herewith in part, "'News' In Hop Bale Brings Letter From Germany. Shortly after the first of the year a shipment of hops left the Fred Schwab Commission Co. for Germany, of which this newspaper made a story. The Schwabs inserted a copy of that issue into one of the hop bales with a stamped envelope, asking the receiver to write a letter."

An interesting reply dated August 8, 1950 was received from Gunther Bohne whose address is Dreissigacker, Uber Meiningen Thur in the Russian Zone of Germany.

The McMinnville NEWS REPORTER, issue of August 22, 1950 carried the following item, "1950 Production May Set Record. Hop production in this country, as now estimated and including Idaho, is at a record level although the 1949 crop was nearly as large as expected this year.

"Production in Washington and Idaho has increased rapidly in recent years. The crop now being harvested in Washington is 1/4 larger than last year's and nearly half greater than the 10-year average. In Idaho, the crop is nearly 30 per cent larger than last year and four times the average.

"Oregon's hop production has followed a downward trend for several years, but this year's prospects of 16 1/2 million pounds are 13 per cent greater than last year's total."

The forty-eighth annual Malheur County Fair was held at Ontario, August 30, 31 and September 1, 2 this year. We were there! Class VI of the agricultural exhibits was devoted to Hops. First, second, and third prizes of $4, $2, and $1 respectively were offered to exhibitors for five cut samples each of baled hops of Early and Late Clusters. Timing of the fair was untimely for the hop growers since picking got under way the same day the fair did and there were no exhibitors. The idea, however, is a good one for county fairs in all hop growing counties.

Figures on hop production in New York which reached us recently indicate that in 1949 there were five counties in which 32 growers produced 790 bales on 217 acres.
MANAGER NAMED

MOUNT ANGEL NEWS, issue of August 31, 1950 reported as follows, "Hop Producers' Manager, Ray Davis, of Monitor, this week accepted the position of manager of the Oregon Hop Producers, Inc.

"Mr. Davis has had much business experience, as he has operated a warehouse and store in Monitor for many years.

"His many friends here wish him the best of success in his new undertaking."

AERIAL DUSTING

STAUFFER NEWS LETTER, issue of August 1950 carried the following item of interest, "Aerial Dusting and Spraying Requires Skill, Iron Nerves. When a grower hires a custom airplane duster or sprayer to do a job for him, a number of factors will determine whether the job is well done.

"It takes the right plane and equipment, of course; but working knowledge of insects, crops, and chemicals by the operator; preliminary ground work before beginning the actual job; and iron nerves are important, too, according to the experts.

"As for the type of airplanes to be used, the slow ones are said to be best for this work. By slow planes, the authorities on the subject mean those capable of cruising at 75 to 90 miles an hour. Though slow in terms of speed for planes, such a plane can cover over 100 acres an hour.

"Inspections are made regularly to make sure that such equipment as the forcing mechanism and venturi nozzles are just right so application of the material is not spotty. A good check is to see that the plane and equipment have been inspected and approved by the Civil Aeronautics Authority.

"The experts say that the first job is to look over the fields and do preliminary ground work. The operator calculates what his target will be, checks bordering pasture lands, fence rows, and ditches to see whether he should dust or spray beyond the actual limits of the 'target field'. Not until he is sure of what he is doing does the actual job start, and then only when the wind and weather are right.

"An operator should know insecticides, weed killers, hormones, defoliants, fertilizers, and seeds, or whatever the case may be—to be successful in this business. Of course, planes must be handled by skilled pilots. This is an important point, for dusting and spraying by air 3 to 8 feet above the ground is a dangerous job—no work for amateurs."

PICKING CO-OP

The NEWBERG GRAPHIC, issue of August 31, 1950 carried an extensive account of the details of operation of the J. E. Smith Hop Company, a four-year old co-operative venture of eight St. Paul growers: John Smith, the J. E. Smith Hop Co., Carl, Claude, and Maurice Smith, Lester Kirk, Bill McKay, S. J. Smith, Steve Merten and Elmer Ernst.

The company has eighty employees, including truck drivers. Forty each to a 10-hour shift with two shifts working on an average of six days and nights a week for a 20-day period will process over a million pounds of hops.
PICKING PICTURE

The INDEPENDENCE ENTERPRISE, issue of September 1, 1950 pictured a battery of three stationery picking machines at the McLaughlin ranch operated by Williams and Hart. A 90-man crew handles 1,800 sacks of hops per ten-hour shift.

DOLLAR DECLINE

From the above source we quote the following item of interest, "1949 Hop Crop Gross Figures Show Decline."

"The 1949 Oregon hop crop brought growers $5.9 million in gross cash income, according to figures released this week by the state department of agriculture. This figure is considerably below that of other years.

"Oregon farmers' gross cash income from all crops was $363,563,000, about 33.3 million dollars less than in 1948."

ALLOTMENT INCREASES

The SALEM STATESMAN, issue of September 2, 1950 carried the following account, "Plan to Increase Hops Allotments Under Discussion. A proposal to increase supplemental saleable allotments for hops is under consideration, the agriculture department announced today.

"The marketing agreement which regulates handling of hops grown in Oregon, California, Washington, and Idaho provides that total preliminary and supplemental allotments may not exceed 90 per cent of each growers' probable final saleable allotment unless the control board increases the percentage.

"The proposal now under consideration would increase the total of these interim allotments to a maximum of 90 per cent, the department said, under certain conditions."

TOUCH SYSTEM

The PORTLAND OREGONIAN, issue of September 4, 1950 carried the following account, "Blind Picker Among Best. Ernest Lewis, Gresham, deprived of his eyesight in a dynamite explosion 28 years ago, is one of the best hop pickers in the business, an Eola hop yard owner said.

"'He picks them fast and he picks them clean,' his employer averred.

"Lewis plays the accordion and violin. He was asked to appear at the Gresham fair, but expressed a preference for hop picking; Lewis has a wife, Marie, and three children."

A picture of Mr. Lewis at work appeared in the SALEM STATESMAN, issue of September 3.

SOILS AND CROPS

A quarterly publication, with the above title, is issued by Swift & Company, "as a service to western Agriculture."

If interested in having your name placed on the mailing list write the Editorial Office: Growers' Advisory Service, Swift & Company, Plant Food Division, 4060 East 26th Street, Los Angeles 23, California.
BLOW DOWN

The HERMISTON HERALD, issue of September 7, 1950 had the following tale to tell, "Local Hop Yard Suffers $5,000 Loss from Wind. Labor and materials to replace the posts and wire knock-down early this week in the hop yards of the Hermiston Farms, Inc., by the high wind, will cost about $5,000 it was estimated today by Harvey Kaser, manager.

"About 25 acres of hops on the Loop road were still on the ground but work of salvaging them for market was slated to start tomorrow (Friday) or Monday. No estimate of the damage to the hops was available today.

"Kaser said that the posts and wires used this year were too light for the crop and the brisk breeze of Monday with several heavier gusts was all that was needed to down the crop. Some loss of hops due to lying on the ground is anticipated.

"Early hops were running 10 to 12 bales per acre but late hops which were blown down were expected to 15 bales to the acre, Kaser said."

FIRE! FIRE!

The WOODBURN INDEPENDENT, issue of September 7, 1950 reported, "Hop House at Monitor Destroyed by Fire on Last Tuesday Afternoon.

"The Elmer Thompson hop house and about 50 bales of loose hops burned to the ground Tuesday afternoon. The whole roof was afire when discovered. The two Monitor fire trucks and one Mt. Angel truck answered the call. "While it was too late to save the hop house they kept the fire from spreading."

The EAST OREGONIAN, issue of September 14, 1950 carried the following account of the second misfortune for the season for the same Umatilla county growers, "Hop Kilm Burned In Hermiston Fire. The big double kiln at the Hermiston Farms burned early Wednesday morning. Cause of the fire was unknown. Estimate of the loss ran into the thousands of dollars.

"The fire was so intense that the building seemed to explode at the sides, caving the roof in. The blaze which lasted a half hour could be seen for miles. The kiln was a frame building and tinder dry from drying hops.

"About 220 bales of hops were burned. The hop cleaners, near the building, also went up. About 320 bales were saved. There are still 400-500 bales of hops to be picked. Harvey Kaser, manager, said that the hops would be dried in the kiln on the loop road, next to the Kopaez farm."

The PORTLAND OREGONIAN, issue of September 16, 1950, under the heading, "Fire Destroys 200 Bales Hops," stated, "A fire company from Ordinance helped prevent the flames from spreading to nearby buildings and fields.

"Foreman Art Burford of the hop yard succeeded in removing a tractor, manure-spreader and two trucks from the scene before the flames reached them."
The YAKIMA HERALD, issue of September 15, 1950 reported, "Smoke Seen Many Miles. Damage Estimate $150,000 to $350,000. Fire of undetermined origin leveled a hop kiln, spread to a hop picking shed and caused damage estimated from $150,000 to $350,000 on the Amos Brulotte ranch two miles southeast of Grandview late Thursday afternoon.

"The flames hurled sparks and black smoke across the entire lower valley until well past dark, two hours after the fire started at about 5 p.m.

"Seven fire trucks from the Sunnyside, Grandview, Prosser and Mabton departments responded but the fast-spreading blaze enveloped the whole big structure before much water could be brought into play.

"Fire fighters remained at the ranch throughout the night to protect nearby buildings.

"Brulotte, considered the largest independent hop grower in the world with more than 600 acres in bearing in the lower Yakima valley, was in Idaho on business and could not be reached for comment.

"Included in the loss, besides the buildings, were a stationary hop picker and baled hops in an undetermined amount.

"While the flames continued, truckloads of hops were still being brought into the kiln area by drivers who had not learned of the fire."

NEW PICKER PICTURED

The OREGON FARMER, issue of September 7, 1950 carried a feature article by George N. Angell entitled, "Oregon Adopts New Hop Picker." The well-illustrated story tells about the operation of the Regimbault-Thurmer vertical stationery picker operated by the Oregon Hop Producers, Inc. at Mt. Angel. There are two other pickers of this type in Oregon. One is owned by Butte Creek Orchards of Woodburn and the other by Earl Owen of Molalla.

There are some thirty members of the four-year-old organization of which Fred W. Lucht is President. Other members of the board are Perry Larsen, Vice-President, Dave Scharer, L. E. Woodley, Killien Smith, Elmer Palmquist and Ollie Humphert. Mrs. Mary Berger is the Secretary.

TANASSE TRYOUT

The SUNNYSIDE SUN, issue of September 14, 1950 carried an illustrated article on the operation of a new 12-unit Tanasse dryer in operation on the Al Regimbald ranch near Satus. The outfit is putting out around 130 bales of hops a day. Drying is completed in from 5-6 hours. Cost of installation is said to be equal or below comparable capacity kilns of other design with a two-thirds cut in labor costs. Relatively minor structural changes are contemplated in future.

SCALES CHECKED

The WOODBURN INDEPENDENT, issue of July 6, 1950 indicated dates and locations in the vicinity for the annual testing of hop scales by the State Sealer of Weights from the State Department of Agriculture.
LABOR SAVERS

The OREGON FARMER, issue of September 7, 1950 carried an interesting item, quoted in part herewith. "Hop Grower Uses Sheep to Reduce Labor Costs."

"Anything to reduce costs these days of high priced and almost unobtainable labor, and out on route 1, Mount Angel, E. F. Willig finds that in growing hops, running a few sheep does just that.

"I turn them in and let them weed and crown my vines," he said. "They go over them when sprouting, then when I'm ready to hoe, the vines are all even. Besides, they do all my suckering and stripping, cleaning them up as high as an ewe can reach. And of course they clean up corners and help keep down weeds all over the ranch, and furnish some fertilizer. On 20 acres of hops they save me about $250 a year, and they virtually live on what ordinarily would go to waste. They sure do a pretty job."

"Willig first tried this trick during World war II, when man labor simply wasn't to be had."

MALHEUR COUNTY HOPS

AGRICULTURE BULLETIN for September, 1950 referred to hops in Malheur County in two separate articles; "Malheur County" by Harry R. Sandquist and in a second article entitled "Newer Crop Developments Along Oregon's Eastern Border."

ALLOTMENT ALLOWED

A P.M.A. press release of September 21, 1950 follows, "Increase of Hop Supplementary Allotment Approved. The USDA announced approval of the Hop Control Board proposal to increase the limit on supplementary allotments of hops to 90% of the probable salable allotment for each grower for whom complete information as to his 1950 hop production is available to the Board. The Hop Control Board administers the Federal marketing order and agreement regulating the handling of hops grown in Oregon, California, Washington, and Idaho. The agreement and order specifies 30% of any grower's probable salable allotment as the maximum supplementary allotment which may be issued to a grower prior to issuance of his final salable allotment. It is provided, however, that the Department may authorize a higher percentage. This change has been recommended with a view towards releasing for early sale as many hops as possible."

PRO. ISING PRODUCTION

The Corvallis GAZETTE-TIMES, issue of September 26, 1950 reported, "Oregon Hop Crop Shows Large Gain. Oregon's hop crop -- estimated at 16,500,000 pounds will be 13 percent greater than a year ago although 3 percent under average. The fuggles harvest is completed and showed generally a lighter yield than last season. The late clusters, however, promise to more than make up the difference.

"The Washington estimate is 25,058,000 pounds, 29 percent above last year and 53 percent above average. The California estimate is 15,315,000 pounds, about the same as last year but only a fourth of average. Idaho, with a minor role in production, is expected to yield about 1,850,000 pounds -- a third over a year ago."
HOP RESEARCH

JOURNAL OF THE INSTITUTE OF BREWING for May-June 1950 carried the following item of interest.

"Some Aspects of Recent Hop Research" by N. Blakebrough. "Storage and brewing trials on several varieties of hops show, in general, that the relative stabilities of beers brewed at a hop rate of one pound per barrel from a given series of hops are directly related, during the first year of storage, to the respective humulone contents of the new hops at the time when they were received. Certain aspects of the results so far obtained are considered in the light of recent Belgian work on the antiseptic constituents of hops. At the pH of wort, humulone boiling product has a bacteriostatic potency equal to 1.3 per cent of that of humulone; in beer, no significant difference could be detected between the bacteriostatic potency of humulone and that of its boiling product.

"The effects of various conditions of storage on the stability of hop resin fractions, and of crystalline humulone and lupulone, are described. The stabilities of humulone and of the crude a-fraction are affected by the presence of the b-fraction, and by the nature of the atmosphere in which the materials are stored. The bacteriostatic properties of some of the products obtained have been investigated.

HOPS MARKETING SCHEME

THE BREWERS' JOURNAL AND HOP MALT TRADES' REVIEW of July 19, 1950 carried a very complete account of the English method of marketing hops under the following headings: 1949 crop, acreage, scheme amendments, new basic quota, agreement with the Brewers' Society, pension scheme, payments to producers, insufficiently cured hops, research, new varieties, propagation of resistant varieties, prosecution of hop pickers and visit to America.

NOTES FROM ABROAD

From the same source the following information was abstracted:

Australia: The Swan Brewery Co. uses 400,000 pounds of hops annually (including the entire western Australia crop).

France: "The problem of hop supply still offers many difficulties. The Brewers' Union sincerely wished to come to an agreement with the hop-growers and dealers granting growers profitable prices. However, the persistent rivalry between Alsatian hop-growers and dealers caused a price race which, once more, took place at the expense of the brewers. The hope of an agreement, therefore, had to be abandoned, at least for the time being. After the franc devaluation the prices of foreign hops again increased considerably, and this upward trend was reinforced by frantic speculation in German hops. With a great deal of difficulty the Brewers' Union eventually secured the supply of 500 metric tons of hops from Czechoslovakia, Germany, and Belgium."

PRODUCTION PROBLEMS

BREWERS JOURNAL for July, 1950 presented an interesting and informative article under a somewhat misleading title, "English Hop Farmers Are Disturbed by the Decrease in Beer Consumption." Actually, the article discussed at some length cultural, particularly fertilizer and water, requirements as well as diseases and pests and the control of the latter by systemic insecticides.
November 20, 1950

DAVID'S SLING

"Anti-subsidization" O'Shea, "Super" Secretary of the Small Brewers Association, I am sure will agree with the statement, "Size does not always signify superiority." An Old Testament tale provides proof of this platitude.

Goliath of Gath was a combatant who considered himself a champion. The Philistines had bet all their buttons on the Big Boy to take diminutive David of Israel to the cleaners, but fast! Man and boy met in mortal combat. Behind a shield bearer, Goliath, arrayed in armour, swinging a sword and shouldering a spear, ambled forward. Doughty David stuck to his staff. He carried his simple shepherd's purse, containing five smooth stones from a babbling brook, and a sling. What happened is history! A single pebble slung, with force, to a soft spot on Goliath's skull turned the trick!

Inherently, size has its shortcomings. The "shrimp" who's smart can cash in on them. Bill's brilliant Bulletin bulges with bright ideas which small brewers can and do adapt to their own advantage. However, at least thirty-three breweries went out of business last year; most of them small ones! It's a darn shame! Every one of these closures means one less potential patron of the American hop producer.

Then too, the better beers are not all produced by the big brewers. I could, if questioned, furnish the names of some of the small factories that fabricate some luscious liquids!

Any qualified Master Brewer, with proper equipment, can learn to use whatever his purchasing department provides, within reason, and end up with a product of which he can be proud and one that will please the most captious customer.

Some of our finest fermented malt beverages are brewed solely from domestic hops! Malt and hops and an array of adjuncts are the maid servants of the Brewer. The sales departments of small breweries might stimulate consumption if they could capitalize on the caption "American Maid."

I make so bold as to butt into the brewers' business only because I am concerned about the continued capacity consumption of American hops.

A NARRATIVE FOR NOVEMBER

"Nothing removes conceit like a walk through a cemetery."
HOP EXHIBIT

The list of sponsors of the Hop Industry Exhibit which was prominent among many notable exhibits featured at the International Brewing Industries Exposition held in Philadelphia, October 2 to 6, 1950 was printed in the September 1950 issue of THE HOPPER, personnel of the Exhibit Committee appeared in the October issue.

The Exposition was held in conjunction with the 63rd Annual Convention of the Master Brewers Association of America.

The display of hop samples representative of all of the important hop growing sections of the United States attracted a lot of attention. Our thanks herewith for the fine cooperation, which made the exhibit possible, on the part of: John I. Haas, Inc., K. I. Spooner and Williams and Hart for commercial samples. Experimental material was supplied by J. D. Harlan, N. Y. State Agricultural Experiment Station, Geneva, N. Y, and K. R. Keller, Oregon Experiment Station, Corvallis, Oregon.

FIRE LOSSES LARGE

Further losses have occurred in the Yakima valley. The SPOKESMAN REVIEW, issue of September 21, 1950 reported, "Fire Destroys Moxee Hop Kiln. A loss estimated at $50,000 occurred yesterday afternoon when fire destroyed a hop kiln on the Louis Dufault ranch east of here.

"It was estimated that 12 bales of loose hops, besides those in the kiln, were destroyed. A warehouse, a shed, a cabin and a tenthouse also were burned. Workers saved 60 bales of hops from the warehouse. Dufault said about $40,000 of the loss was covered by insurance.

"It was believed the blaze started from a spark sucked into the kiln cupola from a smokestack."

The YAKIMA REPUBLIC, issue of September 23, 1950 had this to say, "Hop Kiln Losses Mount in Valley. Hop kiln fires which struck in four areas in the last nine days causing thousands of dollars worth of damage have been attributed by hop men to the unusually dry weather.

"Latest in the series of fires was one Friday which destroyed a kiln belonging to Anthony and Joe Herke in the Tampico district. It had been a landmark for many years. The original kiln, which was built in 1887, was also destroyed by fire. It was rebuilt in 1895.

"Loss was estimated at $50,000.

"The rural fire department was able to get seven bales of hops out of the building. Flames spread to a near-by warehouse but the building was saved, Ray Bilger, assistant rural fire chief, reported. The kiln was a total loss. Bilger said he believed the fire started from a spark in the drying room. The main kiln used by the Herke brothers was farther down the road and the burned building had been used only for surplus, Joe Herke's son, Carl, said.

"Only last Saturday, Carl Herke's kiln in the Cowiche district was razed by a $40,000 fire."
**HOP BOWL BUSINESS**

The INDEPENDENCE ENTERPRISE, issue of September 15, 1950 carried the following account, "Tom Smith Named President Of Hop Bowl For 1950. Tom Smith was elected president of Hop Bowl, Inc., when the fiesta association held its final meeting of the season last Thursday. In a manner of speaking, he was really re-elected to the post. Chosen to head the group last fall, illness this spring forced his resignation. Lewis Woods succeeded him.

"Ralph Evans was elected secretary while Ben Muhleman, William F. Karbel and Bob Craven were named to the board of directors. Retiring President Woods and Secretary R. M. Taylor are the two other members of the five man board.

"The final financial report presented at the meeting by Taylor, showed fiesta profits this year approached the thousand dollar mark."

**TEACHING TEACHERS**

From the above source we learned, "Teachers Tour Independence-Monmouth Area. The teachers of the district school system received an official welcome into the fold Wednesday as the concluding day of the teacher's workshop was devoted to acquainting them with what makes the Independence-Monmouth area click.

"Brief talks by John Pfaff, president of the Independence chamber of commerce, and Howard Morlan, mayor of Monmouth, started the day. The remainder of the morning was spent touring the Independence area. Following lunch at Helmick park, a similar tour was made of the Monmouth area." Among the points visited were hop yards at Senator Dean Walker's Hanna ranch and the Williams and Hart hop picking machine.

**NO HOPS NEEDED**

TIME, issue of September 25, 1950, on page 22 under a column headed "Manners and Morals" gave the following devastating definition, "Government issue 3.2 beer is an innocuous, vaguely sudsy fluid which can be closely approximated by steeping a yeast cake and a tea leaf in a gallon of any good, mild barley water." Good old Gambrinus would gasp at the temerity of any tyro who would fall for such a formula. Beer without hops! There just is no such substance!

**SABOTEUR SOAKED**

The SALEM CAPITAL JOURNAL, issue of September 27, 1950 reported in part, as follows, "Super Sleuthing Clinches Charge. A hop yard vandal, who drove into the hop yard of the Sunset Farms on the night of August 31, was fined $50 on a charge of destruction of crops. This sentence came after several weeks of police work which brought definite proof against the defendant. The defendant, with several other men, was alleged to have created a disturbance in the Sunset camp, and were ordered to leave by the camp boss. When they left, however, they drove into the hop yard, tearing down trellises and destroying hills.

"Ronald L. Hardman of the Sunset farms pointed out that damage of this nature seems to occur every year in several yards, but the vandals are usually not caught. The stiff penalties which such destructive action can bring, as shown by the recent trial, may prevent such vandalism in the future."
BLOXHAM BUILT IT

The NEWBERG GRAPHIC, issue of September 28, 1950 carried the following item, quoted in part herewith, "New Hop Dryer Gives Growers Faster Service During Harvest. Processing hops, one of the top agricultural industries in the Newberg area, has recently revealed a new type dryer, which not only saves on manpower, but also allows the grower to harvest and dry his crop in a relatively short time.

"E. C. Davidson, a St. Paul hop grower, who had worked in hop fields and yards since 1886 and was the first farmer in the area to raise Fuggles in 1934, owns and operates this latest type dryer."

COOPERATION COUNTS

The INDEPENDENCE ENTERPRISE, issue of September 29, 1950 carried the following stimulating story, "Successful Hop Harvest Result of Cooperation. Probably without many people realizing it, this community has just carried out a fine demonstration of the value of cooperative effort. The result is that the local hop crop has been successfully harvested under difficult circumstances, to the real benefit of both producers and business people in this vicinity.

"Both experts of the state employment service and local growers were lulled into over confidence prior to harvest, for the labor supply seemed more than adequate to harvest all crops. It soon became apparent, however, that such was not the case and the Independence Hop Growers association promptly swung into action.

"A special committee headed by D. F. Kennedy was appointed. A special per acre levy was assessed on each grower and for the most part promptly paid. The active assistance of the state employment service was solicited and fine cooperation received. A plan for the best use of all of the workers in the area, both for hand and machine picking was worked out. An intensive newspaper and radio program was instituted with fine assistance from the local press. The program was largely executed under the tireless direction of Dean Omans, the secretary of the Independence Hop Growers assn.

"It might be added that the program looked so good that even the weatherman wanted in on it and his assistance didn't hurt. Anyway the results were good and a tough situation was licked by intelligent self help and cooperation. We could use a lot more of it in this area and in this nation. It's to our interest to stop leaning on "uncle" even though he has asked for it."

HOP WORKERS WAGES

Reports from Yakima in mid-September indicated an average wage of one dollar per hour with $1.10 an hour being paid in a few instances. The average wage in 1949 was 85 cents per hour.

MASTERS THESES

Master theses were granted in June, 1950 by Oregon State College to R. A. Magee and D. K. Runner. Their thesis titles, respectively, were "A Critical Analysis of Some Aspects of the Gravimetric Procedure of Hop Analysis" and "The Structure and Development of the Storage Root of Humulus lupulus L."
ITEMS OF INTEREST

The following material is a continuation of the discussion which appeared on page 8 of the September 15, 1950 issue of THE HOP PRESS:

(e) "Nitrogenous Manuring Trials. The manurial trials of different amounts of nitrogenous fertilizer gave no significant difference in yield in 1948.

"The trial of Inorganic v. Organic nitrogenous manure gave a significant difference in favour of the organic manure in 1948. The hops on which these trials are made were planted in 1929 and the trials have been continued on the same plots throughout the period; the plants are now suffering from senility which is more evident on the plots which have received no organic manure since planting. This garden was grubbed in Autumn, 1949."

(f) "Phosphorus and Potassium nutrition. An experiment has been laid down to investigate the effect of phosphorus and potassium and the interaction of these elements in the nutrition of hops."

(g) "Verticillium Wilt. In collaboration with East Malling Research Station work has been continued on the problem of nutrition in relation to the hop Verticillium wilt disease."

3. "Cutting the Bine at Picking time.
"An experiment is being conducted on three varieties of hops to determine the effect of cutting the bine at picking time, a procedure which is necessary when the hops are to be picked mechanically by such machines as are at present on the market. Cutting the bines in 1947 had no effect on the yield from the plots in 1948; the adverse weather conditions which were experienced in East Kent during the 1948 growing season, however, probably masked any differences which might have occurred in a more normal season.

"Analyses of the bines have shown that much nutrient material travels back into the rootstock during the ripening of the bine."

4. "Hop-picking Machines.
"The progress of mechanical hop picking is being kept under observation and six different types of mechanical pickers were inspected while in action in 1949."

5. "Hop Varieties.
(a) "Selection of Golding Hops a new three-acre hop garden has been established primarily for the purpose of the selection of Golding Hops. This has been planted temporarily with Early Bird, Petham and Eastwell Goldings, and four hills each of some 130 selected Golding hops. The garden will be used for cultural trials on Golding hops until it is required for the comparative testing of the more promising types from the collection of selecting Goldings."

(b) "Plant Breeding. The work of raising new seedlings from selected parent plants has continued. These have been planted in the hop nurseries in place of some 1,500 seedlings which showed no improvement on existing varieties. Samples have been picked and dried separately from 54 individual plants which appear to have commercial promise, and plots of 64 new varieties have also been picked and dried separately for commercial valuation. The work of classification of male hops and studies on the fertility of female hops is proceeding. Work is also being carried out on methods for producing controlled crosses."
(c) "Genetics. Work has been commenced on the method of inheritance of certain characters and a search is being made for characters which can be used in progeny testing."

(d) "Cytology. Improvements have been made in the 'squashing' technique which will lighten the work of microscopical observation.

"No evidence has been found of the presence of heteromorphic sex chromosomes in the male wild European hop.

"Colchicine treatment is being tested for the production of polyploidy."


Twenty-two triplicate samples comprising Brewer's Gold; Northern Brewer; Bullion Hop; Fuggles; Eastwell Golding; Canterbury Goldings; Cobbs and Early Birds, have been stored under the following conditions; (a) Room temperature varying between 38° F. and 82° F.; (b) cold store at 38° F.; and (c) cold store at 32° F. The rate of diminution of humulone in all the varieties tested is in the order (a), (b), (c).

"The influence of variety on the rate of deterioration has been confirmed and some evidence has been obtained that the ripeness of hops may affect the keeping property.

"Samples of Eastwell Goldings and Brewer's Gold are being stored in vacuum and in various gases and will be analysed periodically."

East Malling Research Station

1. "Variety and Cultivation Trials.

"During the year, responsibility for investigations upon certain aspects of hop culture previously carried on at East Malling was taken over by the recently formed Hop Research Institute at Wye College, Kent.

"Research on Verticillium wilt and other root diseases, and on the virus diseases of hops, will remain a major part of the pathology research programme at East Malling."


"The final (sixth) season's records have taken on the clonal Golding trial. A very considerable amount of information has been obtained over the period. The data are now being summarized and prepared for publication. Sets of the seven East Malling Golding clones have been planted at Wye for comparison with other clones.

"Cuts of 40 Fuggle clones have been sent to Wye and will be intensively propagated for planting in a new Fuggle strain trial. Included in the trial will be Fuggles known to be definitely earlier in season than normal and others thought to have especially good cone development. The best East Malling Fuggle (Strain "N" Beard, 1913) will be included as a standard of comparison."


"The crops from around 85 new varieties raised by Professor Salmon at Wye were picked and dried separately so that the yields could be calculated and, where necessary, samples saved for P.V. determination. Samples of 19 varieties were stored in jars for subsequent analysis. Analytical data just to hand show
that, on the whole, varieties had a considerably higher P.V. in 1949 than in 1948. Nonsuch hop (OM26) had the highest P.V. (113), whilst John Ford (WF90) and Brewer's Gold (C9a) were only slightly lower."

4. "Cultural Trials."

"The time of cutting and severity of pulling trial has been concluded. In the past season there were no significant differences between the treatments though there were indications that the plots having the more forward bine put to the strings gave heavier yields.

"Out of eleven seasons there have been no significant differences between treatments in six; the plots with the more forward bine gave heavier crops in four; whilst in only two seasons has 'time of cutting' had any effect on the yields.

"In the trial designed to compare three methods of checking the extreme vigour of Brewer's Gold, the cropping of the two 'stopping' treatments did not differ significantly from the control. Wide spacing did, however, reduce the yield. In the previous season both 'stopping' and wide spacing gave yields lower than the control.

"Neither 1948 nor 1949 were suitable years for this trial, as in both season's Brewer's Gold failed to make its usually ultra vigorous growth.

"The effect of cutting the bine at picking time, necessary when hops are picked by machine, is being investigated on Bullion Hop. In 1949 those plots cut at picking time in the previous season gave a slightly lower yield than the control plots. The trials with Brewer's Gold and Bullion will be continued at East Malling for the present until comparable trials are established at Wye."

5. Diseases of Hops

(a) "General. Some seven new outbreaks of progressive Verticillium wilt have been reported to the Research Station during 1949, mainly by Inspectors of the Ministry of Agriculture. Two of the new outbreaks are a few miles from the main affected area in Kent and Sussex, but there is no evidence of spread to any completely separate hop-growing district.

"Presumably because of the hot-dry weather during the growing season, fluctuating Verticillium wilt was much less prevalent in 1949 than in the previous year. For the same reason the masking of nettlehead symptoms was very pronounced."

(b) "Verticillium Wilt. Some twenty new seedlings bred from resistant parents were given their first standard resistance trials during the year. Several of them appeared highly resistant and also of fair cultural quality. They included a number of male hops which may be of value, both for planting in infected gardens and for further breeding work. Other new seedlings were further propagated for resistance trials in 1950.

"Some 20,000 sets of the older established resistant variety OR55 (Keyworth's Midseason) were distributed by the Hops Marketing Board to 15 hop growers early in 1949. Records made of these plantings, together with those of older plantings, both of OR55 and of OJ 47 (Keyworth's Early), showed that the wilt incidence in either variety under commercial conditions averaged about 2-3 per cent. In several of the 2-3-year-old gardens of these varieties it was noted that some of the plants which had shown wilt symptoms in 1948 were now apparently unaffected. This confirms previous observations and suggests that plants of these varieties may show recovery from the effects of the disease as they become established."
"A description was published of two experiments, which were made in collaboration with the Long Ashton Research Station from 1944-47, on the effect of Verticillium albo-atrum on hops growing in sand culture supplied with various nutrient solutions. In both experiments, nitrogen-deficient plants showed much less severe symptoms than those grown in complete nutrient. Other modifications of the nutrients supplied did not result in any consistent or marked alteration in the final symptom status of the plants.

"Following on this work a series of experiments was started using hop plants grown in a plot of ground deficient in nitrogen, to which various nutrients were added. These trials have shown nitrogen effects, similar to those noted in the pot experiments."

(c) "Virus Diseases. Research in 1949 was mainly directed to the determination of the natural vectors of mosaic and nettlehead. As research on the vectors of the hop virus diseases found in Czechoslovakia has already been carried out by Dr. C. Blattny and his colleagues, a visit was paid in July to the Hop Institute at Zatec to study this work at first hand. Information of considerable value in the planning of our own work was obtained.

"Experiments involving the artificial transfer of insects in the glasshouse were again greatly hampered by limitation of space and by lack of temperature control. Under the abnormally hot weather of 1949, almost complete symptom-masking occurred both in the glasshouses and in the field. Thus no conclusion could be reached on the 1948 tests of Phorodon humuli as a vector of nettlehead and mosaic. Seven other insects and the hop eelworm and red-spider were tested this year, but no evidence of transmission has yet been obtained.

"During the year the building of additional insect-proof glasshouses for research on virus diseases was commenced. It is hoped that the new facilities, which allow of experiments being carried out under controlled conditions of temperature, light and humidity, will be available for use early in 1950.

"Besides the direct transmission experiments with individual insects, a study of the spread of hop virus diseases in the field was started in a series of observation plots selected in hop gardens where the diseases appeared to be spreading. A field trial on varietal resistance to nettlehead was also started. Earlier work suggested that certain Wye Seedling varieties might be partially tolerant to graft-infection with nettlehead. The present trial is designed to test the reaction of six of these varieties to natural infection."

IN THE ACT

The lead article in EXTENSION SERVICE REVIEW for October, 1950 was entitled "Get Everyone Into The Act." The title role was taken by Ben Newell, hop growing Marion County Extension Agent. There was a nice picture of Ben bent on taking toll of tansy ragwort.

DOWNWARD TREND

The number of breweries in the United States dropped from 440 in 1949 to 407 in 1950. The barrels of fermented malt liquors made dropped 928,572 in the same period. The hopping rate was reduced from .441 pound per barrel to .426 pound.
SALUTE TO SALESMEN

Whether we know it or not, we are all salesmen of sorts! I know some swell ones, both collegiate and commercial.

The overall objective of representatives of the Extension Service is to be of assistance in making agricultural practices profitable and rural living both a privilege and a pleasure. The salesmen of farm equipment and supplies hope, or should, to be of similar assistance.

The relationship between representatives of educational institutions and industrial organizations, in the agricultural field, should be one of mutual appreciation, confidence and friendship. The farmer who eventually pays for it all, at least in part, will inevitably reap an increased return on his investment.

Many commercial concerns maintain excellent experimental laboratories of their own. The scientific personnel employed, for the most part, are both competent and conscientious. They are acutely aware of growers' problems and persistent in their efforts to effect practical solutions. The effectiveness of industry-inspired publications and visual aids used to urge the use of improved practices and products must many times be the envy of Extension workers.

Sales representatives are seldom confined to a single county. Their "territory" usually extends throughout one or more states. In the course of constant travel they see the effects of differing soil, climatic conditions and cultural practices on a wide variety of crops. They become familiar, among other things, with a host of different diseases and pests. They learn a lot, first hand, about the equipment, materials and methods used to control blights, bugs, rodents and weeds. They soon become veritable walking agricultural encyclopedias.

The Extension worker who misses an opportunity to "open the book" because of concern over being contaminated by contact with someone associated with industry is shortsighted for sure. He not only misses a chance to enlarge his own outlook but a chance to enlist the services of a "missionary" who might be encouraged to carry the official "word" to far places and a lot more farm folks than could possibly be reached without this able auxiliary assistance.

As for me, I salute the salesmen. Come up and see me some time fellows!

A DECLARATION FOR DECEMBER

"Next in importance to having a great aim is to know when to pull the trigger."
BEER BURNS

The Oregon City Enterprise-Courier, issue of October 25, 1950 carried a cut under the caption, "It Might Have Been Beer," showing the Eldriedge hop field afire.

Under date of October 26 both the Oregon Journal and The Oregonian carried detailed accounts, the first of which is quoted herewith, "Largest Hopyard Put to Torch. Clackamas County's largest hopyard, 120 acres at Park Place, is going up in smoke as employees of the Eldriedge farm put the torch to dried vines from which not a single pound of hops was harvested this year.

"The Park Place yard is one of Oregon's oldest and this year's idleness in production is said by old timers to be the first time in history that hops were not picked from the big yard on the Clackamas river bottoms.

"Last year, Eldriedge left about 20 acres unpicked to meet marketing agreements and flood water in 1948 killed off a large portion to take care of withholding acreage for that season."

FLOOD RELIEF

The Grants Pass Daily Courier, issue of October 20, 1950 carried the following item quoted in part herewith, "Hop Lands' Flood Loss Survey Set. Hop growers on the Lower River road have applied to the U. S. Soil Conservation service for relief from seasonal ravages of the Rogue river.

"The growers' action was revealed today by Jens Svinth, county agent and secretary of the Josephine County Soil Conservation district, following Wednesday evening's regular monthly meeting of the district board of supervisors.

"The board approved applications for conservation assistance, including a number from the hop growers whose lands border the Rogue. They are asking for assistance in stream-control because the river eats into their land along the bank each winter.

"The supervisors asked Resident Engineer Miller of the Soil Conservation service to make a survey to determine what can be done.

"The hop growers and another group of land-owners across the river have scheduled a meeting for next Wednesday night in the district offices in the courthouse annex."

Hop grower Raymond Lathrop was present at the meeting.

LEAVINGS LARGE

The Independence Enterprise, issue of October 27, 1950 carried a striking photo of an unpicked portion of the E. C. Horst ranch along with the following information, "In accordance with the hop marketing agreement, 170 acres of hops on the E. Clemens Horst ranch north of Independence were left unpicked. Frank Kennedy, ranch manager, estimates that this amounted to 1200 bales costing near $50,000 to produce. This is 15 per cent of the company's acreage in Oregon and California. The Pacific Coast Hop Control board this year designated 50 million pounds as saleable hops, making approximately 8 million pounds not available for marketing. A large part of this quantity was left on the vine as these were."
HOPS IN BREWING

SMALL BREWERS ASSOCIATION Bulletin No. 846 issued November 14, 1950 carried the following report by Peter J. F. Weber, the association's brewery consultant, "Yesterday I tasted solutions which were prepared by boiling samples of Hops with "wort." The wort was a laboratory all malt wort with about 6% extract. The flasks used in the tests were fitted with a condenser which also excluded the effect of air as much as possible.

"Forty percent of the Hops represented by the samples were considered to impart the flavor the Brewer wants in his Beer.

"That practical test can help you to choose the Hops best suited for your Beer. The wort need not be all malt, your "first wort" diluted with water will be as good or perhaps even better.

"Color, seed, leaf and stem content are used to guide Hop purchase.

"The odor is an important guide in Hop selection - but - the delicate fine odor of a good Hop is principally in the so-called "oil." That oil is volatile and in large part passes along with the steam vapors that go up the stack of the kettle.

"Steam distillation using inert materials would give us aromatics to add to our Beer - but - the condensed vapors from our usual copper stack are objectionable in odor and taste. Because of combination with metal, we collect and run the condensate into a drain to or through the floor of the Brew House.

"Alpha resin content is a guide to the Brewing value of Hops - but - one must decrease or increase the amount of Hops based upon alpha resin content if one is to take advantage of a variation.

"The alpha resin gives a pleasant bitter, but it is not the only bittering agent in Hops. It is the coarse and tannin like bitterness of Hops that can only be determined by a test such as is mentioned above.

"The better your choice, the more uniform and pleasing your Beer."

FOREIGN FIGURES

The following figures were found in WEEKLY SPECIALTY CROPS REVIEW of November 13, 1950: "GERMAN HOP CROPS UP - ALSO PRICE: The 1950 hop crop in Western Germany is running above a year ago. The official estimate at present is running between 16.6 million pounds to 17.6 million pounds. This compares with the 1949 crop in Germany of 12.6 million pounds. Recently the minimum export price of German hops has been set at around $1.54 a pound. This price is reported to be unusually high and it is believed will keep German hops from the world market.

"BRAZILIAN HOP CONSUMPTION UP: The Brazilian consumption of hops is running high. The present consumption is estimated at approximately 675 metric tons. Imports during 1949 into Brazil amounted to 632 metric tons. Most of the imports of hops going into Brazil come from the United States. The amount supplied during 1947 amounted to 89 per cent of the total imports into Brazil. The United States supplied 84 per cent in 1949, and the shipments during the forepart of 1950 from the United States amounted to around 96 per cent of Brazil's total imports of hops."

-3-
NOTES FROM ABROAD

THE BREWERS' JOURNAL AND HOP AND MALT TRADES' REVIEW, issue of June 21, 1950 carried the following items, quoted in part herewith:

Australia: "A Hops Production Conference was held recently in Hobart, those present including representatives of the Tasmanian, Victorian, and New South Wales Departments of Agriculture, of the Tasmanian Hop Producers' Association, and of various Departments of Health, Customs and Commerce. The reason for holding the conference was that approximately 30,000 cwt. of dried hops are required annually by Australian brewers, and only some 20,000 cwt. are produced in Australia.

"During the past two years approximately 10,000 cwt. have been annually imported from Great Britain and the United States, but the question of dollar expenditure and the risk of introducing the diseases of hops mosaic and downy mildew have made the Commonwealth Government anxious to stimulate increased local production. But it was pointed out during the course of discussions that one of the main reasons why it was difficult to increase local crops was that the labour available for harvesting had, at present, been exploited to the utmost limit. For any increased production it would undoubtedly be necessary to introduce mechanical harvesting.

"A spokesman of the Hop Growers' Association was also concerned that, although Australian brewers at present require 30,000 cwt. of dried hops annually, "in the possible event of beer consumption falling, a position might emerge in which growers would be overproducing—that is, if they should be able to increase the present production to meet requirements." But figures over the past years show that the Australian consumption of beer is steadily on the increase, drops being noted only in times of depression. A steady flow of migrants is increasing the population of the Commonwealth and it is logical to assume that the demand for beer will increase still further."

France: "A new commercial treaty with validity from May 1st, 1950, to April 30th, 1951, was recently signed by France and Czechoslovakia. During this period Czechoslovakia undertakes to supply, and France to import:

"Hops.—400 metric tons (1 metric ton = 2,204.6 lb.), of which 80 m.t. are for French overseas territories and 320 m.t. for Metropolitan France. Malt.—2,500 m.t., of which 1,500 are for overseas territories and 1,000 for Metropolitan France. Beer.—10,500 hectolitres (1 hectolitre = 22 gal.), 3,000 for the overseas territories and 7,500 for Metropolitan France.

"If Metropolitan France receives the above-mentioned 320 m.t. hops, her supply will notably improve, as during the last brewing season Czechoslovakia exported to France 150 m.t. only.

"The hop prices of the 1950 harvest are, so far, not known.

"The Customs duties on hops have been suspended. This decision is the result of repeated steps by the Brewers' Union and the Hop Merchants' Association. It is regretted, however, that the decision was taken with such a delay, that is, at a moment when most hops for the brewing season were already imported and a 15 per cent Customs duty had been paid on them. It is hoped that the suspension of the duty will soon be followed by a complete abolition.

"The hop import in 1949 amounted to 6,759 q., and came exclusively from Czechoslovakia (4,147 q.) and Western Germany (2,432 q.). Hop exports went only to the French overseas territories."
ENGLISH ACREAGE

From the above source we obtained the following figures as of June 1, 1949 and 1950.

<table>
<thead>
<tr>
<th>District</th>
<th>1950</th>
<th>1949</th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td>2,619</td>
<td>2,630</td>
</tr>
<tr>
<td>Mid</td>
<td>3,081</td>
<td>3,086</td>
</tr>
<tr>
<td>Weald</td>
<td>6,669</td>
<td>6,633</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12,369</strong></td>
<td><strong>12,319</strong></td>
</tr>
</tbody>
</table>

| Hants    | 666   | 677   |
| Surrey   | 114   | 114   |
| Sussex   | 2,140 | 2,167 |
| Hereford | 4,678 | 4,666 |
| Worchester | 2,176 | 2,168 |
| Other counties | 55 | 55 |
| **Grand Total** | **22,198** | **22,196** |

THERAPEUTIC ACTION OF HOPS

From the same source was quoted the following item of interest. "It is characteristic of science to-day that discoveries made in one field of research find application in others strikingly dissimilar. The fact that hops contain antiseptic principles has been known for a long number of years, but the significance of this outside brewing remained unrecognized until comparatively recently. The results obtained with penicillin and the publicity given to them stimulated workers in microbiology to search for other antibiotic substances produced by other organisms. Not only were moulds and bacteria tested for antibiotic propensities, but the field was enlarged by testing plant extracts for curative properties. It was inevitable that, at length, the potent antiseptic properties of hop extractives should be remembered, and recently considerable attention has been devoted to this subject.

"Considerable interest in such hop constituents has been aroused by the statements of some workers that some constituent of hop antiseptic is effective against tuberculosis. In view of the complications surrounding the correct administration of penicillin, and the somewhat disappointing results obtained with streptomycin after its premature acclamation, claims of new antibiotics must be regarded with the greatest caution, particularly as laboratory results in vitro are not always borne out by clinical results in vivo. Some workers, for instance, have claimed that the administration of lupulon to mice had a noticeable effect in reducing the number of tubercle bacteria, but that when tested in vitro lupulon was found relatively inferior to other anti-tuberculosis agents such as streptomycin. Other workers, on the other hand, have found that although lupulon is active in vitro against certain bacteria, its antibiotic effect is inhibited by the presence of horse serum. For this reason they do not consider that lupulon is suitable for clinical administration.

"From the brewing point of view it is interesting to note, however, that all workers on the medical aspects of hop extractives have confirmed Shimwell's original discovery that hop antiseptic is essentially "Gamicidal" and is only effective against Gram negatives if very much higher concentrations are used. It would appear that Shimwell's theory can now be safely elevated to the rank of a rule."
A PLUG FOR GRADES

WALLERSTEIN LABORATORIES COMMUNICATIONS for June, 1950 contained several abstracts of interest:

1. **Cultivation and Brewery Preparation of Hops In Various World Areas.**
   CAN. BEVERAGE REV. 19, No. 5: 42, 44, 46, 48, 51; No. 6: 42, 44, 46, 48 (1949).

   The discussion, in general, was quite general. The final paragraph is pertinent. "The probable value of hops is determined by physical examination and chemical analysis; the final test is their effect in beer. A hindrance in improving quality is that the grower is primarily interested in yield. The author considers it necessary, therefore, that a standard method of grading be established and that premium prices be given for the best hops."

HOP RESEARCH REVIEWED

2. **Hop Research and Quality Improvement.** Frank Rabak, COMMUNICATIONS, MASTER BREWERS ASSOCIATION OF AMERICA 11, No. 1: 4-6 (1950).

   "The author outlines the progress made in hop research since a program for the improvement of domestic hops was initiated by the United States Department of Agriculture in 1934."

   "Many problems still remain to be studied. Among these are the breeding of disease-resistant varieties, testing recent foreign varieties with a view to producing hops of milder flavor, improved methods of drying, soil studies, full utilization of brewing constituents, etc. The proposed Hop Research Foundation should be very valuable in this connection."

PROGRAM PARTICULARS


   "An outline is presented of the objectives and achievements of the coordinated hop research program of the United States."

FINDINGS FOR FORTY-NINE


   All three of the above authors agreed the crop was reduced in quantity by drought but that the quality was not adversely affected. Red spiders were prevalent. Several types of picking machines were in use which it is believed will lower picking costs. Jute baling cloth was in short supply as was warehouse space in London. The possibility of developing a British export trade in hops was suggested.
Myer believes "that in recent years oast management has not received sufficient care; despite the greater temperature control now available, mistakes in curing have increased. Also, sufficient attention does not seem to be given as to when the hops should be bagged after kilning."

According to Richardson, "A new insecticidal wash containing a phosphorus compound has been used for the last two seasons, known as a systemic wash because it penetrates the system of the plant through the leaves. So far it has not been applied after the burr stage, but if recent experiments indicate that it can be used later it will lower cost of production by reducing the number of applications necessary from five or six to two."

**BREWING TRIALS**

7. Brewin Trial With a New Variety Hop Ref. No. 0 T 48. L. Fletcher, J. Inst. Brewing 55, No. 6: 369-370 (1949). "A new hop variety 0 T 48, produced by Salmon by crossing Bramling with a wild Manitoba hop, was previously found to be moderately resistant to Verticillium wilt. Accordingly, small scale brewing trials were made in which beers were hopped with the new variety and with Goldings and Fuggles for purposes of comparison. The beers were tasted, and it was the unanimous opinion of the judges that the differences were scarcely detectable and that all the beers were of excellent flavor and of good hop character."

**BITTER ACIDS**

8. Le dosage des acides amers au cours de lamaturation du houblon. (Determination of Bitter Acids During The Ripening of Hops). J. de Wever and W. Emery. FERMENTATIO No. 5: 73-81 (1949). "Several varieties of hops were analyzed for their bitter acid content at intervals during the growth season, using the method of Verzele and Govaert. It was found that beta acid (lupulon) is formed before the alpha acid (humulon). The latter appears to be produced, at the end of ripening, at the expense of the former. Light favors the formation of alpha acid.

"In order to minimize loss of alpha acid, hops should be dried as soon as possible after harvesting. A careful study of the loss of bitter acids during drying is suggested."

**HOP RESEARCH IN GERMANY**

9. Querschnitt durch den gegenwärtigen Stand der Hopfenforschung (Cross Section of the Present State of Hop Research). Fritz Zattler. BRAUWISSENSCHAFT No. 12: 177-185 (1949). "Hop research in Germany is discussed under the headings disease control, propagation, and physiology.

"A large harvest in good condition depends on the control of hop diseases. In Germany, red spider and aphids are the most destructive insect pests, and the most dangerous disease is downy mildew; virus diseases are not common. Spraying with diethyl-p-nitrophenyl thiophosphate in conjunction with a copper preparation is recommended as a preventive measure.

"Experiments in hop propagation with a view to developing disease resistant varieties are conducted at the Hop Experimental Station at Hull in Germany. Hop cultivation is carried out either by selective breeding or by cross breeding; the latter method requires a long time before useful results can be obtained, and no strain has as yet been developed in Germany which has been applied
to large scale commercial use. On the other hand, important work in this connection has been carried out in England, Belgium, the United States, and Sweden which the author briefly outlines, and he concludes that Germany is lagging somewhat behind in this field.

"Knowledge on the subject of hop physiology is still incomplete. The author carried out experiments with Tettnang hops to determine the influence of potassium, phosphorus, and nitrogen in manure on the bitter substances content. He found that phosphoric acid was beneficial but that large quantities of potassium and especially of nitrogen were harmful. The relationship between cone size and bitter substances content was studied with Saaz and Hallertau hops, and it was found that cones of medium size had the highest content of bitter substances. Cones from the upper parts of the plant exhibited higher bitter substances content, showing that light and heat are favorable to the formation of these substances. Temperature was found to be of importance in connection with the time of development of the cones and the bitter substances."

HOP UTILIZATION

10. Über Möglichkeiten zur besseren Hopfenauswertung (Possibilities for Better Hop Utilization). Fritz Reiter. BRAUWELT No. 52B: 971* U9U9. "Improved hop utilization may be effected either by recovering bitter substances from the spent hops or from the trub. The former method may be carried out by means of hop extractors, repeated cooking of the spent hops in water, and the use of the resulting hop water. Breaking up the hops in a wet state will lead to better utilization. The hops are then only torn in the hop mill and not finely ground, and if air is kept out there is no danger of a decrease in the quality of the finished beer. The further utilization of hop trub may best be accomplished by adding the pressed hop trub to the lautertub."

SUIT FILED

The SALEM STATESMAN, issue of October 19, 1950 printed the following account, "Man Charged With Illegal Hops Purchase. A suit seeking $1,126 in damages on charges of violation of the federal agricultural marketing agreement act was filed by the federal government here today against Robert M. Bishop, (2698 Portland road) Salem."

"The suit charged Bishop bought 8,398 pounds of uncertified hops, valued at $6,585, from Warren Richardson, a Healdsburg, Calif., grower, for 20 cents a pound. The complaint said the market price at the time was 78½ cents a pound."

"The suit claimed Bishop bought 11,060 pounds of hops, valued at $7,246 for 20 cents a pound from Joseph J. Coney, a Santa Rosa, Calif., grower, while the market price was 65½ cents."

"The complaint pointed out that under the marketing agreement a person guilty of violating the act must forfeit to the treasury a sum equal to three times the value of the hops purchased."

GENEROUS GEORGE

In the August 1, 1949 issue of THE HOP PRESS we mentioned that the cover of the July, 1949 issue of the OREGON TAVERN NEWS consisted of a reproduction of an attractive oil painting entitled "The Hop Harvest." Prints of this pretty picture are available for free upon request to George Segal Company, Inc., 50 East 42nd Street, New York 17, New York.
January 10, 1951

STATUS QUO

Latin phrases are provocative because they are so pithy. Status quo, "the state existing", is not static! A philosophical plant physiologist once observed that growth, in plants, consisted of a continuous succession of progressive and retrogressive movements. There was no such thing as standing still! But the forward movements always exceeded the backward ones. Human progress seems to follow a similar pattern. So have all the organizations so far founded with the hope of helping hop growers. The present Marketing Agreement and the means by which it is implemented will serve as an excellent example.

It is not my purpose to ponder minor modifications in legal phraseology. Let's leave that to the lawyers. Making the Agreement permanent was of paramount importance. The inclusion of a minimum standard of quality was a significant stride in the right direction. The establishment of an allowable 15 per cent leaf and stem content was merely conforming with a requirement. The tolerance should be tightened. Such a suggestion, initiated by growers, would rebound to their credit. The definition of "seeded" hops is something that should be cause for concern. The present definition of "seedless" and "semi-seeded" are significant since they both represent a reasonable tolerance of from 0 to 3% and 3.1 to 6% respectively. In the "seeded" classification, "the sky's the limit" and that takes in quite a lot of territory when it comes to competition between foreign and domestic hops! The additional 10 per cent increase in issuance of supplemental certificates previous to the declaration of final saleable quantities speeded up shipments. It also hastened the accumulation of cash in the producers' pockets. The sound of silver tinkling in the old sugar bowl is sweet music to most men, both rural and urban!

The recent appointment by the Hop Control Board of a Committee On Amendments to the Hop Marketing Agreement is to be commended. Growers should get their "gripes" on paper and place them promptly in the hands of this committee along with any and all constructive suggestions and recommendations which it is hoped will help to make the work of the committee worthwhile.

The four suggested amendments, which were discussed in some detail in the November issue of THE HOPPER, deserve careful consideration by all growers who are producing hops under the provisions of the existing Hops Marketing Agreement and Order. Status Quo is not productive of progress!

A JAB FOR JANUARY

"Often a dash of judgment is better than a flash of genius."
HERMISTON HOPS

The WALLA WALLA UNION BULLETIN, issue of November 12, 1950 carried an interesting article entitled, "Hermiston's Climate and Soil Produce High-Quality Hops."

Hops have been grown at Hermiston since 1931. Hermiston Farms, Inc. assumed operation of 100 acres in 1948. An additional 100 acres will be planted out in 1951 by this organization of which Harvey Kaser is President and Pete Scymanski, Farm Manager. Other members of the firm are Howard Eismann and Ray Kerr.

VARIETY FOR VETERANS

Veteran on-farm trainees interested in hop production problems met for the third consecutive season at the High School at Gervais during the month of November. The following program serviced by Extension Service personnel was arranged.

November 7. Cover Crops. Rex Warren, Farm Crops Specialist
November 9. Wood Preservation. Charles R. Ross, Farm Forestry Specialist
November 16. Hop Insects and Their Control. Robert W. Every, Entomology Specialist
November 21. Irrigation and Drainage. Melvin A. Hagood, Irrigation Specialist
November 30. Fertilizers. Leroy E. Warner, Soil Conservation Specialist

PLANNING COUNCIL

The MONMOUTH HERALD, issue of November 9, 1950 reported the annual fall meeting of the Polk County Agricultural Planning Council.

The Specialty Crops sub-committee was scheduled to meet November 22 to discuss additional fertilizer trials in hop yards and the impending labor shortage problem.

Membership of the sub-committee follows:

4-year term: Earl Stonebrook, Dallas; Russell Hills and H. H. Withrow, Independence
3-year term: Frank Kennedy, Independence; Eldon Cates, Monmouth; J. E. Johnson, Salem
1-year term: Eldon Frink, Dallas; A. W. Crocker, Salem.

The names of hops growers are underlined.

HOPS IN HISTORY

William O. Douglas' recent book, "Of Men And Mountains" I found fascinating. In a chapter on "Yakima" he mentions Yakima valley hop yards which were flourishing in the early 1890s!
NEW REPRINT READY


"Experimental hop trials were conducted to determine the association of total soft resin content, alpha acid, beta fraction, and the ratio of alpha acid to total soft resin content between (1) varieties of hops and (2) various yield levels within the variety Fuggles, grown seedless.

"The results from the analyses of the data suggested highly significant differences between varieties for total soft resin content, alpha acid, beta fraction, and the ratio of alpha acid to total soft resin content.

"The results from the analyses of the data between significant yield level differences within each of two experiments on the variety Fuggles, grown seedless, indicated that there were no differences for total soft resin content, alpha acid, beta fraction, and the ratio of alpha acid to total soft resin content.

"The data presented in this paper suggest the use of chemical determinations of alpha acid in the evaluation of hops."

Reprints of the article are available upon request.

VINES VALUABLE

The WAPATO INDEPENDENT, issue of November 16, 1950 carried a timely article by Yakima County Extension Agent, John Keene, quoted herewith, "Hop Residue Has Fertilizer Value. Hop growers who burn their vines are burning dollars!

"The prevalence of fires in hop yards has prompted the agent to investigate the fertilizer value of hop residue, which has resulted in some rather startling figures. According to analytical work done by research workers at the experiment station at Prosser and at Oregon State college, one ton of leaves and stems contains 12.5 pounds of nitrogen and 6 pounds of phosphoric acid. One ton of cones contains 31.4 pounds of nitrogen and 22 pounds of phosphoric acid.

"A crop producing one ton of hops per acre, which is rather common in the Yakima valley, will yield an average of 2\frac{1}{2} tons of leaves and stems. The amount of plant food in 2\frac{1}{2} tons of leaves and stems is equivalent to that available in nearly 3 tons of barnyard manure. Compared to the current price of manure, the leaves and stems would be worth approximately $12.00 an acre for fertilizer.

"Where the cones, stems and leaves are unharvested, the residue contains about 65 pounds of nitrogen and 36 pounds of phosphoric acid to each acre, which is equivalent to about 6\frac{1}{2} tons of barnyard manure or approximately $26.00 per acre.

"This value exists on many acres of hops because about one-fifth of the total production remained unharvested this year due to marketing quotas.

"Some growers object to hop residues being left on the soil because of difficulties it presents to cultivation operations. This material can easily be broken up with brush shredding equipment. This equipment is readily available on a rental basis at $14.00 per hour, the capacity of which is about five acres an hour."
FERRY TALE

The SALEM STATESMAN, issue of November 21, 1950 carried the following "believe it or not" notice, "Ferry Found In Hop Yard Near St. Paul. Claude Smith of St. Paul wishes that whoever owns that ... ferry would come and take it out of his hop yard.

"The craft, which rancher Smith says floated into his yards from the Willamette river with the high water about two weeks ago, is a real, big-sized auto ferry. It's sorta old, though.

"'It's still floating around out there in one of my low fields,' said Smith Monday night. 'I'd like to get rid of it.' He wrote a letter to the Marion county court asking the court if it claimed the ferry.

"Marion County Judge Grant Murphy said that all of this county's ferries are accounted for. He said the court didn't know who or what owned the stray ferry."

PURCHASES PARTNERSHIP

The Silverton APPEAL TRIBUNE, issue of November 17, 1950 carried the following account, "Scymanski Jr. Is Part Owner Of Hermiston Farm. Pete Scymanski, Jr. has purchased an interest in the Hermiston Farms, Inc., hop acreage, near Hermiston, it was announced this week. Harvey Kaser of Evergreen district and Ray Kerr and Howard Eismann, both of Salem are the other owners.

"Pete and his wife have moved to the farm and will serve as resident managers. Kaser has been managing the farm since he bought an interest in it in 1947. He will work there for awhile to help build a new hop drier, to replace the one destroyed by fire last summer. The Kasers are moving their household goods from the Hermiston ranch to their home in Evergreen district."

DUSTING AT DALLAS

The Polk County Dusting Cooperative, President Charles Ross of Dallas reports, was responsible for having 22,000 acres of Austrian winter peas and vetch dusted at a cost of $1.68 per acre.

The report points up the possibility of a similar set-up for hop growers who may be interested in the application of fungicides and insecticides by airplane.

CROP ESTIMATES CONSIDERED

The SALEM CAPITAL JOURNAL, issue of November 16, 1950, in reporting on a meeting of the Hop Control Board in Portland indicated, "Uniform methods of obtaining accurate information of the crops of individual growers were discussed at a meeting of the United States Hop Growers association yesterday."

"E. L. Markell, San Francisco, secretary-manager of the association, said crop estimates were unsatisfactory, and the possibility of test harvests by field men in certain areas was discussed as an alternative."

QUOTAS SET

The Grants Pass DAILY COURIER, issue of November 17, 1950 reported, "Hop Market Quotas Set. Western hop growers may market 85.8 per cent of their 1950 crop, the Pacific Coast Hop Control board's allocation committee decided Thursday."

-1-
"That percentage will bring the year's production of 58,270,875 pounds down to the allowable 50,000,000 set by the Department of Agriculture for California, Oregon, Washington and Idaho. These four states produce virtually all of the nation's hops.

"Paul T. Rowell, Salem, managing agent for the industry-established control board, said that as a matter of fact only 834,712 pounds of the harvested crop could be sold.

"That, he said, is because the committee makes frequent production estimates and advises growers of the outlook. As a result, growers harvest only about what they think their allocation will be. This year they harvested only 1,556,766 pounds more than the government quota and nearly half of this latter was lost by fire.

"Growers market a sizable part of the crop before the final allocation is made. About 70 per cent of the 1950 crop has been sold, Rowell estimated.

"This year's production by states: Washington, 24,059,489 pounds; Oregon, 16,252,622 pounds; California, 16,101,436 pounds; Idaho, 1,851,323 pounds."

ACREAGE AMENDMENT

The INDEPENDENCE ENTERPRISE, issue of November 24, 1950 carried comment of concern to all American hop growers, quoted in part as follows, "Hop Men In Favor Of Curbs. Want new acreage held down until demand goes up. Hop growers attending a meeting in Portland last week favored a curb on new acreage until hops are actually needed according to Dean Walker who attended the session as chairman of the board of directors of the United States Hop Growers association.

"Even though present acreage is producing more hops than can be consumed, the acreage in the four western states that is devoted to the production of hops is being increased at an alarming rate, Walker declared.

"This over production of hops, Walker explained, has been partly stimulated by a new practice of raising hops for certificates and not harvesting them.

"The problem created by this practice was referred to a special committee of the hop control board which will seek the aid of government experts in formulating amendments to the marketing agreement. If these proposed amendments are approved by the secretary of agriculture they will be subject to public hearings in the three Pacific coast states. Before becoming effective they must have a favorable vote of two-thirds of the growers in these states."

DIVERSION PRIVILEGE DISLIKED

The TOPPENISH REVIEW, issue of November 23, 1950 carried the following account, "Hop Growers Will Seek Amendment. An amendment to require that hop growers harvest 80 per cent of their crop to qualify for government allocation was endorsed last Friday at a meeting of the Hop Control Board in Portland. Attending from Toppenish was Mrs. Laverna Aries.

"The proposed amendment will be submitted to the department of agriculture, not before February, 1951. It was reported during the session that 83 yards in the three Northwest states were not harvested at all but were sold for allocation purposes only. This number included 49 Oregon yards and 30 Washington yards plus several in Idaho."
"Also at the meeting the board agreed on a 14.2% cut in the marketing agreement. The board went on record as declaring the hop agreement unworkable in its present form.

"Hop yards in the four Western states of Washington, Oregon, California and Idaho cover 38,964 acres of land and are operated by 346 owners, 345 of which are in this state. The board also was told that 3,610 bales of hops were lost by fire during the past season."

**HOP DISEASE CONFERENCE**

The HEREFORDSHIRE AGRICULTURAL JOURNAL, Vol. II, No. 3, Autumn, 1949 was devoted in its entirety to the "Official Report on the Proceedings of the Conference on the Diseases of Hops held at Hereford, on 20th January, 1949." The following papers are presented:

1. "Diseases of Hops" by W. G. Keyworth and J. Paine
   a. A discussion of Virus diseases included: (1) mechanical transmission, (2) transmission by grafting, (3) transmission by insects. Specific mention is made of nettlehead, mosaic, split leaf blotch, chlorotic disease, leaf curl and fluffy tip.
   b. A discussion of fungal diseases included: verticillium wilt, phytophthora root rot, amilliaria root rot and canker.

2. "Some Other Diseases Of Hops" by N. C. Preston. This paper dealt with:
   - downy mildew, powdery mildew, cladosporium disease and grey mould or botrytis.

3. "A Note On The Resistance Of New Varieties To Diseases" by E. S. Salmon. Reference is made to mosaic, downy mildew and verticillium wilt.

4. "Pests Of Hops" by H. C. F. Newton. Reference is made to the possible role of insects in the spread of viruses. Five specific insect pests of hops are mentioned: (1) hop damson aphids or "fly", (2) red spider, (3) flea beetle, (4) strig maggot, and (5) root weevil. A lengthy list of the pests of hops is given.


7. "New Varieties Of Hops In The West Midlands" by J. Nott mentions the following: Bullion Hop, Northern Brewer, John Ford, Early Promise, Early Choice, Sunshine, Malling Midseason and Concord Hop. The extent to which these varieties are subject to various diseases is noted. None such, one of the verticillium wilt resistant varieties was tried but later removed "because of its low cropping record and unsatisfactory valuation."

"In England the largest acreage of any new variety is that of Brewer's Gold (C 9a), but after two years' growing in the Teme Valley it was found, under the system of cultivation there adopted, to be too late in season, and too "housey" for easy picking, and so it was discontinued. The varieties L 21 and College Cluster (N 15 bis) were, as far as growing was concerned, both heavy croppers and easy to manage. They were grubbed as it was considered that the hops were not viewed with sufficient enthusiasm by the trade."

Pride of Kent, Quality Hop, O.K. 40, W.F.G. 19, and O.L. 60 are under trial and considered attractive and worthy of further tests.

**YAKIMA HOPS**

The SPOKESMAN-REVIEW, issue of November 5, 1950 carried a full-page illustrated article by Evalyn B. Wall entitled, "Yakima Valley -- Biggest Hop-Growing Area."
NOTES FROM ABROAD

THE BREWERS' JOURNAL AND HOP AND MALT TRADES' REVIEW for August 16, 1950 carried the following comment:

New Zealand: "Although the recent crop of hops in the Nelson district was up to average and should be sufficient for the needs of New Zealand breweries, there is likely to be a shortage for other users. However, the brewery companies obtain their supplies through allocations of the Hop Marketing Board, and secure priority over domestic purchasers."

HOP PROPAGATION

WALLERSTEIN LABORATORIES COMMUNICATIONS for September, 1950 contained an important contribution to this important subject by W. G. Keyworth entitled, "Hop Propagation in Great Britain." This well-illustrated article discusses:

(1) normal commercial practice, (2) the ministry of agriculture certification scheme and the progressive wilt of hops order, (3) the need for new methods of propagation, (4) the use of softwood cuttings, (5) layering, (6) production of bedded sets from layer cuttings, (7) discussion of layering methods.

The methods discussed are important in connection with research on hop diseases, particularly nettlehead, mosaic and verticillium wilt, and in experimental breeding.

HOP CHEMISTRY

From the above source the following abstracts were obtained:

1. "The Chemistry of Hops" by T. K. Walker. BREWERS' GUARDIAN 79, No. 1: 18-27 (1950) The literature on hop constituents is historieally reviewed. Etting in 1876 found that hop tannin contains residues of phloroglucinol and of pyrocatechuic acid. It thus differs from the ordinary tannin of commerce which is gallotannin. Hop tannin merits further investigation because of its effect on the coagulation of proteins in wort.

"Hops contain a considerable amount of hydrated pectin (ca. 12%), soluble in boiling water. The resins, oil, and wax, which are soluble in ether, comprise about 33% of the weight of the cones. Nitrogenous substances, tannin, sugar, and inorganic acids, extractable by cold water, amount to about 12%.

"The principal constituent of the essential oil of hops is the sesquiterpene humulene. The more volatile constituents of hop oil are lost during the first 20 minutes of boiling in the kettle, but a nonvolatile oxidation product of the oil is able to impart some flavor to the wort.

"The resinous constituents of the hop cone are the a and b soft resins and the g or hard resin. Humulon is separable from the a-resin and lupulon from the b-resin. The b-resin is a very complex mixture containing also constituents of the essential oil. Humulon and lupulon possess antiseptic potency, but both are relatively unstable. The preservative potency of lupulon is 98% destroyed during boiling with wort because of adsorption on the wort protein. Hence the preservative effect of hops on beer is due solely to humulon, which is also adsorbed to some extent and undergoes other changes. The preservative value of the hop antiseptic in beer is only from 10 to 20% of that of the quantity of humulon originally introduced."
"Govaert and Verzele were able to separate two products obtained from humulon on boiling, soft resin A and soft resin B. Resin A is isomeric with humulon and is called isohumulon. It has also been identified in beer."

2. "Der Bitterwert des Hopfens (Bittering Value of Hops)," K. Silbereisen. BRAUEREI 3, No. 1: 233-238; No. 2: 238; No. 3: 204 (1949) "In times of shortage, German brewers have been obliged to use old hops which normally would be rejected. Accordingly, the question arose of how to determine the suitability of old hops for brewing. Old hops often have an off-odor and in that case can only be used if brewing trials indicate that the unpleasant aroma completely disappears on brewing. Very frequently they have no aroma at all; although this is undesirable for the production of a fine beer, they may still be used if their bittering power is not too low. The bitter substances are the most important components of hops from the brewing point of view, and any determination of suitability of hops for brewing centers around the estimation of bittering substances.

"The bittering value of a large number of old hops was determined according to the method developed by Kolbach; old hops are defined as hops containing more than 15% hard resin. The moisture content of old hops is approximately the same as that of fresh hops, but their bittering substances content averages 7% which is only half of that of fresh hops. No relationship was found between the time of storage and the bitter value. The conditions of storage are important; hops should be stored in the cold and not be exposed to air. Over a period of years, however, oxidation cannot be avoided."

3. "Considérations techniques sur le houblonnage (Technical Considerations on Hopping)," Roger Héiard. PETIT J. BRASSER 58, No. 2297: 139-141 (1950) "Recent methods of improving the yield of bitter substances from hops are described.

"In the preparation of hop extracts the hops are first dried in vacuum, then finely crushed in a carbon dioxide atmosphere to prevent oxidation of resins. An aqueous solution of the water-soluble constituents, of which tannin is the most important, is then obtained, as well as a solution in a suitable organic solvent of the essential oils and resins. These two solutions are then concentrated by evaporation.

"Mechanical means for increasing the extent of extraction from whole hops during brewing have also been employed. The first apparatus of this type of significance was designed by Halut. A more recent extractor was patented by Strnisko.

"The most recent method for hopping is that of Govaert whose procedure involves the transformation of the α-acid (humulon) to isohumulon. Much of the original humulon is otherwise lost."

SPENT HOPS

From the same source we obtained the following information: "Disposal of Spent Brewing Materials," M. W. Plumpton. BREWERS' GUARDIAN 79, No. 4: 67-81 (1950) "The removal of spent hops from the hop backs can be carried out in more or less the same manner as for brewers' grains, manually, mechanically, or by pumping. There are alternative types of hop separators or strainers which have the advantage of continuous straining. The hops are also pressed and then dried. The dried hops must be passed over a jigger screen to remove the strigs which cause digestive difficulties in cattle. From the screen they are passed to baling machines where they are packed in bags under pressure. Dried hops are used in feeds and in fertilizers."
A BETTER MOUSETRAP

Socrates, celebrated Greek philosopher, was no sap! He was born in Athens in 469 B.C. He rambled about a bit in his youth as a foot soldier at Potidaea, Delium and Amphipolis. In age he became somewhat sedentary except for peri-patetic preaching in Athens' alleys. At the age of 70 his fellow citizens, to show their appreciation of his efforts in their behalf, handed him the hemlock. Similar rewards are occasionally moted out in modern times.

Old Socrates used to say, "Why travel, even occasionally, to see the world or to contact one's contemporaries?" If a fellow fussed around long enough, on his own doorstep, engrossed in purely domestic duty citizens of substance, sooner or later, would come to see him. He could then 'pump' them, in peace and quiet, for information about where they had been, what they had done, what they had seen and what was said. He could thus, economically, get at least a second-hand account of what, if anything, was going on.

How many men from out-of-state took the trouble of a tiresome trip to Athens to see Old Soc is not a matter of record. Socrates' contempt for out-of-state travel, however, stuck!

A long time later another student of the stay-at-home school remarked, "If a man make even a better mousetrap, the world will soon wear a path to his porch." Phooey! I prefer the preachment that although a rolling stone may gather no moss it does acquire an attractive polish!

Marco Polo proves my point. This early Italian itinerant made known to a wondering Europe the magnificence of the eastern world. Polo profited personally by the experience and, although he was imprisoned for his pains, the tales he told the home folks served to stimulate them to go places and do things! Had his trips never been taken the West might have remained in ignorance of the East for another century or so.

All this palaver is preparatory to a statement in defense of the truth about out-of-state travel. It should not be hard to figure out that I'm for it! On occasion, even County Extension Agents should not be exempt. Administrative justification should not be confined to the question of cost. It should include an accounting of the worthwhile things that are accomplished!

After all, the only thing a better mousetrap can do is to catch more mice!

A FABLE FOR FEBRUARY

"The turtle doesn't make any progress until he sticks his neck out."
HOP GROWERS CONFERENCE

DATE:  Friday, February 23, 1951
TIME:  9:30 A.M. to 4:30 P.M.
PLACE: Room 105 Memorial Union Building, Oregon State College

G. R. Hoerner, Hop Specialist, Chairman

A WORD OF WELCOME
F. E. Price, Dean and Director

THE ECONOMICS OF HOP PRODUCTION
M. D. Thomas, Agricultural Economist

REPORT ON HOP RESEARCH
K. R. Keller, Agronomist, U.S.D.A.
A. I. Dow, Assistant Agronomist, U.S.D.A.
Prosser, Washington
G. R. Hoerner, Plant Pathologist, U.S.D.A.

OPEN FORUM
A period to be devoted to an informal discussion of the problems of hop producers

MEMBERS OF PANEL
R. W. Every, Entomology Specialist
R. E. Fore, Agronomist
K. A. Hagood, Irrigation Specialist
A. S. King, Soil Conservation Specialist
Rex Warren, Farm Crops Specialist

LUNCHEON
Memorial Union Tea Room

THE CHEMICAL EVALUATION OF HOPS
R. A. Magee, Assistant Chemist, U.S.D.A.

A REPORT ON THE STUDY OF HOP QUALITY
D. E. Bullis, Chemist

FIRE PREVENTION AS A FACTOR IN PROFITABLE HOP PRODUCTION
Lee R. Hansen, Agronomist, Pacific Coast Borax Company
Portland, Oregon

HOP MARKETING AGREEMENT AMENDMENTS
P. T. Rowell, Managing Agent, Hop Control Board
Salem, Oregon
LEAF AND STEM

As of October 25, 1950 the weighted average percentages of leaf and stem content were reported as follows:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>CALIFORNIA</th>
<th>IDAHO</th>
<th>OREGON</th>
<th>WASHINGTON</th>
<th>ALL STATES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>3.99</td>
<td>2.21</td>
<td>5.27</td>
<td>3.22</td>
<td>3.90</td>
</tr>
<tr>
<td>1949</td>
<td>3.47</td>
<td>2.37</td>
<td>5.55</td>
<td>3.33</td>
<td>3.90</td>
</tr>
<tr>
<td>1948</td>
<td>5.06</td>
<td>7.19</td>
<td>4.87</td>
<td>5.79</td>
<td>4.20</td>
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<tr>
<td>1947</td>
<td>6.17</td>
<td>8.09</td>
<td>5.28</td>
<td>6.42</td>
<td>6.05</td>
</tr>
</tbody>
</table>

This is the cleanest picked crop on record. Slightly over 1 percent of the 1949 crop carried over 8 percent leaves and stems compared with about 12.2 percent in 1948, 23.2 in 1947, 18.7 in 1946 and 74.7 in 1945.

SCOREBOARD ON SEED

As of October 25, 1950 the percentages of seed content were summarized as follows:

<table>
<thead>
<tr>
<th>SEED CONTENT</th>
<th>CALIFORNIA</th>
<th>IDAHO</th>
<th>OREGON</th>
<th>WASHINGTON</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEEDED</td>
<td>46.3 28.3 34.1</td>
<td>4.3 1.4 89.5 90.6 95.8</td>
<td>30.3 9.3 29.8</td>
<td></td>
</tr>
<tr>
<td>SEMI-SEEDLESS</td>
<td>16.6 8.4 4.6</td>
<td>14.0 39.6 3.3 4.3 1.7</td>
<td>14.7 15.7 17.6</td>
<td></td>
</tr>
<tr>
<td>SEEDLESS</td>
<td>37.1 63.3 61.3</td>
<td>81.7 59.0 7.2 5.1 2.5</td>
<td>55.0 75.0 52.6</td>
<td></td>
</tr>
</tbody>
</table>

Seedless hops may contain not over 3% seeds, semi-seedless 3.1% to 6.0% and seeded over 6%.

BREWER - GROWERS

During 1950 there were a total of 5 brewer-growers on record in the United States; four in California and one in Washington. They operated a total of 884.89 acres in California which produced a total of 1,563,756 pounds of hops. The acreage in Washington was 187.98 and the production 454,715 pounds. Average production per acre in California was 1767 pounds; in Washington, 2419 pounds.

HOP INSPECTION

MARKETING ACTIVITIES is a processed publication published by U.S.D.A. Production and Marketing Administration, Washington D.C. for which Eaton Norman Hummon may well be proud.

The November, 1950 issue carried an illustrated article by J. E. Barr entitled, "Inspection Assures Hop Quality." This is recommended reading for growers, dealers and brewers.
PIONEER PASSES

The YAKIMA REPUBLIC, issue of December 8, 1950 carried the following account, quoted in part herewith, "Death Takes Clyde Livesley. Clyde V. Livesley, 61, pioneer Yakima hop broker, died Thursday evening in Yakima Valley Memorial hospital following an extended illness.

"His father, Robert Livesley, was the first hop broker in Yakima, and founded the Robert Livesley & Co. here in 1906. When Mr. Livesley first went to work for his father, he managed numerous hop yards in the area.

"Since the start of the company in Yakima, it has been a dealer for the Hugo V. Loewi company of New York city."

GEORGE GONE

The YAKIMA HERALD, December 19, 1950 announced, "Firm Continues Despite Death. Despite the unexpected death of George Segal of New York, eastern sales representative for the Washington State Hop Producers, Inc., of Yakima, the George Segal company is expected to carry on as usual.

"Marlow Lesh, president of the association, learned of Segal's death within 15 minutes after a long distance telephone conversation with him yesterday. Lesh said Segal had extensive hop yard holdings from Yakima to Grandview.

"Evaluating his friend, Lesh said Segal was energetic, generous, dependable and thorough. It was the last characteristic of keeping his employees well informed that enables the organization to continue normally.

"William Sipp, with a background of salesman, chief of sales and office manager, becomes president of the company, Lesh said. The Segal organization has been one of the three most active hop buyers in the United States.

"Segal's work extended beyond buying and selling hops. As an active and well-known producer with yards in this valley he was a booster for natural organic fertilizers. He also patented a process of freezing hops to be dried later. He had represented the valley association since 1938."

HOW AMERICA LIVES

LADIES' HOME JOURNAL, issue of January 1951, under the above title, carried an interesting illustrated account of the successful second marriage of the widow of Duke Peterson, one-time Santa Rosa, California hop rancher.

DAMAGE SUIT FILED

The YAKIMA HERALD, issue of December 10, 1950 reported that, "Worker Files Action For Hop Ranch Fall. Trial by jury of an $11,000 damage suit against Don Houghton, hop rancher, will begin in Judge Dolph Barnett's department of superior court Monday at 9:30 a.m.

"Plaintiff in the action is Walter N. Franck, who is asking the damages as a result of injuries allegedly received in an accident in Houghton's hop yard.

"Knocked from a 14 1/2-foot scaffolding by a hop wire, he landed on a wagon tongue and broke his back, Franck alleged in the complaint."

Insurance to cover such contingencies might prove to be a good investment for hop growers.
HOP FESTIVAL

The BREWERS JOURNAL AND HOP AND MALT TRADES' REVIEW, issue of September 20, 1950 gave a glowing account of "Whitebread's Hop Festival."

English brewers were reported to prefer hand-picked hops. Reasons for this preference were not outlined.

A MATTER OF TASTE

YOUR LIFE, issue of February, 1950 carried the following item by Paul Steiner, "The Ladies—God Bless Them! Strong men blushed at the beer tasting contest staged as part of the annual hop festival held in Paddock Wood, England, when the winner turned out to be a 46-year-old mother of three children."

HOP NUTRITION

FARMING for August, 1949 printed a very informative article, number 10 of a series on "Nutrition of Farm Crops", "The Nutrition of The Hop Crop" by A. H. Burgess. The material is so 'meaty' it is difficult to abstract it adequately. Topics included are: abundant nutrients and water needed, the root system, nutrient requirements, the nitrogen supply, other mineral nutrients, and suggested manurial schemes. Excellent illustrations of leaves showing phosphorus, potash, and magnesium deficiency symptoms are included.

WORK AT WYE

ANNUAL REPORT, of the Department of Hop Research at Wye College for 1949 included the following items under general report: 1. Manurial experiments (a) nitrogenous manuring, (b) long term manurial trial, (c) mineral deficiency plots, (d) magnesium deficiency in the hop, (e) the effect of soil acidity on the growth of hops, (f) the effect of cutting bines at picking time. 2. Hop Varieties (a) selection of Golding Hops (Bramling, Canterbury Goldings, Cobbs, Early Bird, Eastwell Golding, Rodmersham Golding), (b) hop breeding, (c) genetic studies, (d) cytology. 3. Hop Verticillium wilt investigations. 4. Processing of hops (a) deterioration of hops during storage, (b) picking machines. Articles included were:

1. "Hop Manuring and Cultivation Experiments" by A. H. Burgess. "An account is given of combined manurial and cultivation experiments on hops, carried out from 1930 to 1948. The manurial experiments deal with (1) comparison of inorganic and organic nitrogenous manure; (2) times of application of sulphate of ammonia, and (3) the total amount of nitrogenous manure applied. The cultivation experiments are concerned with (1) the time of cessation of deep cultivation and (2) autumn ploughing.

"During the first period of seven years the use of inorganic as compared with organic nitrogenous manure produced no significant difference in yield; toward the end of the experiment, however, secondary effects of the treatment caused the yields from the inorganic manured plots to fall below those receiving organic manure."

"No significant difference in yield was produced by the different times of application of sulphate of ammonia covered by the experiment."

"Different amounts of sulphate of ammonia, with an extreme variation of 40 lb. N per acre, gave significant differences in some years; the results
varied somewhat but there appears to an indication that in the particular
garden where the experiments were carried out, the optimum annual application
of nitrogen for each of the three varieties of hops used lies in the region of
270 lb. per acre.

"The results of the experiments on cultivation showed no significant dif-
ference in yield of hops from the various treatments."

Varieties involved were: Canterbury Goldings, Cobbs, and Early Birds.

The incidence of mosaic disease was not influenced by either manurial or
cultivation treatments. Rootstocks infected by downy mildew became decayed
and had to be removed.

2. "Experiments On Magnesium Deficiency In The Hop Plant" by F. C.
Thompson, E. G. Cripps, and A. H. Burgess. "It has been found that magnesium
deficiency can occur in hops on neutral or alkaline soil where the level of
available magnesium is moderately high. Under such conditions the governing
factor appears to be the level of available potassium in the soil, and the
deficiency has been controlled by applying magnesium sulphate (as Epsom salts)
to the soil and omitting potash fertilizers. In experimental plots the effect
of potassium on depressing the uptake of magnesium has been shown. On these
plots soil applications of Epsom salts, in the presence of heavy dressings of
potash, have not had any marked effect on magnesium uptake as shown by leaf
analysis in June and July; later work has shown, however, that leaf magnesium
shows an appreciable rise towards the end of the growing season where Epsom
salts have been applied under these conditions.

"The data obtained from the work described in this paper has enabled
magnesium deficiency to be diagnosed in other hop gardens and in such cases a
marked response has resulted from soil applications of magnesium coupled with
the omission of potash fertilizers.

"The symptoms of potassium-induced magnesium deficiency on alkaline soil
have so far proved consistent and have differed from those found in hops grow-
ing under acid conditions where both leaf magnesium and available magnesium in
the soil have been low. In the former case the dominant symptom is a chlorosis
of the leaf and leaf scorch is largely absent; on acid soils a severe marginal
and interveinal scorch develops and can appear relatively early in the season,
but these symptoms are probably due to a complex of 'acidity factors' of which
magnesium deficiency can be one. The effect of nitrogen on symptom expression
must also be considered, as Bould (1949) has shown recently that apples at low
magnesium levels can develop different leaf symptoms with high and low levels
of nitrogen.

"The experimental plots are being continued to study further the effect
of the potassium and nitrogen levels on the incidence of magnesium deficiency,
and the development of leaf symptoms."

on manganese toxicity and induced iron deficiency" by F. C. Thompson, E. G.
Cripps and A. H. Burgess. "It is evident that manganese toxicity can be one
factor affecting the growth of hops on certain acid soils on the High Weald of Kent.
In some cases the uptake of manganese may be so high that an induced
iron deficiency develops due to ion antagonism.

"This is of interest because although manganese induced iron deficiency
has been developed in a number of pot culture experiments (see review by Wallace
and Hewitt, 1947) it has seldom been recorded in a field crop. Nicholas (1949)
has reported on the effects of manganese toxicity on potatoes in a field experiment on acid soil, but in this experiment no symptoms of iron deficiency were found. It is noteworthy, however, that the contents of manganese he found in foliage samples, ranged from 303 to 639 p.p.m. in dry matter. In the hop, symptoms of chlorosis and scorch have been observed at manganese contents ranging from 300 to 600 p.p.m., but induced iron deficiency has only been found when the manganese content has been well above 1,000 p.p.m. Walker and Thompson (1919) have recently reported cases of induced iron deficiency in tomato seedlings, and they also found that these were associated with very high manganese contents of 1,850 p.p.m.

"As stated earlier, under field conditions soil acidity can give rise to a range of visual symptoms in hops; one symptom, however, associated with high leaf manganese and not so far found with other known nutritional disorders, is a pale leaf with necrotic speckling between the veins in spots which tend to coalesce and form a blotchy scorch. The speckling has been noted particularly on young plants; on established hops irregular shaped dead areas occur on the leaf.

"From this preliminary work it appears that manganese toxicity symptoms in the hop plant are quite distinct from, and not necessarily associated with, those of iron deficiency. This is in agreement with the results of recent experiments (Hewitt, 1919) and contrary to the findings of Somers and Shive (1912) and others."

4. "The Cytology of The Hop. A Critical Review of Published Work" by S. O. S. Dark. This is by far the best summary we have seen. There is a list of 19 valuable references.

A leaflet published in January 1919, "Two New Hops Resistant to Verticillium Wilt" by E. S. Salmon was discussed as follows, "The fungus Verticillium albo-atrum Reinke and Berth, is the cause of a minor disease of the hop called "Fluctuating Wilt"; according to Dr. W. G. Keyworth (HEREFORDSHIRE AGRIC. JOURNAL Vol. II, p. 191 (1918), it seems probable that a mutant of this strain arose about 1930 at one farm in Kent, which proved able to cause the major and devastating disease known as 'Progressive Wilt'. This latter form of the disease has in many cases made the growing of hops in certain gardens impossible over a wide area around Paddock Wood, Kent. The Fuggle proved to be a hundred per cent susceptible and Dr. Keyworth's researches have shown that no real resistance is possessed by any of the other established varieties. In the proved failure to control the disease on a commercial scale by field sanitation or the use of soil sterilants, Dr. Keyworth's recent discovery that certain of the New Varieties raised at Wye College possess definite degrees of resistance is of outstanding importance. Over 200 varieties selected as showing 'moderate resistance' combined with other desirable characters are described in the Leaflet, viz Ref. No. OR55, which has been named KEYWORTH'S MIDSEASON, and Ref. No. OR7, KEYWORTH'S EARLY. Under the auspices of the Hops Marketing Board and the National Farmers' Union both varieties have been propagated on a large scale and rooted sets made available to those growers whose gardens (on over 100 yards) are wilt-infected. Growers have quickly availed themselves of the opportunity to bring into cultivation again the abandoned hop-gardens and the two resistant varieties have been, and are still being, rapidly planted; in 1919 29 pockets were marketed."

SWEET DREAMS

The SELIAH VALLEY OPTIMIST, issue of January 4, 1951 reports, "Hop Pillow Mailed. A hop-filled pillow is on its way from Selah to Rolla, Mo., to give relief to a hay fever sufferer. Mrs. H. L. Flohr mailed the pillow to an aunt in Rolla who was advised by her physician to try a pillow filled with hops."
OREGON HOP ACREAGE - 1950

MARION

POLK

CLACKAMS

JOSEPHINE

BENTON

LINN

LANE

JACKSON

UMATILLA

YAMHILL

WASHINGTON

MALHEUR
March 15, 1951

COGENT CONFERENCE

A sage once said, "One of the tragedies of our time is the gap between what the experts know and what the people think; the sometimes disastrous time-lag between the discovery, report and application."

Some such thinking must have motivated the "master minds" of the Oregon Extension Service who, twenty-eight years ago, prepared plans for the first state-wide Agricultural Economic Conference which was held during 1923.

A majority of the recommendations of the many conference committees have, in the interim, been resolved into realities. The effects of emphasis being placed on a variety of animal and plant production problems and certain agricultural practices have resulted in a substitution of plenty in place of possible poverty. Oregon's agricultural income has been augmented. Oregon's farmers, on the whole, have fared well.

Some hard-headed thinking was called for on the part of members of farm families, field workers and the central office staff of the Extension Service.

Thoughts are actions in embryo! Appropriate action is a natural consequence of right thinking!

Discussion, decision, plan, action are four simple words which have become the basis of the most meritorious contributions of the Extension Service to the enrichment of rural life. The important point is that the potent programs produced by the first Agricultural Economic Conference resulted from active participation on the part of farm people.

A second such Conference has recently been set up. Eleven separate subject matter committees are contemplated. The Committee on Farm Crops is comprised of several sub-committees, one of which deals with hops! An initial organization meeting was held on campus February 16. Membership comprises: F. A. Christie, R. J. Corbett, Howard Eismann, G. R. Hoerner, F. W. Lucht, Joseph Serres, H. H. Withrow.

A second meeting will be held, it is hoped, sometime in July. The final report will be presented in January, 1952.

The committee solicits suggestions from anyone directly or indirectly interested in the future welfare of Oregon's important hop-growing industry.

MEDITATION FOR MARCH

"Action will remove the doubt that theory cannot solve."
HOP GROWERS CONVENTION

The Fifth Annual Convention of the U. S. Hop Growers Association held at San Francisco, February 7 to 9 was fully up to the usual high standard.

Attendance reached around four hundred. Despite unusually attractive entertainment features, which Fairmont Hotel facilities made possible, the business sessions were well attended.

Ed Markell and the membership of the various convention committees are to be congratulated for doing a big job well.

Oregon's Extension Hop Specialist arranged an exhibit of samples of domestic hops and appeared on the program under a session devoted to "brewer-grower problems of mutual interest" to discuss, "Experimental work with Hops-Objectives and Progress."

VACANCIES FILLED

Under date of February 2, 1951, U.S.D.A., Production and Marketing Administration reported, "Hop Control Board Vacancies Filled: The U. S. Department of Agriculture today announced the selection of members and alternate members to serve on the Hop Control Board—which administers the Federal marketing agreement and order regulating the handling of hops and hop products produced in Oregon, California, Washington, and Idaho—filling vacancies caused by the resignations of John I. Haas, grower-dealer of Washington, D.C. and Tom Tanner, grower, of Sloughhouse, Calif.; and by the death of George Segal, New York hop dealer.


"Each appointment becomes effective as soon as the Secretary receives notification that the appointee has accepted. The term of members appointed today will end on March 31, 1952, or as soon thereafter as successors have been selected and have accepted.

"The full Hop Control Board consists of 18 members: growers having 9 representatives; grower-dealers, 2; dealers, 3; and brewers, 1. Of the 9 grower members, 3 represent growers in the States of Oregon and Idaho; 3, California; and 3, Washington."

HOP HANDLER

SICK'S ENTERPRISER for December 1950 ran a "success story" for sure. "In the reign of Charles I, when women used to work in breweries, a young girl went to London to work as a tub-woman in a brewing plant. Her job was to carry tubs of materials around the brewery.

"Her good looks so impressed the Brewer that he married her. Not long afterwards, he died, leaving her a considerable fortune. She placed her business affairs in the care of a Mr. Hyde, a lawyer, whom she afterwards married.

"This Mr. Hyde became the Earl of Clarendon, and the former tub-woman became a Countess. Their only daughter became the wife of James II and the mother of Mary and Anne, both subsequently Queens of England.

"Not bad for a young girl who used to work in a brewery!"
FIGURES FOR 1950

<table>
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<th>STATE</th>
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<th>NO. ACRES</th>
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<td>13</td>
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*Information not available

(1) Includes 63.47 not operated.

GROWER—DEALERS 1950

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<td>New York</td>
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<td>Oregon</td>
<td>6</td>
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<tr>
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<td><strong>11,220,317</strong></td>
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</table>

N.B. Above data incomplete.

BREWER — GROWER

SICK'S ENTERPRISER, house organ for Sick's Brewery Enterprises, in the December, 1950 issue ran an excellent aerial photo of their hop farm near Sunnyside, Washington, 145 acres of Early Clusters yielded 12.4 bales and 49 acres of Late Clusters yielded 11 bales per acre.

EDUCATOR GOES COMMERCIAL

The SUNNYSIDE SUN, issue of February 1, 1951 announced, "New Hop Official. Yakima Chief ranches, Inc., Mabton, has gained a new secretary, it was reported from Pullman last week. Edward C. Kundert, assistant professor of foreign languages at Washington State college, has resigned his faculty post effective February 1 to take the hop position.

"Kundert's headquarters will be in Mabton. Kundert has been on the W.S.C. faculty since 1929. Jess Hernandez, who has been secretary for the past several years, has taken a job of management of the hop yard known as the Mar hop yard west of Mabton."
FLOOD DAMAGE

The SALEM STATESMAN, issue of December 11, 1950 reported, "Flooded Hopyards Suffer in California. That hopyards in the Sacramento valley were injured by November floods is being shown by reports now coming in. Poles and trellises were washed away and silt and debris were left in their place in many of the valley yards. However, over-all damage is believed to be rather small."

FLOOD FEATURED

THE WEST COAST BREWER, issue of December 1950 presented a picture of "Flooded Hop Fields" with the following comment. "When the Sacramento River went on a rampage last month and overflowed its banks, the 550-acre Brewer Ranch of the E. Clemens Horst Co. got its share of water. Above are the hop fields with their trellises sticking out of the flood. In the foreground, right, are the two hop-picking machines. Above them are the hop kilns; and the large white building left of the tower is the cooler, where the hops are stored. Storerooms and bunkhouses are dotted around the background. While the flood looks devastating, the damage to the ranch was relatively small, the owner stated.

WOOL WASTE

The MANCHESTER GUARDIAN, issue of October 5, 1950, carried the following interesting item, "Yorkshire in Hop-Growing. Among the many references recently made in sundry quarters to the hop-picking season, a word should be put in for Yorkshire. Trainloads of waste shoddy are sent 250 miles every year from Yorkshire and spread as fertiliser on the Kent hopfields. The fact that it makes them smell like a midden apparently never jeopardizes Kentish faith in the shoddy. And it means at least, that the Northerner does work for his beer. Moreover this strange interdependence of North and South has an enlivening effect upon Kent: pieces of coloured wool are blown by the wind into lanes and hedges and trees until the landscape begins to look like some old sampler; and Kentish birds have luxurious nests, lined with Yorkshire waste shoddy. How the present wool prices may affect future hop crops, or future birds' nests, one cannot yet say."

A HOT IDEA

The SALEM CAPITAL JOURNAL, issue of January 22, 1951 carried the following interesting item, "Hop Growers Group Elect Fire Officers. Fred Dentel of Aurora was re-elected president of the Hop Growers Fire Relief association of Butteville here during the directors' organization session following the regular meeting last week. The Farmers' Fire Relief association of Butteville's annual meeting will be held Wednesday, Jan. 21, at the Woodburn office, beginning at 1 p.m."

"Others re-elected during the organization meeting were: Otto Wellman of Mt. Angel, vice president; Glenn Ahre of Woodburn, secretary-treasurer; and Miss Vera Kocher of Woodburn, assistant secretary-treasurer. At the annual meeting Ray Glatt of Woodburn and John Kisler of Aurora were re-elected to the board of directors."

FRONTIER FROLIC

THE NATIONAL GEOGRAPHIC MAGAZINE for February, 1951, in an article by George W. Long, "Yugoslavia, Between East and West," a pretty picture, in color, by Volkmar Wentzel showed a group of Slovenian women picking hops near Dravograd on the Yugoslav-Austrian frontier.
### HOPS IN OREGON – 1950

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<th>County</th>
<th>Number Growers</th>
<th>Percent of Total</th>
<th>Av. No. Acres Per Grower</th>
<th>Number Acres</th>
<th>Percent of Total</th>
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<td>Clackamas</td>
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**TOTALS**

|              | 382            | 100.00          | 39.13                    | 14,916.71    | 100.00          |

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**SUIT SETTLED**

THE OREGONIAN, issue of February 1, 1951 announced, "Hop Growers Win Damages. The U. S. circuit court of appeals Wednesday affirmed damage judgments totaling $50,000, formerly awarded three Oregon hop growers by the U.S. district court at Portland.

"Two of the judgments were against the Hugo V. Loewi corporation of New York city. The third was against the John I. Haas Firm, Inc., of Washington, D. C.

"The U. S. district court at Portland ruled on September 30, 1949, that Fred Geschwill of route 2, Woodburn, should recover $15,876 and that Kilian W. Smith of route 1, Aurora, should recover $15,546 from the Loewi corporation.

"The third judgment was to O. L. Wellman of Clackamas county for $20,079 against the Haas firm.

"In each case, the hop growers had contracted to sell 1947 crops to eastern concerns. The growers later sued, charging that after the hops had been weighed in, the contracting firms refused to pay.

"The firms contended the hops were mildewed and blighted in appealing the district court's ruling."
1. The TOPPENISH REVIEW, issue of December 7, 1950 reported, "Hop Growers Pass New Resolutions. The advisory board of the United States hop growers met at the Commercial hotel in Yakima Tuesday with a luncheon for twenty persons. Besides the board several representative growers and dealers were present. Suggestions for proposed amendments to the present marketing agreement were discussed. The group passed a resolution which will be acted upon at the legislative committee of the hop control board when it meets in Portland, Tuesday, December 12. The resolution passed was that anyone who grows hops would have to pick the full amount of the allocation in order to get certificates to sell hops, however the certificates would not be transferable."

2. The OREGON JOURNAL, issue of January 15, 1951 announced, "Hop Growers' Series Slated. Remaining hop grower meetings of a series of six will be held under the joint sponsorship of the United States Hop Growers association and the Pacific Coast hop control board Thursday and Friday.

"The Thursday meeting is scheduled at 7:30 p.m. at the Independence Veterans of Foreign Wars hall. Donald area growers will gather at 1:30 p.m. Friday at the Donald hall, while Mount Angel district hop producers will meet the same evening at 7:30 at St. Marys school.

"Speaking at the gatherings, along with Hugh J. Chrisman, Salem, Oregon representative of the United States Hop Growers association, and Paul T. Rowell, Salem, managing agent of the Pacific Coast hop control board, will be E. L. Markell, San Francisco, secretary and manager of the United States Hop Growers association.

"The Independence meeting is sponsored jointly by Independence hop growers, of which H. H. Withrow is chairman."

Similar meetings were held during the month at Eugene, Grants Pass, St. Paul, and at Parma, Idaho and Yakima, Washington.

The Extension Hop Specialist participated in the meetings at Donald, Independence and Mt. Angel. Marion County Extension Agent Ottaway also attended the meeting at Donald.

3. The INDEPENDENCE ENTERPRISE, issue of December 29, 1950 carried the following account, "Hop Board Asks For Hearings On Amendments. Faced with a steady increase in the acreage devoted to hops in the Pacific northwest the Hop Control Board has petitioned the secretary of agriculture to call public hearings on proposed amendments to the hop marketing agreement, according to Dean Walker, chairman of the board.

"The board's action, Walker said, was based upon the recommendation of a special committee which had been named to study the problem faced by hop growers.

"Under the present program, Walker explained, certificates are issued for unharvested hops based upon estimates by representatives of the control board. As a result a large traffic in certificates has grown up and in some sections growers are increasing their acreage with the intention of permitting the crop to go unharvested and cashing in on their certificates.

"The board is recommending that certificates be issued only for hops that are actually harvested, Walker said. In order to amend the present agreement however, a two-thirds affirmative vote of the hop growers is necessary. As yet no word has been received from the secretary of agriculture as to when the requested hearings will be held."
The OREGON CITY ENTERPRISE-COURIER, issue of February 1, 1951 reported, "Post-Picking Hop Allotments Bucked. Opposition to the proposed amendment to the hop-marketing agreement order was expressed at Silverton last week (January 26) when 40 hop growers met to organize.

"John Overlund was elected chairman of the group with Harvey Gehring, secretary, and Herman Keunzi, treasurer. A committee will be appointed to draw up a resolution petitioning the secretary of agriculture to leave the agreement as it now is. A second meeting will be called shortly to which all hop growers will be urged to attend.

"The proposed amendment would do away with the allocation certificates which provide for the harvesting of a certain percentage of hops grown, leaving the remainder unpicked on the vines. The amendment would provide for picking all hops with allocations to be made after harvest.

"Only a few of those in attendance Friday night favored the amendment. The majority expressed opposition stating they felt that the allocations had greatly improved the quality of Oregon hops as poorer hops were left unharvested.

"Representatives were present Friday night from Donald, Gervais and Silverton."

A second meeting was held at Silverton February 9.

HOP HEARINGS

THE OREGONIAN, issue of February 23, 1951 reported, "Hops Hearing Will Be Held. Hearing on proposed amendments to the Pacific coast federal marketing agreement on hops has been tentatively scheduled here March 15-17 by the United States department of agriculture.

"The hearing will be held on those dates unless defense program duties prevent presence of hearing officials, department officials said.

"Most controversial proposal is an amendment that would limit use of the diversion privilege to hops actually harvested. Purpose of the proposal is to discourage increased production by growers more interested in selling diversion certificates than in marketing actual hops.

"A group of Yakima growers say the proposed change isn't strong enough. They would require harvesting of all hops, including the portion of each grower's crop declared surplus under the agreement.

"On the other hand, some Willamette valley growers assert the proposal goes too far, and would force picking of inferior quality hops."

WORKERS WANTED

The YAKIMA REPUBLIC, issue of December 22, 1950 carried an item of interest quoted, in part, herewith, "Farmer Labor Group to Meet. First meeting of the committee of seven appointed by Cecil C. Clark of Wapato for the recently organized Yakima Valley Farm Labor group has been called by Cecil Oliver, chairman for next Wednesday at 2 p.m. in the county commissioners' rooms.

"Added to the committee to serve with Oliver are Reuben Benz, William Gamache and Ernest Falk. Gamache will represent the hop growers."
"Purpose of the Wednesday meeting, according to Oliver, will be to lay preliminary plans for setting up an organization to help bring in farm workers from foreign or off-shore sources to take care of the shortages in prospect for 1951.

"Tentative plans call for setting up an organization similar to the old Yakima Valley Food for Victory group that functioned in that capacity during the farm worker shortages in World War II."

**IMPORTANT MEETING**

The SALEM STATESMAN, issue of December 25, 1950 carried the following item of concern to hop growers, "Employers of Seasonal Farm Labor to Meet. Salem area employers of seasonal agricultural labor will meet Thursday, December 28, at 1:30 p.m. at the state capitol building, room 321. Paul T. Rowell, managing agent for the hop control board is assisting with local arrangements.

"General arrangements are in charge of Truman Chase, Eugene, member of the interior committee selected to develop a plan of organization. The organization is to handle chiefly seasonal agricultural labor from off-shore and foreign areas during the coming year.

"Chase reported that there would be meetings at Yakima and Wenatchee prior to the Salem meeting, and one in southwestern Idaho early in January. He pointed out that the program of production for defense being rapidly developed by the Federal government will result in a heavy drain of workers from areas outside the continental United States.

"It is recalled that during the recent war and the years immediately following, that such workers were obtained from Mexico for the Willamette Valley and most of Oregon. Workers for this country were also brought from Puerto Rico and the British West Indies.

"Surveys are now being made by the USES to determine the extent to which foreign and off-shore workers will be required. Included in the survey this time is that of the Hawaiian Islands. It is believed a number may be available from that area.

"The northwest employer group, Chase said, is urging the Federal government to establish a program for government contracting and for government recruitment and transportation to appropriate ports of entry. Under this plan, holding centers would also be established and the employers could obtain the workers from these.

"Chase expressed the hope when he set the Salem meeting, that a definite plan of organization might be developed at the four northwest meetings so that employers might be prepared for any eventuality."

**YIELDS UP**

The SALEM STATESMAN, issue of January 25, 1951 reported, "U.S. Hop Growers Increasing Yields. During the past five years, the United States has been producing more than two-fifths of the total world production of hops, annually, as compared with less than one-third of the total during the prewar period 1934 to 1938.

"Production of United States hops in 1950 was estimated at around 58 million pounds. This compares with an annual average production of 46 million pounds during the past 10 years. The increase has been due mostly to the better average yields, as acreage has increased only 6 per cent in this period."
Perfection is something to ponder! "To err is human", it has been said and so, I suppose, is finding fault!

No document devised by man is perfect either. The Hop Marketing Agreement and Order are no exceptions to this rule. Despite their limitations, real or fancied I, for one, favor them at least in some form.

As stated in the March issue of THE HOPPER, "the improved statistical situation as well as the stabilized market are, of course, due in large measure to the withholding of surplus hops during the past two years as a result of the Hop Control Board regulations."

In a remarkably able report on "The Portland Hearings", Ed Markell mentioned, "it has become increasingly evident that the fate of the Hop Marketing Agreement, in spite of its constructive accomplishments, was being jeopardized by the activities of forces in two opposing camps."

The "modified proposal", pertaining to but 1 of 15 proposed amendments which caused most controversy on the agenda of the hearings, was clearly a compromise. Batt of Idaho hit a 'homer' with his well-chosen remarks and realistic reasoning in connection with the compromise. Marlowe Lesh, to my mind, made the major concession to compromise when, counter to his convictions that the "modified proposal" would not sufficiently suppress the industry's "ride for a fall" with diversion privileges only partially prevented, remarked, "I would rather have half a loaf than none at all!" That's for me, too!

Should a referendum finally reach growers it should be remembered that two-thirds of the growers and one-half of the dealers must support the advocated amendments before they can qualify for approval by the Secretary of Agriculture.

Despite any changes that may be made in connection with the diversion privilege, growers and dealers alike would do well to espouse Aesop's familiar fable about "The Goose and the Golden Egg," the moral of which is, "Those who have plenty want more and so lose all they have!"

Certain it is that overt activity by growers or dealers resulting in continued overproduction will eventually emasculate the Marketing Agreement, do irreparable damage to domestic hop production and doom many a marginal producer, both in Oregon and elsewhere, to pecuniary penury!

AN ADAGE FOR APRIL

"The smartest person is not one who is quickest to see through a thing, but one who is quickest to see a thing through."
HOP COSTS

Under date of January 22, 1951, the following information was prepared by G. W. Kuhlman, Agricultural Economist, Oregon State College, Department of Agricultural Economics.

ESTIMATED AVERAGE COST OF HOP PRODUCTION IN WESTERN OREGON, 1950

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<th>Item</th>
<th>1935*</th>
<th>1950</th>
<th>1950 Full</th>
<th>Restricted</th>
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<tr>
<td>(Yield, 973 lbs/acre)</td>
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<tr>
<td>(Yield, 1115 lbs/acre)</td>
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<tr>
<td><strong>Cost per acre</strong></td>
<td>1935*</td>
<td>1950</td>
<td>1950 Full</td>
<td>Restricted</td>
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<td>333</td>
<td>$48.88</td>
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* Oregon Agricultural Experiment Station Bulletin 364, "Cost and Efficiency in Producing Hops in Oregon."

** Indicates 1950 average yield was 1115 pounds (gross production) per acre in Oregon, as reported by the Crop Reporting Board, Bureau of Agricultural Economics, U.S.D.A., December 1950.

*** Indicates relative cost in 1950 compared to cost in 1935. Index of picking hops is based on rate of 4 cents per pound (green basis) in 1950. The index of other labor is based on Oregon farm wages in 1950 as reported by the B.A.E. The cost for sprays and dusts is based on data obtained in 1947. The indexes for all other costs are based on the index of production costs (prices paid by farmers for commodities, interest, and taxes) as reported by the B.A.E.

The SALEM STATESMAN, issue of February 19, 1951 found a fascinating photo which was reprinted over the caption, "Gervais—Hop-picking was a real chore even back in 1891 when this picture was taken at a field near Gervais, when styles were a bit different." And how!
AMENDMENT MATTERS

1. The SALEM STATESMAN, issue of February 7, 1951 in an item entitled, "Valley Hop Growers Schedule Petition Session At Silverton," it was stated, "At the first meeting (February 1), attended by some 40 growers, a motion was carried ordering the chairman to appoint a committee of five to work out petitions stating the group's opposition. Overlund appointed to serve on this committee Lawrence Bunning of St. Paul, Charles R. Johnston of Woodburn, J. A. Winn of Albany, Herman Keunzi and Fred Stadeli of Silverton. The petitions are now drawn up and ready to sign. These will be presented Friday night."

2. From the above source, issue of February 16, 1951 further information was presented, as follows, "Hop Group Elects Walter Von Flue. At the hop meeting held here Friday night, Walter Von Flue was named vice chairman, John Overlund, and a secretary, Harvey Gehring, were elected at a previous meeting.

"The Friday night meeting was held to sign petitions protesting the portion relating to the diversion privilege of hops for the proposed amendment of the hop marketing agreement and order.

"Overlund said the majority of the 60 men present signed the petitions. The petitions will be circulated prior to being sent to the secretary of agriculture.

"Overlund was also asked to appoint four additional men to the policy committee of the hop grower's group. Five men were named at an earlier meeting."

Herman Kuenzi will serve as Treasurer.

3. THE PORTLAND OREGONIAN, issue of February 14, 1951 announced, "Hop Agreement Eludes Meeting. No agreement on the exact nature of amendments to the Federal marketing agreement on hops was reached at the annual convention of the United States Hop Growers association in San Francisco last week, according to E. L. Markell, manager.

"The association wants the agreement changed to provide curbs on increasing hop production, but could not agree on how this should be accomplished.

"Public hearings by the U. S. department of agriculture on the issue have been requested, and the association is hopeful that differences of opinion as to the nature of the amendments can be ironed out at the hearings."

4. From the above source, issue of March 4, 1951, "Hearing Slated On Hop Policy. The United States department of agriculture Saturday announced a public hearing on proposed amendments to the Federal hop marketing agreement and order will open at the Multnomah hotel here March 19. The hearing previously had tentatively been scheduled for March 15.

"The hearing here will be for the entire area covered by the agreement--Oregon, Washington, California and Idaho.

"Most controversial of the proposed amendments is one which would restrict the "diversion" privilege under the agreement to harvested hops."

5. From the above source, issue of March 5, 1951, "Hop Men Oppose New Restriction. Approximately 75 per cent of the active hop growers in the Willamette valley have signed petitions protesting the restriction of the growers' diversion privilege to harvested crops, it was reported here Saturday."
"This is one of the amendments now being proposed to the hop marketing agreement order.

"The petitions are being sent to U. S. Secretary of Agriculture Charles Brannan.

"Several proposed amendments to the hop marketing agreement will be discussed at a meeting of growers in Portland, March 19."

YAKIMA MEETING

The YAKIMA HERALD, issue of March 11, 1951 reported, "Hop Men To Talk About Agreement. Yakima valley hop growers will discuss proposed amendments to the U. S. hop marketing agreement at a mass meeting Tuesday at 8 p.m. in the Pacific Power & Light Co. auditorium.

"Called by William Roy, who heads a committee on the marketing agreement, the session will deal principally with a proposed restriction of the so-called 'diversion privilege'.

"Committeemen said some growers feel the privilege has been abused by a few who have planted too many acres for the purpose of selling allocations.

"The Yakima meeting is preliminary to official government hearings starting March 19 in Portland, Oregon, on proposed agreement amendments."

ECONOMIC CONFERENCE

THE OREGONIAN, issue of February 28, 1951 reported, "Crops Committee Names Chairman. Paulen Kaseberg, Wasco, was this week named chairman of a statewide farm crops committee which will lay groundwork for this phase of the Oregon agricultural conference, scheduled to meet at Oregon State college next year.

"Other farmers named to head sub-committees under the farm crops group are Earl Mack, Klamath Falls, potatoes; C. C. Hoover, Medford, forage crops; Glen Strome, Junction City, seeds; Don McKinnis, Summerville, cereals, and F. A. Christie, Grants Pass, hops.

"This 1952 agricultural conference will be the second in Oregon's history.'

One correction is necessary. Joseph Serres will serve as Chairman of the hops sub-committee. The Extension Hop Specialist will serve as Secretary.

ROGUE RIVER RIOT

THE OREGON JOURNAL, issue of March 19, 1951 reported the following, "Hopyard Riot Leads to Jail. A riot call from the Cook hopyard on Lower River road near Grants Pass Thursday evening resulted in the arrest of Charles Turner, 35. State police said the hopyard employee injured two persons before being subdued. Jasper French, 16, was struck in the mouth and the boy's father, Dalton French, suffered a minor face laceration, police said.

"Turner was treated for injuries suffered in the pummeling he received before being arrested and placed in the county jail on investigation of assault with a deadly weapon. French was attacked with an ax."
HOP HEARING

1. THE OREGON JOURNAL, issue of March 19, 1951 announced, "West Coast Hop Hearing Opens Here. Some 75 Oregon, Washington, Idaho and California hop growers and handlers gathered at Portland's Multnomah hotel Monday to participate in a public hearing on proposed amendments in the West Coast hop marketing agreement and order.

"Senator Dean Walker, Independence, chairman of the hop control board which administers the order, testified the original order was rushed into operation and that the United States department of agriculture was requested to conduct this hearing as a means of smoothing out rough spots of the existing order.

"Attorney Robert M. Kerr, Portland, representing a group of Oregon growers, questioned Walker along lines designed to establish that if the proposed amendment restricting the diversion privilege was placed into effect it would cost more to produce harvested hops and therefore the grower would attempt to market all his hops including those of poorer quality.

"Under further questioning Walker indicated it was his belief that all hop growers, large or small, would be affected equally under the proposed restriction and that the industry would benefit generally." 

2. From the above source, issue of March 20, 1951 we quote the following account, "Hop Hearing In Second Day. The West Coast hop hearing went into its second day Tuesday at the Multnomah hotel with a continued discussion on some more of the 18 amendments to the USDA marketing agreement and order regulating handling of hops and hop products in Oregon, Washington, Idaho and California.

"Occupying most interest from the 75 growers and handlers at the hearing is the proposed amendment which would restrict the so-called diversion privilege to harvested hops and to 50 per cent of unharvested hops within the grower's allotment.

"The order at present permits any grower who has allowed all or part of his crop to remain unharvested, to acquire surplus hops from other growers for marketing within his saleable allotment.

"The compromise amendment introduced at the hearing would limit the marketing supply to one-half the grower's unharvested hops.

"It now appears that growers and handlers at the hearing are following three different points of view on various amendments, but that the diversion plan is the only controversial one."

3. From the above source, issue of March 22, the following final report was abstracted, "Hop Hearing Finished Here. Oregon, Washington, Idaho and California hop growers were notified at Wednesday's closing session of the three-day West Coast hop hearing that they have until April 23 to file briefs concerning any of the 18 proposed amendments discussed during the gathering.

"Wednesday's closing testimony mostly concerned minor issues. Meetings Monday and Tuesday were featured by active discussion on two highly controversial issues.

"One was whether to give the hop control board more control over surplus hops while the other was whether to change the growers' surplus hop diverting privilege."
HOP GROWERS CONFERENCE

The second annual conference, program for which appeared in the February issue of THE HOP PRESS, covered all topics listed except one. P. T. Rowell was unable to appear. Seventy-five growers, dealers and representatives of commercial concerns attended. County Extension Agent Ottaway of Marion County and a number of Federal and State officials were in the audience also, including A. L. Dickinson from Yakima, representing the Soil Conservation Service.

LABOR PROBLEMS

The WOODBURN INDEPENDENT, issue of January 4, 1951 announced, "Hop Growers Meet at City Hall Wednesday. Hop growers of north Marion County met with the state employment service Wednesday afternoon at the Woodburn city hall to discuss labor problems."

HELP WANTED

THE OREGONIAN, issue of February 23, 1951 announced, "Hop Producers Call for Workers. First emergency call for farm help for the 1951 season was received at the state employment service here Thursday.

"Orders for early hopyard workers were received from throughout Marion and Polk counties. Officials said approximately 1500 men would be employed in Marion and Polk county hopyards the first week in March. The Independence area has requested 100 hopyard workers for immediate employment."

SHORT COURSE

A first Airplane Sprayers and Dusters Short Course was offered at Oregon State College, January 15-19, 1951.

Lessons learned may prove of importance to hop growers who resort to aerial applications of fungicides and insecticides for the control of downy mildew and insect pests of hops.

YARDS FOR SALE

The YAKIMA REPUBLIC, issue of January 22, 1951 carried the following item of interest, "Activity in offerings of hop ranches in this area is currently noted by real estate firms as reported by the Multiple Listing Real Estate Board of Yakima.

"This is attributed to the desire of hop growers with older yards to liquidate, and in some cases to continue in business by breaking out new land and replanting to start over with young vines and hops making a higher market grade."

BELAIR BOWS OUT

The WAPATO INDEPENDENT, issue of February 22, 1951 announced, "Hop Ranch Sold. Mr. and Mrs. Bert Belair have sold their hop ranch near Harrah and have moved to Yakima to make their future home.

"New owners of the Belair hop yard are Mr. and Mrs. Wilfred Huberdeau and Mr. and Mrs. Louis Robe, formerly of Moxee. They moved on the place Friday."
JOURNAL OF THE INSTITUTE OF BREWING for July-August, 1950 carried the following interesting article. "Hops—From Grower to Brewer" by C. R. Edwards. "In addition to describing routine aspects of hop cultivation, the necessity for choosing varieties suitable to the land on which they are to be grown is stressed; it would be a mistake to increase the acreage of Goldings unless the appropriate type of land is chosen, since otherwise a rapid deterioration in quality of the new plantings is to be expected. Growers would welcome the guidance of brewers concerning the utility of the new varieties. Methods of propagation from strap cuttings, by layering, and from green (asparagus) cuttings are outlined and the role of the male hop is discussed in relation to crop yields. While the greatest care in picking is necessary for dry hops, it is enquired whether the same standard is necessary for copper hops, the question being of importance at a time when it is desired to control carefully production costs."

From the same source are the following abstracts:

1. "Limitations and Advantages of the New Insecticides," by H. Martin (AGRICULTURE, London, 1950, Vol. 57, pp. 19-22). "The new insecticides have the advantages of being both more potent and, in the case of DDT, BHC and other chlorinated compounds such as chlorane, more stable than the old types, so that they can be applied as atomized sprays or smokes, and their effect is long-lasting. Most of them are not injurious to plants, so that the localized over-application needed to ensure a thorough covering of the plants does not matter. The need for uniform deposition over the entire plant surface is avoided by the systemic insecticides, which pass into the sap and render the whole plant insecticidal. Most of this class of substances are very toxic to man and stock, but bis (dimethylamino) phosphorous anhydride is reasonably safe. This compound, when watered-in to plants, makes them insecticidal to sap-feeders such as aphids. It also renders toxic the growing point and tissues which develop after treatment, and so may prove to be of particular value for the control of aphid-transmitted virus diseases. Recent work suggests that similar compounds exist which are effective against fungi. Plants rendered insecticidal by the use of this substance are relatively non-toxic to pollinating insects and those which do not feed on the plant sap. One of the disadvantages of DDT, BHC and parathion is their non-selective action, and care must be taken to keep their effect on beneficial insects as low as possible. There is also the likelihood that resistant strains of insects may be bred, and the safeguard here is to find a second insecticide to which resistant strains are susceptible, and alternate the use of the insecticides or apply them simultaneously. The very stability of these insecticides may be a disadvantage if it leads to their accumulation in the soil to an extent injurious to the soil organisms. BHC, for example, contains impurities which not only harm the soil but are liable to impart taint to certain root crops, and at present BHC should not be used on land intended for potatoes, carrots or onions in the same or either of the two following years. With improved methods of manufacturing BHC this disadvantage is likely to disappear. Care must be used in spreading as smokes, insecticides which are less heat-stable, such as parathion. This compound undergoes chemical change at a temperature not much above 212° F. to produce substances which are not only less insecticidal but much more toxic to man."

2. "Bitter Substances of Hops in the Production of Beer," by E. Sandegren (WALLERSTEIN LAB. COMMUN., 1950, Vol. 13, pp. 7-17). "The bitter principles of hops consist of the a- and b-acids and their transformation products, the a- and b-soft and hard resins. All are soluble in ether but only the acids and soft resins are soluble in hexane. There exist several methods for
determination of the various fractions but none is wholly satisfactory. Utilizing a modified Wöllmer method of analysis, an attempt was made to draw a "balance-sheet" for the bitter substances during the production of beer. Fifty-two percent of the total resins were recovered in an 8 percent extract wort and a further 17 percent was lost during fermentation. Twenty-two percent of the resins were recovered from the spent hops and 20 percent from the sludge. Although the original hops contained hard resins as 1/12 of the total ether soluble, in wort and beer about half the bitter substances consist of hard resins. In the spent hops and sludge, however, some 80 percent of the total bitters consist of hexane-soluble matter. A reduction of hopping rate had a less than proportional effect upon the beer; for example, a 20 percent reduction in hop rate afforded only 13.5 percent less total resins and a 60 percent hop reduction caused a 31.5 percent total resin reduction. There was no improvement in bitterness either by employing buffer solutions or by grinding the hops; the yield of bitter substances soluble at beer pH was highest after 1 1/2 hr. boiling, and longer boiling reduced the yield of hexane-soluble fractions. Aeration during boiling appeared to improve the yield of hexane-soluble resins as well as of hard resins. Tasting trials showed that on some occasions it may be possible to make a reduction of 20 percent in the hopping rate without the effects being significant, and by prolonging the boiling time a reduction of 30 percent is sometimes possible. If boiling of hops is considered a process during which the slightly soluble bitter acids are converted to bitter substances soluble in beer, it can hardly be deemed satisfactory at present. Further study of the bitter-acids and their conversion products may eventually point the way to their better utilization.

PHOSPHATES UNDER FIRE

An official copy of Order No. 585 issued August 31, 1950 by the State of Washington, Department of Agriculture, Division of Agriculture has recently come to hand. Because of its interest to hop growers, it is reprinted here with:

"AMENDING ORDER NO. 584 TO PERMIT THE APPLICATION OF ORGANIC PHOSPHATES IN DUST FORM BY AIRCRAFT IN ISOLATED AREAS ONLY UNDER THE DIRECTION AND SUPERVISION OF THE DEPARTMENT OF AGRICULTURE.

"I, Sverre N. Omdahl, Director of Agriculture of the State of Washington, by virtue of the authority vested in me by Chapter 120, Laws of 1945, and Section 2, Chapter 150, Laws of 1943, do hereby amend Order No. 584, which immediately suspended all application of organic phosphates in dust form in the State of Washington by aircraft pending further investigation, to permit the application of organic phosphates in dust form by aircraft in isolated areas only under the direction and supervision of the Department of Agriculture."

CHANGE OF OWNERSHIP

THE PORTLAND OREGONIAN, issue of January 8, 1951 reported, "Eldriedges Sell Hopyard Share. Sale of their half interest in the county's largest hop yard was recorded here last week by Horace J. and Mary Eldriedge. Buyers were Kola H. and Zelna D. McClellan of Salem, with whom the Eldriedges had been partners in the property since they bought it in 1946 from J. W. Seavey.

"The property is located between McLoughlin boulevard and the 82nd street highway along the Clackamas river and is of about 140 acres of which 125 acres are in hops.

"Revenue stamps on the filing indicated consideration was $40,000 according to County Clerk Guy Pace."
COORDINATED COOPERATION

Early in 1940 the Brewers Hop Research Institute was organized. Your eager Editor, believe it or not, was named Secretary in Charge of Research! Something happened to the original organization, the details of which I have been unable to determine.

Each year since 1941 to 1947, except 1945, sizeable and appreciated sums were contributed to the Agricultural Research Foundation of the Oregon Experiment Station to augment Federal and State appropriations available for hop research. Annually, from 1948 to 1950 funds have been forthcoming from the U. S. Brewers Foundation. A special contribution, matching P. M. A. funds, was made specifically for hop quality studies during 1949-1950.

It's not supposed to be "cricket" to "look a gift horse in the mouth" so who contributed to the "kitty", how much, and what for, remains a mystery! Suffice it to say that a tentative long-time program has been proposed recently which, if present plans materialize, provides for future largess of which we have all become fittingly fond!

To cap the climax, the U. S. Hop Growers Association at its San Francisco Convention passed a resolution recommending that "a Hop Growers Research Committee be set up by the Directors of the U. S. Hop Growers Association to work with the United States Brewers Foundation in connection with the planning and development of research activities designed to promote a better understanding of brewers' hop needs and requirements and to encourage the most effective utilization of hops".

The Hop Control Board, incidentally, is at present empowered "to provide, subject to prior approval by the secretary, for the making of scientific and other studies and for the conducting of research appropriate in connection with the performance of its official duties".

Heavens! How's about getting together! Coordinated Cooperation could accomplish a lot more in less time and maybe with no more effort or funds than are now being expended independently. Growers, dealers and brewers would all be benefited and the work of both "pure" and "applied" scientists, in and out of government service, made more effective.

A MEMORIAL FOR MAY

"Genius is a perception of the obvious which nobody else sees."
FARM COUNCIL FORMED

The SALEM STATESMAN, issue of February 15, 1951 carried an item of unusual interest quoted in part herewith, "New Farm Council Aims To Attract Seasonal Help. A new organization called the Willamette Farm Labor council, designed to attract and assure sufficient labor during the valley's harvest season, will take shape in Salem today or Friday with filing of initial articles of incorporation.

"Incorporators of the labor council are George Paulus of Paulus Bros. cannery; John Johnson of Blue Lake Packers; W. Frank Crawford, Willamette Cherry Growers; C. W. Paulus, hop broker, and William J. Linfoot of United Growers.

"The council will cover, roughly, the area in western Marion and Linn counties, southeastern Yamhill county and eastern Polk county.

"The new organization will supplement work of the state employment service, leaders said, and will work primarily at the "community level" in order to get valley residents into farm work. The employment service still will attempt to attract outside labor at seasons of peak needs.

"The farm labor council, under a plan approved by the bean growers Wednesday, would be financed by a charge levied against producers, either by the ton, bale or other quantity. The bean growers voted to ask canners to make the collection on other than hops. The hop growers would pay through their own association.

"Organizers said a full-time manager to work with the public, schools, and other organizations would be hired and that an office would be operative throughout the summer months."

OFFICERS NAMED

1. The YAKIMA HERALD, issue of February 20, 1951 carried an item of interest quoted in part herewith, "Hop Producers See Good Year. Two new board members were selected yesterday at the annual meeting of the Washington State Hop Producers, Inc., and members voted to separate the offices of president and manager.

"New board members selected at the annual session were Charles Massoth and Jerome Perrault. Ernest Rivard was re-elected. Over 100 growers attended.

"A proposed amendment to increase the board from seven members to nine was beaten when it failed by a close margin to obtain the required three-fifths vote.

"Lesh said members felt that the hop industry, going into its third season under a marketing agreement, faces a bright outlook this year."

2. The YAKIMA REPUBLIC, issue of February 21, 1951 reported, "Hop Group Elects. William Gamache, prominent Yakima hop man, was elected president of the Washington State Hop Producers, Inc., yesterday at a meeting of the new board of directors.

"Marlowe A. Lesh, who previously had been president and manager, was chosen as manager. The two offices were split at Monday's annual business meeting of the membership.

"Others elected were Henry Hill, vice president; Henry Desmarais, secretary; Charles Massoth, treasurer; and Chester Thomas, active secretary."
WORKERS WANTED

The SALEM STATESMAN, issue of February 22, 1951 announced, "First Call For Spring Farm Help Sounded. First call for spring farm work was sounded Wednesday.

"Orders for early hop yard workers were received from throughout Marion and Polk counties by the Salem office of the state employment service. Men are needed to put in trellises, re-set poles and prepare for hoeing.

"The hop work call is about two weeks early this year. Usually there is work for some 1,500 men in hop yards the first week in March.

"The Independence area is seeking 50 to 100 workers and other hop districts also have placed orders for workers, said William H. Baillie, employment office manager."

ANOTHER ORGANIZATION

The CORVALLIS GAZETTE-TIMES, issue of January 26, 1951 announced, "Insecticide Organization. A meeting to form a statewide organization of ground operating herbicide and insecticide sprayers and dusters is scheduled Wednesday at the Senator Hotel, Salem, starting at 10 a.m. according to Erle Parker, Buchanan-Cellers Grain company field-man, McMinnville. Anyone interested in ground dusting and spraying operations is urged to attend. All chemical materials and equipment manufacturers are invited to come."

The Hop Specialist sat in on the stimulating session. Future activities of the organization will be of interest to hop growers.

THE OREGONIAN, issue of February 6, 1951 reported, "Spray Directors Name Chairman. Erle Parker, McMinnville, has been named chairman of the board of directors of the newly formed Ground Sprayers, Inc., an organization of custom ground applicators of agricultural sprays and dusts.

"Other directors, named by 65 applicators at a Salem meeting, are Al Bayly, Portland, vice chairman; William Craig, Eugene, secretary-treasurer; Ed Greene, Tulelake, and James Hill, Pendleton. Roy Miller, Portland, was named chairman of a promotional and educational committee.

"The group voted to admit chemical manufacturers and distributors and Oregon State college personnel as associate and advisory members."

PRICE CEILINGS FOR HOPS

AGRICULTURAL SITUATION AND OUTLOOK for March 16, 1951 under the heading, "Some Specialty Crops Subject to Ceilings" indicated hops were subject to price ceilings when national averages reach parity. The same article reported hop acreage adequate and stated, "Despite buyers' willingness to contract for future supplies, the present United States hop acreage is adequate to fill available outlets. Surpluses will be produced in years of good yields such as 1950, but emphasis on high yields and low costs must continue in Oregon if competing production areas are to be prevented from capturing still larger parts of the market.

"Fifteen years ago Oregon supplied over half of the domestic and foreign market for hops raised in this country. Since then, our place in the market has declined almost steadily until we are now supplying less than a third of the available outlets. Oregon is being replaced primarily by Washington, where acreage has doubled during the last ten years. Yields in Washington average much higher than those in Oregon, and premiums are paid for their seedless hops."
MEN AT WORK

The INDEPENDENCE ENTERPRISE, issue of March 30, 1951 carried the following information of interest, "Hop Work Employs Many Men. Estimated 2000 now employed in local hop yards. Work in the hop fields of this area is now in full swing with the arrival of favorable weather. The work of repairing and replacing trellises has been going on for some time, but now hoeing, plowing and the placing of the pegs to hold the strings on which the hops climb is going ahead.

"It is estimated that up to 2000 men are now employed in the many yards in the area. The hoeing around each hop hill, which must be done before the plowing of the fields, takes considerable time and employs a large number of workers. Growers would like to have a man hoe an acre a day but the average is probably one-third to one-half acre. After the hoeing, the fields are plowed and then workers scatter the pegs at each hill which will hold the string on which the hops will climb to the trellis wire above.

"The hop sprouts are just now starting to shoot up and with favorable weather for a week or two the work of hoeing and plowing will be well along. Stringing, training, and stripping will follow.

"A great deal of hops in this area will be picked by machine this year as several new picking machines are being added to the ones already operating. However, there will be plenty of demand for hand pickers during the harvest as many of the smaller yards will pick by hand."

WORK UNDER WAY

In the SALEM STATESMAN, issue of April 2, 1951 we noted a typical scene for this time of year under the heading, "Hoeing In Hop Yards Sets Stage For Farm Work In Valley."

The YAKIMA HERALD, issue of April 11, 1951 carried the following account, "Hop Work Speeded. Early season work in hops is hitting a fast pace in the big yards south and east of Mabton. A few new blocks of yard are being installed. About half of the twining is done in the district. In the balance, crews are speeding the last of the pruning preparatory to starting the vines up the cords."

HAPPY DAYS

The Silverton APPEAL TRIBUNE, issue of April 6 reported, "Hop Fields Are A Busy Place With Clearing Weather. Favorable weather returning to the community is finding work in the hop field under way full force, and calls for hoeing help being sounded.

"Hoeing, plowing, repairing and replacing trellises and the placing of the pegs to hold the strings on which the hops climb is progressing.

"Many of the hops in the Silverton area, more than last year, will be picked by machine this year.

"Demand for hand pickers, however, will continue strong, it was said."

HELP! HELP!

The Portland OREGONIAN, issue of April 6, 1951 carried the following item, "Hoeers Needed. Urgent appeal for men to do hoeing in the Marion and Polk county hop fields was sent out Thursday by the Salem employment office. Claude Litchfield, farm labor agent, said 75 men were needed immediately."
SPECIAL MENTION

AGRICULTURE BULLETIN, official publication of the Oregon State Department of Agriculture, issue of December, 1950 carried articles of interest which made mention of hops:

1. "Josephine County" by J. F. Svinth.
   "Hops, all 1,250 acres, contribute much to the economy of the county. Contributions in the way of supplying labor to some 2,000 local citizens during harvesting time and a financial value of $750,000 for the crop, have done much to balance out the agriculture picture for Josephine County."

   A good illustration of a portable picker at work accompanied the write-up.


   Reference is made to income from hops in Josephine County.

3. "This Department's Activities Touch Welfare of Every Person in Southern Oregon Counties."

   Mention is made of the hop analytical services of the state hop laboratory maintained by the division at Salem.

GRIEF AT GRANTS PASS

THE OREGONIAN, issue of February 9, 1951 carried the account quoted in part herewith, "Two Drown In Slough. A hop yard worker and the stepson he tried to rescue drowned in a Rogue River slough three miles south of here Thursday afternoon.

"Olin Leroy George, 29, jumped into the cold, deep water of the slough in an attempt to save Michael Leroy Mandell, 7, his stepson, who slipped down a bank while fishing.

"The wife and mother of the victims, Mrs. Margret George, 26, witnessed her husband's death.

"Mrs. George and the boy were visiting friends at the Dick Every hop yard, adjoining the Cook hop yard where George was employed.

"The family came here five week ago."

OWNERS SHIFTED

The YAKIMA HERALD, issue of December 23, 1950 reported, "Boisselle Sells 80 Acres of Hops. Frank Boisselle, Yakima reservation rancher, has announced sale of 80 acres of his property in the Brownstown district to Shirley Ward, Ahtanum hop grower, for $120,000. Fifty-two acres are in hops and the rest is open farm land.

"The transaction includes three houses, two hop kilns, a hop warehouse, two garages, a blacksmith shop, a picking machine and some miscellaneous equipment on the property, Boisselle reported.

"He said that he and his son will have the right to continue to live on the property for a year and a half and that he will run the hop property for Ward."
The JOURNAL OF THE INSTITUTE OF BREWING for September-October, 1950 contained two important reports which are quoted in part herewith:

1. The Annual Report (1949) of the East Malling Research Station. "Concerning hops, the effects of the season's weather as reported agree with much that has been stated elsewhere; downy mildew was very little trouble, but red spider threatened to become a serious problem, though it was ultimately well controlled by using one of the new phosphorus insecticides. Drought did much to reduce yield, especially as assessed by bushels, but with the cones "weighing well" yields were actually better than expected; they were nevertheless the smallest since 1941. Cultivation trials with commercial varieties (including clonal trials of Golding and Fuggle) have been continued, and sets have been transferred to Wye for further observation; a new Fuggle strain trial at Wye will include selections of this variety which are definitely early in season and others with particularly good cone development. The study of the new Wye varieties has continued along the usual lines, and investigation has been made of the influence of time of cutting and severity of pulling. In connection with machine picking, it is of interest that hops cut at picking time in 1948 gave a slightly lower yield in 1949 than did the controls, and this investigation is to be continued at East Malling till similar trials are established at Wye.

"Of the hop diseases, although 7 new outbreaks of progressive wilt were reported, there is no evidence that any completely new area has become affected; fluctuating wilt was less prevalent in 1949 than in 1948. Research on wilt continues, and it appears that certain of the resistant varieties may recover though earlier showing symptoms of attack. Cultivation trials, both in pots and plots, suggest that nitrogen-deficient plants show less severe wilt symptoms than hops supplied with full nutrients. Work on the virus diseases, mosaic and nettlehead, is also continuing.

"A feature of the Report is the presentation of a number of full-length articles in addition to the departmental summaries. The plant biochemist will find particular interest in A. C. Mason's paper on the estimation of various metals and of nitrogen and phosphorus in plant materials, a paper which should be consulted for the details of procedure which it contains. Also an account of hop diseases by W. G. Keyworth and J. Paine brings into small compass a wealth of useful information and carries some most informative photographs which help to bring home to readers just what difficulties hop growers are confronted with."

2. The Annual Report (1949) of the Department of Hop Research at Wye College. "A new Hops Laboratory has been built at Wye, and is now complete with the exception of the kiln room; the laboratory will house the Field and Advisory Officers, in addition to workers on soils and nutrition, plant breeding and genetics, whilst the electrically heated kilns will, when ready, enable a continuation of important studies on hop-drying to take place. The College gardens are being extended, and there are now 20 1/4 acres under hops; the latest garden is devoted to Goldings and other varieties susceptible to mosaic, and for this reason is separated by a distance of half-a-mile from the nearest of the older gardens, where Fuggles and other mosaic carriers are being grown. A variety of manurial trials are in progress or have recently been completed; particular study is being made of conditions leading to, and the influence of, certain mineral deficiencies on the hop plant. An interesting finding is the interaction of a variety of inorganic ions; thus, increased application of potassium may induce magnesium deficiency, but the effect can be neutralized by additional nitrogen. The symptoms of magnesium deficiency vary with soil conditions, acidity being accompanied by severe marginal and inter-veinal
scorching of the leaves, whilst with alkaline soils chlorosis is the main effect. Certain of these studies are fully reported in papers accompanying the Report, and these will be abstracted in a subsequent issue of this JOURNAL.

"Selection trials are being carried out with material from 120 selected Golding hops collected in 1939, and including a number of well-known varieties. Attempts are being made to find means of assessing the likely brewing value of new seedlings at as early a stage as possible; thus, the distribution of glands on leaves has been studied and proves to be a varietal character, though whether it can be correlated with resin production in the cones remains to be seen. The concentration of glands on the anthers of male hops used in breeding experiments is also being investigated, in order to find whether it bears any relation to the richness in resins of the progeny obtained. Studies on fertilizer treatments in relation to the incidence of Verticillium wilt are in progress. Processing problems under study include deterioration during storage, and to facilitate this work an attempt is being made to gain further insight into the chemical constitution of the active materials."

ITEMS OF INTEREST

THE BREWERS' JOURNAL AND HOP AND MALT TRADES' REVIEW, issue of October-November, 1950 described in detail the "Research Foundation Model Brewery." Of interest also was an article by William Beechan, "The Brewing Industry In Australia." In 1949, 2,805,555 pounds of hops were used.

NOTES FROM ABROAD

From the above source, the following information was obtained:

Australia: "Efforts are also being made to increase the Australian hop crop, for imports are necessary today to cope with brewers' demands. Most of the imports today are from the United States, and for these, of course, dollar funds are necessary.

"A small experimental area of hops has been planted at Bathurst Experiment Farm, New South Wales, by the Agricultural Department, to test river flat country as possible future hop-growing areas. Trials are also being made in the Tumut and Upper Murray districts. Shortage of hops continues to be serious."

Czechoslovakia: "According to information published by the Ministry of Foreign Commerce of Czechoslovakia considerable attention is given to the mechanization of hop cultivation and picking. Different machines are to be put into service soon—e.g., a machine digging holes for the plants the output of which is said to be 10 to 15 times higher than that of a worker, a plough for root extraction (400 roots per day) and a picking machine replacing 400 to 600 workers."

France: "The French customs duty on hops had been suspended. The Association of Hop Planters asked the Government to re-establish the duty as from September 1, 1950. If they get satisfaction the suspension of the duty, which came too late in 1950 to be of any use to the 1949/50 import campaign, would be abolished just at the moment when the 1950/51 hop import campaign starts. The Brewers' Union has immediately and vigorously protested against this demand of the hop planters which, the brewers argue, would be justified if the French hop production were able to satisfy the needs of the brewing industry and if the prices of foreign hops were likely to make the hop planters fear that they might not get a sufficient remuneration for their efforts. At present, however, French hop production is very inferior to the demand. As for the prices, they
have risen to such a height in France that there is, for the time being, no likelihood of a slump, and even if there were a certain fall they still would be very profitable for the planters, even in comparison with world market prices. The French hop price of so-called "prima prima quality," which was 15,200 francs per quintal in August, 1947, is at present four times as high. Therefore, the brewers say, to re-establish the hop import duty would mean to inflict a penalty on them, as they already pay for hops nearly 60 times the price of 1938. Are the hop planters, they ask, out to ruin an industry on which depends their living, by accumulating difficulties for the brewers?

"The price of hops fixed recently by the Alsatian hop-growers is sensibly higher than last year. The price of a quintal of hops is now 56,000 Fr., as against 48,000 Fr. in 1949, i.e., an increase of 8,000 Fr. per quintal."

From the above source we quote in part a review of a 3/4 page book, written in German, by Ing. Wilhelm Linke entitled Der Hopfenbau. "This is a comprehensive account of the hop plant and everything connected with it. Its botany, diseases, cultivation, breeding, growing, curing are all discussed in some detail, while the different varieties of Continental hops are discussed and tabulated. There is some small mention of English varieties."

**COMMENT ON COIR**

We are indebted to Robert Drager of the firm of Clifford W. Brown at Salem for the following information: "There are 5 main grades or types (of coir) used in stringing hops. These are: real alapat, imitation alapat, superior anjengo, ordinary anjengo and also a small amount of Ceylon coir.

"In general, the real alapat is the most uniformly spun, but the imitation alapats have the highest breaking strength. The footage on imitation alapat will run from about 220 feet per pound to 250 and the anjengos and real alapats will run from 250 to 300 feet per pound. Regardless of grade, the average breaking strength on all types of coir runs from 45 to 55 pounds.

"The season seems to affect the quality of the coir yarn and grades will be either inferior or superior to grades received the previous year in comparing the identical types. All contracts on coir carry a clause stating that due to the fact that the coir is a handmade product, no footage or breaking strength can be guaranteed, so you can understand it is very much like buying a "pig in a poke" in buying coir from India for the quality of goods you receive cannot be determined until it is actually in use. One standard - say 19 foot string will have a variation in break throughout of at least 20 to 25 pounds. If these weak spots happen to be up near the wire, there is bound to be considerable breakage in a high yard."

**BOUNTEOUS BREWERY**

**BREWER AND DISPENSER, issue of December 1950 carried the following item of interest, "Pabst Gives $50,000 Toward New U. of Wisconsin Project. THE PABST BREWERIES FOUNDATION has contributed $50,000 to the University of Wisconsin Foundation, it is announced at Kohler, Wis., by Herbert V. Kohler, General Chairman of the Centennial Campaign Committee of the Foundation. This contribution was among the earliest received for the Wisconsin Center Building. The building, he said, will cost an estimated $2,850,000, and is intended as accommodations for the use of thousands of adults who attend meetings and refresher courses at the university."**
SABBATICAL SESSION

The seventh consecutive annual get-together of Federal-State hop inspection personnel was held in Oregon early in the merry month of May. The gathering was again an effulgent example of inter- and intra-state accord coupled with friendly Federal relations. Such a target is often aimed at but many times missed.

Last year the meeting was carried to California where the people on Pier 1 on San Francisco's Embarcadero did a swell job of demonstrating the details of how they discharge their hop inspection duties. Special mention for merit, herewith, to Mrs. A. T. Walker, the only licensed lady hop inspector in the service!

Seven years ago a temeritous tri-state team travelled to Corvallis for a sketchy schooling. Almost immediately thereafter they were called upon to tackle a tremendous task—the prompt and painstaking inspection and certification of more than 56 million pounds of hops produced in the states of California, Idaho, Oregon and Washington. Since then, refinements in procedure and the employment of mechanical devices especially designed for the purpose have brought about a surprising degree of uniformity of results secured in all four states and in close agreement with Federal findings by the Portland supervisory laboratory. State laboratories are now located at San Francisco, Boise, Salem and Yakima. Annual meetings of some of the personnel from all these places have materially contributed to this conspicuous concord.

This year the Salem laboratory assumed the role of demonstrator. The entourage of fifteen then "followed the leader" to Corvallis for the sabbatic session! A tour was taken of the experimental hop yard and the business of hop breeding was briefly but expertly explained. Moisture-testing devices were discussed and the chemical analyses of hops considered. Some of the results of a two-year study of the physical and chemical factors of hop quality were divulged. The second day was spent at the Federal laboratory in Portland.

"Personally pleasant and profitable professionally" was the unanimous pronunciation by all who participated. My one regret was that J. E. Barr, Chief, Inspection Division, Washington, D. C. could not be present.

A JOT FOR JUNE

"People usually have their ears shut to advice and their eyes open to example."
EXPERIMENTAL BREWS

The following "Summary and Conclusions" from a report by Schwarz Laboratories, Inc. dated March 28, 1951 entitled, "Testing Hops Treated With Parathion Prior to Harvest" will be of interest to growers, dealers and brewers.

"Six pairs of brews were made from malt and corn grits. Five samples of Late Clusters hops were used for hopping, one of which had no fungicidal or insecticidal treatment whatever, one had been dusted with nicotine 53 days before harvest, and three had been parathion dusted, 50, 8 and 1 days before harvest respectively. A sixth brew was made with the control hops treated with 20 ppm. of parathion at the time of adding them to the kettle.

"All brews proceeded normally and there was no indication from their behavior during kettle boiling, fermentation, storage or filtration that the parathion had had any adverse effect whatever on the brewing process. Analysis of the brew to which parathion had been added at the kettle revealed no parathion though recovery of parathion from a control at the time of analysis was satisfactory.

"Analyses of hops and beer indicated sound products without evidence of any abnormality due to parathion or other treatment. All of the beers were sound organoleptically and chemically, and showed normal stability on storage.

"From the results of this set of brews it can be concluded that:

(1) "Parathion treatment of hops has no effect on the results of a hop analysis by the official chemical or physical methods of the American Society of Brewing Chemists.

(2) "Compared to untreated hops, hops treated with parathion have no detectably different effect on wort or its fermentation, nor on the finished beer.

(3) "Parathion up to the level of 20 ppm. in the hops used was not detectable in wort or finished beer.

Parathion is an insecticide used in considerable quantity and with reasonable success by hop growers to control lice and red spider mites.

It is important to time insecticidal applications for hop aphid control before the hops enter the burr stage. If this practice is followed, there will be less likelihood of the aphids entering the cones and the danger of insecticidal residue will be minimized.

Parathion, DN dusts and DDT are the only materials which have been cleared by brewing tests. All other, including nicotine, are suspect.

The hazards of parathion, and other phosphate insecticides, to operators, field workers, livestock and poultry must be emphasized. Users are urged to wear masks and protective clothing and to follow instructions printed on labels by manufacturers.

EXPERIMENTAL PLANE

AMERICAN CYANAMID, Spring, 1951 carried an interesting illustrated article entitled, "Special Agricultural Airplane" developed especially for dusting, spraying and fertilizing. "The experimental craft was engineered and constructed by the Personal Aircraft Research Center of the Texas A. and M. College System." The project is the result of a cooperative project with the National Flying Farmer Association, Civil Aeronautics Administration and the U. S. Department of Agriculture.
The YAKIMA HERALD, issue of January 16, 1951 carried an interesting account which is quoted in part herewith, "Latin Comes For Hop Talks". Whenever the price of hops goes up 1 cent per pound, it costs the Bavaria Breweries of Colombia $12,000, according to Dr. Luis Alvaro Barbosa, company representative who visits Yakima annually.

"Since his arrival here late last fall there have been 15 price increases. They have cost his company at least $180,000 more than it expected to have to pay at first.

"The Bavaria Breweries purchases the 1,400,000 pounds of hops it needs annually through an American subsidiary, Colombian Brewers Industries, Inc., of New York. Barbosa pointed out that although Colombia requires more than that quantity of hops, his company takes the largest quantity.

"Through the United States subsidiary, the Bavaria organization is able to establish satisfactory credit ratings with Yakima valley growers.

"It is the policy of the Bavaria corporation to keep a reserve of approximately 1,500,000 pounds of hops in cold storage. This amount is about the annual requirement for the 17 breweries it has scattered around the South American republic. There are enough stocks on hand that it was necessary for Dr. Barbosa to buy only 350,000 pounds of the 1950 crop.

"However, he has instructions to contract 1,400,000 pounds of the 1951 production, in order that the breweries may have fresh hops next year. The company is taking nothing of the 1952 production because the touch-and-go situation in the world might interrupt deliveries, and also there are possibilities that the U. S. government might impose ceilings.

"Present prices already are a big strain on the dollar reserves of Colombia, and Dr. Barbosa warned North Americans that the upward spiral of prices here probably will halt some exports out of the United States. Every increase prevents some South American from buying some northern product, Dr. Barbosa asserted.

"'We don't want to stop buying hops in the Yakima valley, as those produced here are entirely satisfactory to us', the business visitor said.

"Although the Colombians have enjoyed pleasant relationships with valley growers, there is a remote possibility that the Bavaria people might be interested in buying their own yards in the valley. Such a move would be forced only if prices go too far out of hand. As yet, Dr. Barbosa has not offered that suggestion, but he feels that it is worth consideration.

"First barrier to carrying out the idea would be the expense of the investment. Its cost would have to be coordinated with the price of hops. The subsidiary company could operate the yard, Dr. Barbosa said."

AIRCRAFT CALIBRATION

The BULLETIN issued by the Department of Agriculture, State of California, Volume XL, Number 1, pp 21-26 carried an interesting article by Norman B. Akesson entitled, "Calibration of the Agricultural Pest Control Aircraft Sprayer and Duster." An adequate abstract is impossible. It must be read in full to be appreciated.

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CERTIFICATE OF COOPERATION

The CORVALLIS GAZETTE-TIMES, issue of April 3, 1951 carried an item of interest quoted, in part, herewith, "OSC Departments Win Co-operation Awards. The Oregon State College forest products laboratory and the school of agriculture this week will receive a certificate of co-operation for their help in carrying out the Marshall plan technical assistance program, the Economic Co-operation Administration announced today."

Among others in Oregon receiving the award will be the Hop Control Board at Salem.

CROP ESTIMATES CONSIDERED

The Portland OREGONIAN, issue of April 19, 1951 reported, "Hop Men Meet. Methods of making crop estimates and determinations under the Pacific coast federal hop marketing agreement will be discussed by the growers allocation committee of the hop control board at a meeting in the Multnomah hotel here Thursday."

LESH ENLIGHTENS

The YAKIMA REPUBLIC, issue of March 27, 1951 announced, "Speaker Announced. A discussion on possible changes in the hop producing industry will be given by M. A. Lesh, manager, Washington State Hop Producers, Inc., at tomorrow's exchange club meeting in the Donnelly hotel."

TROUBLE AFIELD

The CAPITAL JOURNAL, issue of March 26, 1951 carried the following item, "Hop Worker Held. Bernard Anthony Monyette, a hop ranch worker was held in City jail Monday on charges of vagrancy and drunkenness. He was fined $15 on the drunk charge and pleaded innocent to the vagrancy charge. Ten dollars in bail was due on the vagrancy count. When arrested, he had a gasoline credit card of a Salem man in his pocket. The card owner said the card had been left in his truck."

HOPS AT HERMISTON

The Silverton APPEAL TRIBUNE, issue of March 16, 1951 reported, "Silverton Hop Men Operating Hermiston Yard. Harvey Kaser of the Evergreen district, who is one of four partners in a large hop acreage at Hermiston, left on Monday for a week's stay there. He will inspect the new two kiln Bloxham type hop drier under construction on the grounds which will replace the one lost by fire last fall."

"The block structure will also house the hop picking machine in a shed addition. This is Mr. Kaser's first trip to Hermiston since November."

"Pete Scymanski, another partner and manager, and his family, formerly of Silverton, now live at the Hermiston hop yards."

A LOT OF GALL

Elwyn Long, Washington State Hop Producers, Inc., of Yakima, reports an unusual amount of hop crown gall in some yards this season.

The disease is pictured and discussed in the reprint of an article by the Extension Hop Specialist entitled, "Hop Diseases In The United States." Copies are available on request.
HOP LOSSES

"Hop Losses, Adjustment Of A Growers Interest" by W. J. Moe, General Adjuster of the General Adjustment Bureau, Inc. is an interesting, well illustrated article which appeared in KNOW, the Bureau's meritorious magazine for Winter 1950-1951. An itemized illustration of adjusting procedure is included which is worthy of serious study by growers and dealers.

QUALITY RAISED

SMALL BREWERS ASSOCIATION, Bulletin No. 921, issued May 8, 1951 carried an item of interest. "Department of Agriculture announces a proposal to raise quality standards for Hops in 1951 by lowering the maximum leaf and stem content from 15% to 10%.

"While a leaf and stem content of 10% will still be too high--nevertheless the action is a step in the right direction and represents several years of work on the part of the Brewer representatives on the Hop Control Board, i.e., Edward V. Lahey--The Executive Secretary--Harris Perlstein--and Joseph T. Sieben."

MORE HOPS FOR HERMISTON

The PENDLETON EAST OREGONIAN, issue of February 8, 1951 carried the following account, "New Hop Yard. Out on the Hermiston-Stanfield loop highway a new hop yard is in the process of making. Fifty-three acres have already been planted and there are about two acres yet to be leveled and planted. Ben Eppers, of Aurora, Ore., an experienced hop grower, is owner of the new yard.

"The hops planted are of the seedless variety, a spokesman said, and the baby hops are preferred.

"The cost of leveling and planting, together with the cost of poles and wires, represent an outlay of about $200 per acre in addition to the cost of the land. Flood irrigation is declared to be a benefit to the production of hops. The climate of this area is exceptional for hop growing with regard to disease control and growth.

"In the Willamette valley about 50 percent of the hop crop is hand picked. In the Hermiston district all hops are machine picked. There are two other plantings of seedless hops on the Hermiston project."

HOPS VS. ONIONS

The YAKIMA HERALD, issue of March 28, 1951 carried a sad story with a picture of part of the 150-ton Spanish onion crop grown by J. A. Lemaire of Moxee. Minus a market, Lemaire lamented, "They tell me they are good fertilizer. I put them on my hops. If it were not for the hops, I would be clear out of business."

POST PAPER

Robert D. Graham authored another interesting publication entitled, "Service Life of Treated and Untreated Fence Posts". This is Progress Report No. 4 of a research project of the Oregon Forest Products Laboratory, Corvallis, Oregon. It was published in October, 1950.

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CREWS RECRUITED

The ALBANY DEMOCRAT HERALD, issue of April 18, 1951 reported, "Year's First Hop Crew Recruited. The local employment service recruited its first hop training crew of the year yesterday, and plans to secure dozens more during the next two weeks, Don Madsen, farm labor specialist for the office, said today."

YARD WORK PROGRESS

From the above source, same date, we learned, "Good Weather Steps Up Work In Hop Yards. Due to unusually good weather conditions work in the hop yards in this vicinity is far ahead of schedule, according to Frank Kennedy, publicity chairman of the Independence Hop Growers.

"Hop hoeing and plowing is nearly completed and stringing has started in all yards.

"Some of the yards have started to train vines, and Kennedy said all training will be in progress in all yards on or before May 1.

"The good weather has brought many workers to the fields, but many more are needed, Kennedy said. He added that free cabins, lights, fuel, and water are available to hop workers."

HAPPY HOSTS

The INDEPENDENCE ENTERPRISE, issue of March 23, 1951 carried a panel of photos of some fine folks and the following account, "Hop Growers Dinner Hosts For Members. The Independence Hop Growers were hosts last Thursday evening at a chicken dinner for their members and their wives. Some 75 persons were served an excellent dinner by Mrs. Harold Withrow, assisted by Mr. and Mrs. Bacon, Betty Lou and Melva Banta.

"Harold Withrow, president of the Independence Hop Growers, introduced Walter Leth, who acted as toastmaster for the evening. Leth entertained those present with stories and introduced various persons present, including R. M. Walker, first president of the group; Eugene MacCarthy, the second president; Dean Omans, manager; D. P. MacCarthy, the oldest or one of the oldest growers of the district.

"A lighter inscribed with his name and the dates 1895-1951, Independence Hop Growers, was presented by Omans to D. P. MacCarthy.

"Following dinner a business meeting was held by the group at which time two new directors, Cecil Hultman and Melford Hoover were elected. In the report of Dean Omans, manager, it was revealed that the current business of the Independence Hop Growers showed an increase of 105 per cent over the previous year."

HOP STUDENTS

The INDEPENDENCE ENTERPRISE, issue of April 6, 1951 carried an unusual item quoted, in part, herewith, "Hop Season Brings Many New Students. Further proof that the hop season is well underway was offered this week by local school officials who reported increased enrollment in all elementary grades.

"The boost, officials said, is caused by the increased population during the hop season."
HOPPERS IN ENGLAND

THE BREWERS' JOURNAL AND HOP AND MALT TRADES' REVIEW, issue of December 20, 1950 provided the following information, "Hops: 1950 Crop.—The crop available through the Hops Marketing Board had amounted to nominally 337,000 cwt., showing a heavy increase over the 1949 figure of 233,261 cwt., both figures being exclusive of hops grown by brewers for their own consumption. The total of brewers' contracts had amounted to 318,000 cwt., and it had been agreed to accept certain additional applications for hops for export which would bring the total contracts to 326,000 cwt. After consulting the Society, the Hops Marketing Board had accordingly announced that contracts would be fulfilled 100 per cent, leaving the usual margin in reserve for all-fault hops and replacements of rejected hops. The total of export contracts included in the total amounted to 54,000 cwt.

"Average Price, 1950 Crop.—The investigation of the cost of production of this year's crop was approaching completion.

"Distribution Scheme.—In spite of the very large crop, the scheme was working very well, and there was good reason to think that the acceleration of distribution which had been planned would be achieved. It was important that members should not delay in considering and giving their decisions to their merchants on growths offered to them in fulfillment of their contracts.

"Courtesy Call, 1951 Crop.—The Committee was strongly of opinion that in view of the exceptional conditions this season it would be unreasonable to attach the courtesy call for the 1951 crop to brewers' purchases of growths in 1950, and that the courtesy call should accordingly be related to their 1949 purchases. It was proposed to press for this to be done.

"Levy Fund.—A recommendation from the Parliamentary Committee had been considered that the interest arising from the investment of the Levy Fund might be applied to the maintenance of the Brewing Research Foundation. The Committee had endorsed this suggestion and it had been put forward to the Trustees and to the Hops Marketing Board."

NOTES FROM ABROAD

From the above source we learned:

Canada: "Production of hops in Canada in 1950 is somewhat larger than in 1949. The 1950 crop is estimated at 1,900,000 lb. to 2,100,000 lb., as compared with the 1949 crop of 1,886,000 lb. British Columbia continues to be the leading Canadian hop-producing area. Canada has always been an important basis for hops. Import in 1949 totalled 2,015,000 lb., most of which came from the U.S.A., with small amounts coming from Western Europe. The large carry-over from 1948 imports and production resulted in import requirement being below
normal. In the first five months of 1950, imports of hops amounted to 650,117 lb., an increase of about 25 per cent over the quantity imported in the like period of 1949. The United States was the source of 81 per cent of total imports in the period January-May, 1950; Germany supplied 10 per cent, and the United Kingdom, Jugoslavia and Czechoslovakia the remainder."

France: "Hops. Imports: 9,763 m.q., valued at 371 million francs, coming from the following countries:

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<tr>
<th>Country</th>
<th>m.q.</th>
<th>1,000 fr.</th>
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<td>306,565</td>
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<td>Italy</td>
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<td>53</td>
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<td>200</td>
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<td>U.S.A.</td>
<td>983</td>
<td>60,766</td>
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<td>9,768</td>
<td>731,025</td>
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"Exports: 1482 m.q., valued at 39.7 million francs, were shipped exclusively to the French overseas territories, mainly Indo-China and Algeria."

Note: m.q. = metric quintal, about 110 pounds.

Switzerland: "Although Bavaria and Czechoslovakia are Switzerland's usual hop suppliers, uncertainty as to quantities available and prices is responsible for the interest now being shown in the American hops, according to Foreign Commerce Weekly, published by the U. S. Department of Commerce. Inquiries among brewers reveal that U. S. hops have gained a good reputation, and imports may increase if prices remain competitive. Although heavy imports will not arrive until after the harvest, it is apparent that U. S. hops have found their way into the Swiss market, increasing from 194 lb. in 1943 to almost 7 tons in 1949 and 15.5 tons in the first half of 1950. Imports of hops into Switzerland in 1949 totalled about 351 m. tons, of which Czechoslovakia supplied 169 tons, Germany 161 tons and Jugoslavia 14 tons. In the first six months of 1950 imports totalled about 30 tons, with Canada supplying 5 tons, Czechoslovakia 3 tons, U. K. 3 tons, and Germany and Belgium-Luxemburg each about 2 tons. The Swiss Brewers' Association, in 1949, estimated the annual consumption of hops at 320 m. tons; at the end of July, 1950 they revised the estimate to 350-400 tons.

"Western Germany's 1950 hop crop is estimated at 7,500 m. tons, of which some 5,000 will be used domestically. Czechoslovakia's new crop is estimated at 450 m. tons, of which a fair quantity is consumed domestically. Although Switzerland is bound by treaty to buy certain quantities of Czechoslovak hops, no final orders have been placed so far for 1950, partly because of possible price increases."

HOPS HELPED

BREWERS JOURNAL for November 1950 reported a generous gesture quoted, in part, herewith, "Manitoba Brewers And Hotel Men Give University Scholarships. University scholarships amounting to $90,000 in cash for veterans or children of veterans of the Canadian armed forces have been given during the past six years by the Manitoba Brewers and Hotelmen's Welfare Fund, it was pointed out today in the text of a resolution of appreciation passed at the recent annual meeting of the Canadian Legion, nation-wide organization of veterans of both wars."
FOOLING WITH FIRE

There still seems to be some slag on labor's melting pot! Mexican "wetbacks" currently are causing considerable comment in both local papers and national magazines. Proponents of the peons say they do not argue, agitate, or complain and labor long for as low as 20 cents an hour. Horrors!

The National Farm Labor Union, membership in which is not open to Mexicans, has charged southern California growers with by-passing local workers for the "wetbacks," some of whom, it is claimed, work for as little as 3 dollars a week! The Union seeks 1 dollar an hour for its members instead of the present 60 cents.

Striking farm workers are making wholesale "citizens' arrests." The U.S. Immigration Service is footing a rapidly rising bill to repatriate an alarming number of illegal alien entrants. No violence has been reported to date in the potentially explosive situation, but fooling with fire is foolish!

My hope is that this swarm of human locusts does not reach the hop yards. Hop harvest produces plenty of headaches of domestic origin. There is no need to invite trouble from below the border. The Wheatland hop fields riot of August 3, 1913 constitutes an unsavory sample of what can happen.

Mexican nationals, some years ago, rendered admirable assistance to hop growers in Oregon and elsewhere. It should be remembered, however, that they were recruited under inter-governmental pacts insure prevailing wage, housing, insurance, and other emoluments.

Over the years Chinese, Filipinos, Indians, Japanese, Negroes, and P.O.W.'s have worked well though not always in mixed groups. The best hop-yard workers are by no means all white nor of any particular nationality.

President Truman's Migratory Labor Commission's report as abstracted in the Portland Oregonian of April 8, 1951 is worth reading. Oregon's Fair Employment Practices Act and the "Kimsey report" regarding it, as printed in the Corvallis Gazette-Times of April 16, 1951, rates reference also.

Should serious shortages in hopyard workers show up again this season, Oregon hop growers, I am sure, will resolve their problems patriotically with an eye to the welfare of North American workmen and without recourse to unwelcome "wetbacks."

A JOLT FOR JULY

"Lucky is the land that is tilled by the men who own it."
HOP COSTS

Under date of February 3, 1951 the following information was prepared by G. W. Kuhlman, Agricultural Economist, Oregon State College, Department of Agricultural Economics.

HOPS IN WESTERN OREGON: Estimated Cost of Production and Seasonal Average Price 1934-1950*

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<th>Year</th>
<th>Yield Lbs. per acre**</th>
<th>Cost per acre</th>
<th>Labor</th>
<th>Other</th>
<th>Total costs</th>
<th>Cost per pound</th>
<th>Price per pound</th>
<th>Per cent: price is of cost</th>
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Average 924 - - - - - 33.9¢ 41¢ 117

* Data for 1934-1936 are taken from Oregon Agricultural Experiment Station Bulletin 364, "Cost and Efficiency in Producing Hops in Oregon."

** Prices and yields for 1937-1948 are taken from Agricultural Statistics. The estimated prices and yields for 1949 and 1950 were obtained from the Crop Reporting Board, Bureau of Agricultural Economics, U.S.D.A.

The estimates of labor costs are based on Oregon farm wages per month as reported by the Bureau of Agricultural Economics. The estimates for other costs are based on the index of production costs (prices paid by farmers for commodities, interest, and taxes) as reported in "The Agricultural Situation" published monthly by the Bureau of Agricultural Economics. Beginning with 1940, adjustments were made in the estimated cost of harvesting and of spray and dust, based upon special investigations made subsequent to the original study.

No consideration has been given herein to the effect of restricted harvesting on costs.

DATA ON DESIGNS

## HOPS: U. S. ACREAGE AND PRODUCTION 1920 - 1950

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<td>1950</td>
<td>13,800</td>
<td>24,081</td>
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<td>9,400</td>
<td>16,121</td>
<td>37,800</td>
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1/ In addition to the 3 states, Idaho harvested 850 acres in 1949 and 1,390,000 lbs; and 1,000 acres in 1950 (prel.) and 1,855,000 lbs.

Source: Bureau of Agricultural Economics, U. S. Department of Agriculture

Prepared by Oregon State College Extension Service
Agricultural Economics Section
March 8, 1951
### Yield of Hops per Acre, by States, 1920 - 1950

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<th>California</th>
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</table>

1/ Yield of hops, Idaho, 1949, 1,635 lbs; 1950, 1,855 lbs.

Source: Bureau of Agricultural Economics, U. S. Department of Agriculture.

Prepared by Oregon State College
Extension Service
Agricultural Economics Section
March 9, 1951
<table>
<thead>
<tr>
<th>Year</th>
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p Preliminary. 1/ Season average farm price in Idaho: 1949, 60¢; 1950, 61¢.

Source: Bureau of Agricultural Economics, U. S. Department of Agriculture.

Prepared by Oregon State College
Extension Service
Agricultural Economics Section
March 9, 1951

<table>
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<th>Carry-over stocks 1/</th>
<th>Imports</th>
<th>Exports</th>
<th>Consumption by breweries</th>
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<td>(Million pounds)</td>
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</table>

p Preliminary.

1/ Brewers stocks were not reported prior to 1937 and are not included from 1920 through 1936

Source: U. S. Department of Agriculture

Prepared by Oregon State College Extension Service
Agricultural Economics Section
Sp-28-100
March 9, 1951
NEW YARD AT ONTARIO

The Ontario ARGUS OBSERVER, issue of May 7, 1951 reported, "New Hop Yard. A new hop yard has come to the community. Paul Berg, who has a yard on the Vale-Ontario highway, recently purchased thirty acres on the north side of Foothill Drive at the junction with Halliday Road and the poles are up and other work under way."

HERMISTON HAPPENINGS

The PENDLETON EAST OREGONIAN, issue of May 4, 1951 carried the following item of interest, "New Hop Dryers Now Underway at Hermiston. A new structure taking the place of the hop dryers destroyed in a spectacular blaze last fall during the height of the harvesting season on the Hermiston Farms Inc., is now in the process of construction.

"The new dryers will be constructed of pumice blocks. The building will be 3½ by 60 feet in dimensions. The new type dryers will be capable of handling 18,000 pounds of hops in a 21½ hour run.

"Wood was burned as fuel in the old dryers, but the new plant will be equipped with oil burners and a 10,000 gallon fuel tank has been installed. It is estimated it will require about 20,000 gallons of oil to complete the annual harvest.

"There are to be drastic changes in the next hop harvest, said Manager Harvey Kaser of Hermiston Farms Inc., chief of these being a portable stationary picker. Machine picking, of which the company operated three, will be eliminated as being too wasteful and leaving too many hops on the ground in the field. With the portable stationary picker the hop vines will be brought to the picker.

"Six trucks will be in service during the harvest season, transporting the hops to the stationary picker, said Kaser.

"Eighty new acres of hops have been strung and are doing well although hindered slightly by the lateness of irrigation water on the Stanfield project.

"Altogether there will be 180 acres of hops to be harvested this fall."

LABOR SHORTAGE

The GRANTS PASS COURIER, issue of May 9, 1951 reported, "Hop Trainers Needed Now. An acute shortage of hop trainers exists in Josephine County, according to H. V. Retherford, manager of the state employment service office. Expected migratory workers have failed to put in an appearance, Retherford said, and immediate assistance of local workers is needed.

"Some 75 openings for hop trainers and other hop-yard workers are listed in the employment office today and more will be needed, particularly if the weather turns warm. Women, as well as men, are needed."

THE OREGONIAN, issue of May 22, 1951 stated, "Hop Workers In Demand. Workers to train hops are in such demand that the local branch of the state employment service has appealed to high school students to enter the fields during week-end holidays.

"H. V. Retherford, manager of the local office, estimated that 300 more employees are needed."
SYSTEMIC INSECTICIDES

DOWN TO EARTH, winter, 1950, carried an important article by W. E. Ripper entitled "The Outlook For Systemic Insecticides."

Particulars about Pestox 3 are provided under the following headings: introduction, absorption by plant and translocation, tenacity of toxic action, insecticidal action and selective toxicity, health risk, virus prevention and future outlook. The name "Schradan" is proposed to replace Pestox 3 (Bis (bis dimethylamino phosphorous) anhydride).

Both aerial and soil applications are possible. Translocation occurs within the leaf, from leaf to leaf, from leaf to flower head, from seed to young plants, from roots to vegetative organs.

The material is said to be effective against aphids and red spider mites but not to their predators.

Proper precautions in the use of the material are essential. Toxic hazards in treated fields, however, are said to disappear within 24 hours. A six-week interval between spraying and harvesting is said to be sufficient to avoid unfavorable residues.

Treated hops and the application of the material to hops by helicopter and two types of automatic sprayers are pictured.

HOPPED UP

The OREGON JOURNAL, issue of May 29, 1951 ran an item entitled "Our Ties With Southern Oregon," a part of which is quoted herewith. "The chamber-sponsored trip of some 36 Portland businessmen to Medford, Ashland, and Grants Pass last week demonstrated to those who made the tour, and should to other Portlanders, the value of firsthand information and the importance of this section of the state.

"This trio of cities forms the heart of an area which is fast developing. The lumber industry is booming; the hop industry, "hopped up" by irrigation, brought in $1 million last year."

MORE ON AMENDMENT

The TOPPENISH REVIEW, issue of April 19, 1951 announced, "Hop Growers Group Views Amendment. Members of the William Roy hop growers committee met Friday night at the Bungalo to discuss marketing agreement problems. After considering information presented at the recent Portland hop growers meeting, the committee took the stand that the proposed amendment to the marketing agreement must stop increased acreage for allocation purposes or the agreement as it now stands "will ruin the industry."

"The committee, composed of growers seeking alteration of the marketing agreement will prepare a brief to submit to the department of agriculture."

UP AND DOWN

The Oregon City ENTERPRISE-COURIER, issue of May 1, 1951 ran a pair of photos of the tying operation in full swing in a nearby hop yard. Under the heading, "Hops Must Have Strings To Climb On" one crew was tying the strings up; a second crew was tying them down!
CONFUCIAN CONCEPT

During a dim and distant dynasty some sapient Chinese scholar who could have been Confucius soliloquized, "Big fish eat little fish; little fish eat shrimp; shrimp eat mud." The observant oriental said a mouthful! Current trends in the American brewing industry could not be more clearly characterized. The hop growers' outlets are becoming constricted, but fast! BREWER AND DISPENSER for June, 1951 reported that the recently released tenth annual edition of the "Brewing Industry Survey" prepared by the Research Company of America disclosed that during 1950 twenty-five leading brewers in the United States sold more than 55 per cent of the Nation's total beer volume.

The number of breweries in the United States has shrunk from 598 plants in 1940 to 383 plants today. During the last 10-year period, approximately one-third of all brewing facilities have discontinued operations. A definite trend toward concentration of beer production in the hands of larger manufacturers has been increasingly evident ever since repeal of the Eighteenth Amendment. Since 1933 about 350 local and regional breweries have closed their doors.

Not more than 2 per cent of the hops produced annually in the United States are consumed for other purposes than the manufacture of fermented malt beverages. In 1949, the last year of record, American brewers consumed 37.4 million pounds of hops, 51.5 per cent by the leading 25 brewers. The big boys, generally speaking, are becoming quality-conscious. Likely lads in the brewery laboratories or in those of commercial consultants are qualified, we hope, to question the chemical character of the hops they handle. They are moisture-minded because overdrying means excessive breakage. Excessive breakage during the harvest, drying, and baling operations is detrimental to brewing value. Aroma, associated with volatile oil content, is of paramount importance in dry-hopping procedures practiced by ale makers. Leaf and stem content looms large in the minds of most master brewers. Trade tolerance, as a result, has been set at 10 per cent. There is a spread of 10 cents a pound between seedless and seeded hops although opinions differ widely as to the deliterious derivatives from seeds.

When all is said and done the fewer the outlets for hops there are the fussier the consumers can become. It behooves hop producers to attempt to placate their principal patrons as far as possible. They should, however, be adequately repaid for their pains!

Increasingly constricted outlets ought to bring producer and consumer into closer cooperation which should be of benefit to both.

AN ASSERTION FOR AUGUST

"Land without population is a wilderness; population without land is a mob."
OREGON SOIL ANALYSES

Analyses of hop year soil samples, reported in the paragraph headed, "Soil Sample Summary" which appeared on page 2 of the November 1, 1949 issue of THE HOP PRESS have been completed for pH and organic matter content. There was no consistent correlation between either of these factors and yields. A summary is submitted herewith:

<table>
<thead>
<tr>
<th>VARIETY</th>
<th>AV. POUNDS PER ACRE</th>
<th>AV. pH</th>
<th>AVERAGE ORGANIC MATTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Clusters</td>
<td>522.44-2,777.69</td>
<td>5.74-7.84</td>
<td>0.37-2.75</td>
</tr>
<tr>
<td>Fuggles</td>
<td>522.44-1,551.03</td>
<td>5.75-6.28</td>
<td>2.16-3.85</td>
</tr>
<tr>
<td>Late Clusters</td>
<td>522.44-2,570.14</td>
<td>5.44-8.16</td>
<td>0.61-4.36</td>
</tr>
</tbody>
</table>

HOP BOWL BUSINESS

The INDEPENDENCE ENTERPRISE, issue of April 20, 1951 reported, "Recreation Area On River Bank To Be Developed. A project to clean up the river bank and build a picnic and boating area just north of the old ferry landing will be started immediately under auspices of the Hop Bowl incorporated, according to Tom Smith, president.

"Smith said the picnic area will include about 500 feet of river bank, and that a boat landing platform will be built. Running water will be piped to the area picnic tables, and benches and tables installed, and picnic stoves built.

"The area should be developed for use this summer, Smith said, and will be open to all persons and groups.

"The land to be used formerly belonged to the Hop Bowl, but was donated to the city, and is now leased at $11 per year back to the Hop Bowl for the development of the recreational area."

PLANS TO PICK

The SALEM STATESMAN, issue of December 9, 1950 carried the following item, "Hop Corporation Files. Articles of incorporation for Prairie Hop Company of Gervais Route 1 were filed with the Marion county clerk Friday by Phillip E. Wolfe, Robert T. Coleman, and Edward F. Davidson. The firm will engage in the mechanical harvesting of hops."

THE OREGONIAN, issue of February 8, 1951 reported, "Hop Pact Filed In County Court. Hop Picking will be resumed in Clackamas county's largest hop yard next fall, according to a hop purchase contract filed with the county court. This yard, located between Oregon City and Park Place, is one of the oldest in Oregon and for the first time in its history, was not picked of 1950 crop.

"The entire crop was left on the vines last fall. The owners, Mr. and Mrs. Kola McClellan of Salem, had sold the allotments under the hop marketing agreement to other yard owners who by using the Park Place hops to satisfy withholding demands, were able to pick all of the hops in their own yards.

"Contract for the yard's hops was filed this week by George Segal company, hop brokers of New York city."
SMALL BREWERS ASSOCIATION Bulletin No. 937 published June 15, 1951 announced, "At the last meeting of the Board of Directors of the Small Brewers Association, the sum of $10,000.00 was voted to the RESEARCH FOUNDATION of the Master Brewers Association of America."

TANTALIZING TITLE

On file in the Oregon State College Library is a Doctor's thesis for 1950 authored by O. J. Junt, entitled, "An Investigation Involving The Sampling Of Morphological Characters For Use In Estimating Disease Resistance And Sample Size In Hops."

RECENT REPRINT

Available in limited number, upon request, are reprints of an article by Jerome C. R. Li and Kenneth R. Keller which appeared in AGRONOMY JOURNAL for April, 1951 under the title, "An Application of Serial Correlation in Field Experiments." Uniformity trials on hop data are involved.

"WETBACKS" AT WORK

THE CORVALLIS GAZETTE-TIMES, issue of June 22, 1951 carried the following item of interest: "300 'Wetbacks' Get Boot From Northwest. More than 300 'wetback' Mexican laborers have been deported from northern Oregon, eastern Washington and Idaho, immigration officials said today.

"Regional Immigration Director John P. Boyd said the deportation followed a month of clean-up work in the northwest."

SUIT SETTLED

THE STATESMAN, issue of May 5, 1951 carried the following account, "Judgment Granted In Hop Damage Suit. Judgment for the full $3,477 they had sought was granted J. A. and Albert McCormick by a Marion county circuit court jury Friday, in a hop contract damage suit.

"The McCormicks had sued Ralph E. Williams, Jr., doing business as Williams and Hart, alleging that the latter firm had inspected and accepted for purchase 21 bales of hops in 1947, then repudiated the agreement on the grounds that the hops did not meet quality requirements."

DOMESTIC DROP

The Oregon City ENTERPRISE-COURIER, issue of May 13, 1951 reported, "Domestic Hop Use Drops. Domestic use of hops continued to lag in February. A drop of 18 percent from a year ago is shown by the latest month for which data are available. Total use for the first six months of the current season is slightly less than for the same period a year earlier and about one-tenth less than two years ago.

"Exports of United States hops on the other hand remained relatively heavy. Movement out of the country from September through February was 28 per cent greater than the first half of the previous season. Imports of hops have been smaller than usual so far this season."
DIVERSION PRIVILEGE PREFERRED

The following item appeared in THE OREGONIAN, issue of June 26, 1951, "Hops Market Plan Rejected. Proposed changes in the Pacific coast hop marketing agreement restricting growers' diversion privileges have been rejected by the U. S. department of agriculture, W. J. Broadhead, USDA field representative here, said Monday.

"The decision followed a hearing here March 19-21 on a proposal to limit the diversion privilege to hops actually harvested. This was modified during the hearing to provide for diversion of 50 per cent unharvested hops within a growers' salable allotment.

"The department, Broadhead said, found insufficient evidence was presented to justify the change, and decided to retain the diversion privilege substantially in its present form.

"Proponents of the proposed change saw in it a means of checking rapid expansion of hop acreage. Witnesses testified large growers were increasing plantings, then purchasing marketing rights (diversion certificates) of other growers who left their hops unharvested. Washington growers generally favored the amendment, while an Oregon group opposed it.

"The department gave its approval to an amendment requiring growers to furnish periodic reports on uncertificated 'hot hops,' and providing for supervision of their disposal by the hop control board. Several other amendments relating to administrative procedures also were approved.

"Interested persons were given until July 12 to file exceptions to the department's findings.

"The agreement covers hops grown in Washington, Oregon, Idaho and California."

SCS MAN AT MABTON

THE OREGONIAN, issue of June 30, 1951 carried the following item of interest, "WSC Soils Chief Takes New Post. Dr. Lawrence C. Wheeting, research director of soils and director of the Washington state conservation conference, Friday announced his resignation effective August 15.

"He said he will take a production job with the Washington chief ranches at Mabton, near Yakima.

"Wheeting has been at the state college since 1931. He was named director of the conservation conference last year."

FIRE FIGHTERS

The Salem CAPITAL JOURNAL, issue of June 18, 1951 announced, "Attend Convention. Officers and employees of the Farmer's Fire Relief association of Butteville and the Hop Growers association, located at Woodburn, who attended the convention of the California Mutual Fire Insurance company at Al Taho, Calif., last week were Fred Dentel, president of the Hop Growers association; George Berg, president of the Farmers' Fire Relief association; Glen Ahre, secretary; Miss Vera Kocher, assistant secretary; and Mrs. Lois Gaviola. They returned Thursday except Miss Kocher."
FOREIGN AGRICULTURE CIRCULAR, dated December 21, 1950 was entitled, “World’s 1950-51 Hops Crop Exceeds Prewar Average.” The title, as usual, fails to give an adequate idea of the amazing amount of information contained in the 40 fact-packed pages. Space limitations prevent a complete abstract here. The following items, however, will be of interest.

Austria: "Despite the fact that hops were grown successfully within the present boundaries of Austria before the war, although on a steadily declining basis, and despite the dependence of breweries on imported hops, none are grown there commercially at the present time. Preliminary returns of the 1950 land utilization census show only 3 hectares (7 acres) under cultivation. The most important obstacle to a reestablishment of the industry has been the difficulty in obtaining rootstock from Czechoslovakia and Bavaria."

Belgium: "Belgium's 1950 hops crop has been estimated by the Ministry of Agriculture at 886 metric tons (1,953,000 pounds) from 456 hectares (1,132 acres), with a yield of 19.9 metric quintals (441 pounds) per hectare (2.471 acres). The 1949 crop was officially estimated at 648 metric tons (1,425,000 pounds) from 648 hectares (1,567 acres), with a yield of 15.0 metric quintals (3,307 pounds) per hectare. Picking of the crop was completed by early October. Although production in 1950 shows an increase of more than 35 per cent over that of 1949, mainly because of above-average yields, it is still substantially below the prewar (1934-38) average of 2,659,000 pounds. However, it is the largest crop since the end of the war.

"The American Embassy in Brussels points out that trade estimates of Belgium's hop area and production are always considerably higher than the official estimate. Last year (1949), for example, the trade estimated the crop at 22,000 centners (2,425,000 pounds) from at least 500 hectares (1,236 acres). This year (1950) the crop was estimated by the trade, early in October, at 25,000 centners (2,756,000 pounds) from 500 hectares. The trade estimate of the 1950 crop, therefore, is approximately 800,000 pounds higher than the official estimate.

"Weather conditions are said to have caused some damage to the crop this year, especially to its color. Peronospora and red spiders also caused some damage. Consequently, the quality of the 1950 crop is not likely to be as good as that of last year. In the Alost-Asse region, where the crop this year is estimated by the trade at 8,000 centners, about 75 per cent of the hops are classed as seedless. In the Poperinghe region, where the crop is estimated at 17,000 centners, only 25 per cent is classed as seedless."

Brazil: "Brazil produces only insignificant quantities of hops. A small plot in the State of Rio Grande do Sul is reported as having produced 600 kilos (1,300 pounds) in 1949. The requirements of the brewing industry, therefore, must be met by imports.

Canada: "Canada's 1950 hops crop is tentatively estimated at 2,031,000 pounds compared with 1,886,000 pounds in 1949. The total area under hops this year is placed at 1,659 acres, compared with 1,632 acres harvested in 1949. The hops acreage in Canada has been declining for several years. Even with the slight increase this year, the total hops area is still 317 acres under the postwar high of 2,006 acres in 1946. British Columbia continues as the major producer. Production in Ontario and Quebec accounts for only a small part of the total crop. Uncertain yields and high labor costs have forced many producers in the eastern Provinces to abandon the crop."
Chile: "Attempts to develop a hops growing industry in Chile have not been successful to date, but Chilean breweries continue to hope that a region where climatic and soil conditions are favorable will be found eventually. Although hops consumption is comparatively small, and probably would not require the planting of more than 300 hectares (741 acres) to produce the nation's annual requirements, local interests feel that the amount of dollars that must be spent to purchase this product from abroad is sufficiently large to warrant the investment that would be necessary to develop a successful hops industry."

Czechoslovakia: "No firm estimate of the 1950 hops crop in Czechoslovakia is available. Recent reports from trade sources placed the crop at no less than 90,000 centners of 50 kilograms (9,921,000 pounds). This compares with the officially revised estimate of 88,571 centners (9,763,000 pounds) for the 1949 crop. Before the war (1934-38), the Czechoslovakian crop averaged 21,462,000 pounds annually.

"Indications are that the 1950 crop was below average in quality. Apparently, a much larger crop was anticipated, but yields were not up to expectations because of such factors as drought, shortage of labor, lack of fertilizers, and inexperienced pickers. The Czechoslovakian Government has been putting on a big campaign to get farmers to increase their hops production, renovate old gardens, and cultivate and tend their gardens more carefully. There have been reports to the effect that under ideal conditions, the present acreage might yield as much as 120,000 centners (13,228,000 pounds) of hops. That would still be substantially below the prewar average."

Denmark: "Although Denmark is a large producer and consumer of beer, indigenous production of hops is insignificant. The small quantities that are produced are used entirely by the growers for home brew. Breweries obtain their supplies entirely from abroad."

Ecuador: "There is no commercial production of hops in Ecuador. Brewery requirements are met entirely by imports, principally from the United States, but with small quantities from Germany. Consumption during 1949-50 (July-June) was estimated at 26,000 kilograms (57,300 pounds), the same as during 1948-49. Since beer production is showing an upward trend, hops consumption during 1950-51 may be at a somewhat higher level."

France: "An official forecast in mid-August, placed the 1950 hops crop in France at 1,666 metric tons (3,673,000 pounds) from 1,777 hectares (4,391 acres). This compares with the revised estimate for the 1949 crop of 1,282 metric tons (2,827,000 pounds) from 1,142 hectares (2,753 acres). Weather conditions up to mid-August were favorable and the opinion at that time was that if they continued so until early in September, the crop would be larger than in any year since the war. Prewar (1930-1939) production averaged 2,117 metric tons (1,733,000 pounds) from 2,128 hectares (5,258 acres).

"New postwar plantings are continuing to come into production, and the condition of the hops vines continues to improve. If the 1950 crop actually reached the August estimate, it would cover all but a small proportion of French brewery requirements. As a result, imports during the 1950-51 brewing season will probably be substantially reduced from the level of recent years."

Italy: "There is no commercial production of hops in Italy and all of the requirements must be imported. In recent years, the bulk of the requirements have been supplied by Germany and Czechoslovakia."
Mexico: "Hops production in Mexico is negligible. An experimental planting of about five hectares (12.4 acres) has been made near Monterrey, and a small area is reported near Ciudad Camargo and Zacatecas. Past efforts to produce a domestic supply of hops have not been successful. Brewer requirements, therefore, are supplied entirely by imports."

Netherlands: "Hops are not grown in commercial quantities in the Netherlands, brewers depending entirely on imports for their requirements. The imports come mainly from Germany and Czechoslovakia."

Norway: "Norwegian breweries depend entirely on foreign countries for hops, since none are produced locally. Virtually all of the imports come from Western Germany and Czechoslovakia."

Portugal: "Since there is no production of hops in Portugal, consumption by breweries over a period of years is approximately equal to imports. However, there is a tendency in some years to import rather heavily for stockpiling purposes. This might prove to be the case this year."

Sweden: "Production of hops in Sweden remains insignificant, the 1950 crop being estimated at only 8 metric tons (17,640 pounds) from 10 hectares (24.7 acres). According to the Swedish Brewers' Association, the quality of homegrown hops is very good, especially the variety known as 'Svalof 85.' This is attributed to the particularly favorable soil conditions and the skill of growers in the limited area where hops are now grown."

Switzerland: "No hops are produced in Switzerland. The Swiss Brewers' Association (Schweizerischer Bierbrauerverein) of Zurich, estimates that hops consumption now ranges between 350 and 400 metric tons (771,600 and 881,800 pounds) per annum. These requirements have been met largely by Czechoslovakia and Germany. There is increasing interest, however, in hops from the United States."

Union of South Africa: "The Union of South Africa hops growing season is the reverse of that in the Northern Hemisphere. The growing season in that country begins in October, while harvesting takes place in February-March. No estimate of this season's crop is available as yet. Last year's (1949-50) crop is now estimated at 176,226 pounds, dried basis, from a harvested area of approximately 312 acres. A total of 8 acres was not harvested because of damage from drought. The 1948-49 crop amounted to 252,000 pounds from 320 acres."

"The South African hops growing industry is located in the Neighborhood of George, Cape Province. During the 1949-50 season, that area experienced one of the most severe droughts on record. The drought, which occurred in November and December, a vital part of the growing season, prevented many hops from developing normally. Many of the plants remained in the 'bur' stage for a period of eight weeks. As a result, yields per acre were only a little over 50 per cent of what might be expected in a normal season."

"Production of hops in South Africa is a monopoly exercised by the Union of Hops Growers (Pty.) Limited, a subsidiary of South African Breweries Ltd., and by Ohlsson's Cape Breweries Ltd. These two establishments own and operate breweries throughout the union and in Southern Rhodesia and absorb the entire domestic production."

United Kingdom: "The 1950 hops crop in the United Kingdom was estimated late in October at approximately 365,250 cwt. (40,908,000 pounds) compared with..."
250,202 cwt. (28,023,000 pounds) in 1949. This would represent the largest crop since 1924. The area under hops in 1950 was placed at 22,198 acres, of which 20,500 acres were grown by farmers under the control of the British Hops Marketing Board, and 1,698 acres by brewers for their own use and outside of the jurisdiction of the Board. Weather conditions this year were exceptionally favorable during most of the season. As a result, yields were substantially above the 10-year (1940-49) average of 13.5 cwt. (1,516 pounds) per acre. However, the quality of the crop was reported as varied because of inclement weather during August and the picking period."

Uruguay: "Hops production in Uruguay is confined to experimental plantings conducted by two breweries. Climate and soil conditions do not favor large-scale production, and brewery requirements must be provided by imports."

Venezuela: "Hops are not grown in Venezuela, all requirements being supplied by imports. Before the war, most of the imports came from Europe, and Venezuelan brewers considered Czechoslovakian hops to be the best quality available."

Western Germany: "The 1950 hops crop in Western Germany was officially estimated by the Ministry of Agriculture in November at 188,000 centners of 50 kilograms (110.23 pounds each, or approximately 20,723,000 pounds. The actual crop, it was stated, may well be 220,000 to 230,000 pounds higher. This represents not only the largest crop since the end of the war, but also one that exceeds the prewar (1934-38) average of 20,033,000 pounds. Last year's (1949) crop amounted to 113,913 centners (12,510,000 pounds). Picking of the crop began on August 17 and was finished early in September."

Yugoslavia: "No estimate of the 1950 hops crop for all of Yugoslavia is available. The official preliminary estimate for the Savina Valley, the principal producing area, is 700 metric tons (1,543,000 pounds) from 1,400 hectares (3,459 acres). The prolonged and severe drought, beginning in early May and extending in some areas to late in July, substantially reduced earlier crop prospects. Of the 1,400 hectares planted in the Savina Valley this year, approximately 100 hectares represented new plantings."

"Last year, when the total Yugoslavian hops area amounted to approximately 1,500 hectares (3,700 acres), the crop was estimated at 1,000 metric tons (2,205,000 pounds). The prewar (1934-38) average area was 2,700 hectares (6,700 acres) with an average production of 1,804 metric tons (3,977,000 pounds)."

"Spring planting in the Savina Valley was substantially delayed by prolonged rains in April. That period was followed by an unbroken drought through May, June, and the first half of July. In consequence, the plants were not able to make normal development. About mid-August, wind and hail storms caused further damage, knocking many cones and side shoots to the ground, and causing a considerable amount of brown spotting on cones not destroyed. Aside from spotting due to hail, the quality of the crop was reported as excellent."

MACHINE MAY HAVE MERIT

THE CASE EAGLE, edited by E. R. Durgin, is a monthly publication of J. I. Case Company, Racine, Wisconsin.

The December 1950 issue carried an illustrated article entitled, "Stalk And Vine Shredder A Popular Machine." This machine may be of interest to hop growers, who hand pick or who use portable picking machines, as a means aiding them to use hop vines as a source of organic matter in their fertilizer programs.
Reputation results from the company one keeps! The primary processor of hops is the fermented malt beverage industry. Brewing is an ancient and honorable profession. As an industry, it is large, legitimate and fully aware of its responsibilities to the public, critics and consumers alike.

The United States Brewers Foundation was founded in 1876. It is a non-profit association representing over 80 per cent of U.S. brewing volume. Since 1938, one of the Foundation's important activities has been a program of educating beer retailers in their legal, civic and social responsibilities. This involves close cooperation with state and local licensing and law-enforcement officials. "Business clinics" are currently being conducted with representatives of the armed forces, civil authorities and retail beer distributors. The aim of the program is to prevent violations or complaints by citizens or authorities before they occur. In occasional instances, however, the Foundation has taken the lead in having irresponsible retailers clean up or close up.

The Foundation's present armed forces liaison program employs travelling field representatives with a background of thirteen years of self-regulation experience with civil authorities with representation in thirty-three states. Elsewhere cooperation is accomplished through state or local brewers associations.

So far, so good! The public press is not prone to accentuate these admirable activities. Nauseating notice, however, is currently being given to the criminal accomplishments of one Waxey Gordon, "the last of the beer barons in the New York area," who, during prohibition, muscled into a string of big New Jersey breweries.

The imposition of organized crime on defenseless dupes engaged in numerous law-abiding economic enterprises is nothing new. The Kefauver account of the California "beer lobbyist", Samish, is something else again! The dire details are definitely disturbing. The California State Brewers Institute is said to have provided him in 1949 a modest $30,000 in salary and expenses, plus control of a $153,000 a-year slush fund. Suckers!

This, in our opinion, represents an all-time low in poor public relations. Foundation fathers must be cringing in their crypts!

Let's keep the beer business clean, chums. After all, hop growers' profits are at stake! An obnoxious advocate is not apt to stimulate increased per capita consumption of an otherwise pleasing product.

A SAYING FOR SEPTEMBER

"Tossing another bone in the kettle adds no meat to the soup."
A second meeting of the Hops Sub-Committee of the Farm Crops Committee of the Oregon Agricultural Economic Conference was held at Corvallis on July 9. Participating were: F. A. Christie, Howard Eismann, and G. R. Hoerner. F. W. Lucht was delayed en route from Mt. Angel and reached Corvallis after the meeting had adjourned.

A preliminary report will be prepared by the Secretary and submitted to committee members by mail. The final report will be available early in 1952.

**PROGRAM**

**HOP GROWERS FIELD DAY**
Corvallis, Oregon

**DATE:** Friday, August 3, 1951  
**TIME:** 1:30 to 4:30 p.m.  
**PLACE:** Experimental Hop Yard, East Farm. First left-hand turn across Willamette River Bridge on old road to Albany. Follow signs.

**Afternoon**

1:30 to 2:00 A Brief Review Of The Hop Research Program.  
G. R. Hoerner, Extension Hop Specialist

2:00 to 4:30 Conducted Tour Of Experimental Plots.  
K. R. Keller, Agronomist USDA

High-Low Fuggles Selections
Hop Breeding Block
Cultural Trials: spacing, number of vines per hill, height of stripping, and variety yield tests.
Fertilizer Trials On Beach Hop Yard

Between sixty and seventy individuals participated in the above program—a few more than last year. We were happy to have County Extension Agents Inskeep and Ottoway with us as well as Blitz-Weinhard's Brewmaster August Sold and his two assistant Brewmasters W. T. Hamilton and H. O. Hausermann.

K. R. Keller conducted the tour in his usual effective and efficient manner. En route, Assistant Chemist R. A. Magee did a good job of explaining briefly, but clearly, the chemical studies with hops on which he is engaged.

**BENEFICENT BREWERS**

The FOREST GROVE NEWS-TIMES, issue of July 12, 1951 announced, "OSC Gets Grant For Hop Research. A grant of $25,000 to carry on five hop research projects during the next two years has been given Oregon State College by the U. S. Brewers Foundation, announces G. R. Hoerner, extension hop specialist.

"F. E. Connery, hop foundation technical adviser, Newark, N. J., met with the experiment station hop research committee recently. Announcement of the grant followed.

"The approved subjects include studies in the fields of germination, moisture, morphology, analytical methods for determining hop quality and insect control."
Program at Prosser

Starting at 1:30 p.m. on August 7, 1951, the Irrigation Experiment Station held the following Hop Field Day Program:

Master of Ceremonies: John Keene, Yakima County Extension Agent in Farm Crops.


2. E. C. Klostermeyer, Assistant Entomologist, Irrigation Experiment Station. "Hop Pest Control."

3. Dr. R. L. Hausenbuiller, Assistant Soil Scientist, Irrigation Experiment Station. "Soil Fertility in the Yakima Valley."

4. A. I. Dow, Assistant Agronomist, U.S.D.A., Irrigation Experiment Station. "Hop Research at the Irrigation Experiment Station."

Recommendations were reviewed for the control of ants, red-backed cutworms, lice, and red spider mites.

Hop canker, crown gall, downy mildew and "leaf scorch" were discussed.

A report was presented on a survey of missing hills, organic matter, and soil acidity.

Some fifty persons participated. Following discussions of the above listed topics on the shady station lawn, the experimental hop planting on the station grounds was inspected. Extensive additional plots located at the nearby E. E. Gagner yard were visited by station bus.

Experimental plots have been established to secure information on cover crops, date and severity of vine cutting, height of stripping, the use of organic and inorganic fertilizers, and yard improvement by the use of cuttings from high-yielding compared with low-yielding plants.

Allotments Being Made

The Portland Oregonian, issue of July 10, 1951, announced, "Board To Make Hop Allotments. Salable allotments for the 1951 hop crop in Oregon, Washington, California and Idaho will be determined by the hop control board at a meeting in Yakima, July 20-21. The board administers a federal marketing agreement on hops in the four states.

"The allotments, which are set on a percentage of the crop, determine the amount of hops a grower legally may market under the agreement. The board's recommendations are subject to approval by the secretary of agriculture.

"Practice of some growers has been to leave their hops unharvested, then sell their allotment certificates (marketing rights) to other growers who thus are able to market their entire crop. A proposed change in the agreement aimed at curbing this practice recently was rejected by the United States department of agriculture."
COMMITTEES CONFER

On July 10 the annual meeting of members of the Oregon Hop Industry Research Advisory Committee and the Hop Research Committee of the Oregon Experiment Station met at Corvallis for an all-day session. The morning was devoted to a discussion of the experimental program. Following a joint luncheon, at which Dr. W. G. Keyworth discussed experimental work on hops in England, the afternoon was devoted to a tour of the experimental yards. Twenty persons were in attendance.

THE OREGON JOURNAL, issue of July 15, 1951, carried the following account, "Joint Committees Plan Help For Hop Yields. An expanded long-range hop research program aimed at improving Oregon's competitive position in hop yields was mapped out at Oregon State college last week at a joint meeting of the Oregon hop industry research committee and the OSC experiment station hop research committee.

"With Oregon's per acre hop yield resting at the lowest level of the Pacific Coast hop-producing states, the broadened research plan will be concentrated on conquering disease and other problems which have caused the decline in Oregon hop yields.

"Five research projects will be initiated by the experiment station with the assistance of the U. S. Brewers foundation which has increased its financial support of the OSC hops research program for the coming year. In the past, the brewers foundation has provided financial support on a year-to-year basis, but now has agreed to place the assistance on a long-range plan and increase the total donation to $25,000.

"Key figures in the Oregon hop industry were on hand to hear the proposed research plan and offer suggestions. Dr. W. G. Keyworth, one of England's leading authorities on hop diseases and a plant pathologist at the East Malling research station, was an interested visitor.

"Dr. Keyworth, who is a specialist on wilt diseases of hops, is in the U. S. on detached service. His work in England has included the development of wilt-resistant hop varieties, two of which--Keyworth's Early and Keyworth's Mid-season--bear his name.

"In the U. S. since last November, Dr. Keyworth has been working at the Connecticut experiment station. Now on a tour of the U. S., he will spend several days in Oregon and Washington visiting hop growing areas with G. R. Hoerner, OSC extension hop specialist.

"Stops on the tour will include hop yards in the Willamette valley, Hermiston and Yakima areas and the Prosser experiment station in Washington."

SCALES BEING TESTED

The CANBY HERALD, issue of July 5, 1951 carried an announcement of the beginning of the series of annual scale tests to be held at various points throughout the state. "Scales To Be Tested In Canby July 10. A testing station for all hop and bean scales in this territory will be operated Tuesday, July 10, at the Buchanan-Cellars Grain company plant in Canby, from 3 to 5 p.m., it was announced this week by the state Department of Agriculture.

"E. C. Lind, inspector of weights and measures, will be in charge of the testing. Growers may leave their scales at the station in advance of the testing date. All scales must be tested and licensed each year. Scales with a capacity of 600 pounds or less, which include most of those in use for hop and bean harvests, require a 50 cent license."
EXPERIMENTS EXPLAINED

The CORVALLIS GAZETTE-TIMES, issue of July 12, 1951, carried the following item of interest, "Experimental Hop Work Here Aimed at Downy Mildew End. New hop varieties are being developed by means of controlled pollination in an experimental hop yard located two miles east of Corvallis on the eastside Albany highway. This is a federal-state cooperative undertaking under the direction of representatives of the U.S. department of agriculture. The ultimate objective is to develop varieties which are resistant to downy mildew, which will yield as well or better than varieties now being grown and which will have chemical qualities acceptable to the brewing industry.

"The breeding blocks in the experimental planting include seedlings which resulted from nearly 2000 controlled cross pollinations. Thousands of genetic crosses are made each year in an attempt to produce progeny which combine desirable characteristics of both male and female parents.

"Controlled pollination is effected by placing parchment bags over the female blossoms to prevent them from being fertilized by wind-borne pollen from unknown male. Pollen from known male, from which crosses are desired, is used to fertilize the flowers of selected female parents. The bags are removed from the female flowers, which are then fertilized by the pollen from the selected males and the bags replaced. They are not removed until the hops are developed to a stage when pollination from unknown males is no longer possible. The seed developed by this controlled pollination procedure is planted in the greenhouse during the winter and the resultant seedling are then planted in the experimental yard the following spring. An important line of research has been the development of handling the seed to insure germination when planted in the greenhouse so that the seedling would grow to the proper stage for planting out in the field at the right time in the spring.

"There has been considerable interest on the part of Oregon growers in two English varieties. These varieties are Brewer's Gold and Bullion. Neither is immune to downy mildew but they do yield well and are high in soft resin contents. They have been used as parents in the controlled pollination work.

"Fuggles, an early variety grown extensively in Oregon is the most resistant to downy mildew of the varieties now being grown in Oregon. It is being used also as a parent in the controlled pollination studies.

"Work is continuing with fungicidal dust and sprays to control downy mildew. This is an important and necessary project until such time as the breeding program results in the development of varieties which are resistant or immune to downy mildew and which give high yields of hops, which possess chemical qualities acceptable to the brewing industry."

CROP PROSPECTS

THE OREGON JOURNAL, issue of July 15, 1951 carried the following account, "Hop Output Up Slightly. Hop production in Oregon, Washington, Idaho, and California this year is estimated at 59.9 million pounds, 3 per cent more than produced last year.

"The department of agriculture says the crop forecast is 27 per cent more than the 1940-1949 average. Acreage in production this year is estimated at 41,200 acres, compared with 38,800 acres last year.

"Oregon's hops are forecast at 16.9 million pounds, only slightly more than last year's production and about equal to the average. The state has 19,000 acres in production this year, compared with 14,600 last year."
PAY PONDERED

The PORTLAND OREGONIAN, issue of July 30, 1951 carried the following account, "Hop Harvest Pay To Be Discussed. Meeting of Willamette valley hop growers, to discuss hop harvest wages for the current year, has been called by State Labor Commissioner W. E. Kimsey for Tuesday in his offices here.

"Hop harvest problems were discussed at a district meeting at Independence Monday night but no definite action resulted. Eugene MacCarthy, chairman of the Oregon-Idaho hop growers advisory committee, was expected to attend Tuesday's meeting."

WILLAMETTE WAGES

THE CORVALLIS GAZETTE-TIMES, issue of August 1, 1951 reported, "Hop Pickers To Get 45 Cents Per Pound. Willamette valley hop growers this season will pay 45 cents a pound for picking and 85 cents an hour for common labor."

"The scale was set at a growers' meeting held in the office of W. E. Kimsey, state labor commissioner, in Salem.

"Machine picking prices will be decided upon at a meeting at Independence Thursday night.

"Paul Rowell, who assisted Kimsey at the meeting, reported that a survey of the hop crop on the Pacific coast shows about 95 per cent of the available 1951 crop is contracted, for an average price for seeded and seedless of 66 cents a pound.

"Growers said picking of early fuggles is expected to start in mid-August."

APPEALS FOR PICKERS

THE PORTLAND OREGONIAN, issue of August 11, 1951 carried an item quoted herewith in part, "Picker Needs Nearing Peak. With late fruits ripening rapidly, hop picking starting and the bean harvest at the half-way point, Oregon's late summer demand for farm labor is gradually approaching a peak, the state employment service announced here Friday."

"Salem has requested 2000 more pickers, half for beans and half for early hops. Gathering of fuggles started last week, but late hops are not expected much before September 1."

COMMERCIAL CONCERNS

The SALEM STATESMAN, issue of January 11, 1951 reported, "Hop Dryers Listed. Articles of incorporation for Serres Hop Dryers, Inc., of Woodburn, were filed with the Marion county clerk Wednesday by Joseph, Adela and Nick Serres. Capital stock is listed at $1,000."

From the same source, under date of January 16, 1951 the following information was obtained, "Hop Drier Incorporated. Articles of incorporation for Goschie Hop Dryers, Inc. were filed Monday with Marion county clerk by Herman, Vernice and Eddie C. Goschie of Silverton. Capital stock comprises 500 shares without par value."

HOP PICNIC HELD

The INDEPENDENCE ENTERPRISE, issue of June 29, 1951 carried an item, quoted in part herewith, "Hop Picnic Held At Hanna Ranch. The annual hop picnic was held at the Hanna hop camp last Friday at which the guests enjoyed a pot-luck dinner and ice cream."
NOTES FROM ABROAD

THE BREWERS' JOURNAL AND HOP AND MALT TRADES' REVIEW, issue of January 17, 1951 carried the following item of interest.

France: "The preliminary evaluations of the 1950 hop crop, in France as well as abroad, have been left far behind by the actual figures, and it seems that the period of shortage which has prevailed since the war has now come to an end.

"While Czechoslovakia, at the beginning of the campaign, informed the hop-importing countries that the quantities she expected to export would be further reduced, it seems, on the other hand, that the German market is now able to satisfy all demands for high-quality hops.

"In France, in spite of numerous thunderstorms in August, the hop crop was abundant in all producing regions.

"With a view to this situation, it is surprising that the hop prices should be much higher than those at the beginning of the previous campaign. Czechoslovak hops have increased by approximately 90 dollars per 50 kilos; German hops rose from 120 to 200 dollars. It is true that the extreme shortage of the previous campaign had caused considerable price increases since December, 1949. It is certainly these prices, due to exceptional circumstances, that induced the hop growers to ask prices so high at the beginning of the present campaign.

"French hop prices have followed this movement and fallen in line with foreign prices, as appears from a circular the Co-operative of Alsatian HopGrowers addressed to the brewers.

"Comparing the present hop prices with those before the war and the prices of other agricultural products, it appears that the differences are so enormous that it is most desirable that prices should be much lower next time. The increases of the last years have been so considerable that the establishment of normal prices would by no means threaten the reasonable profits of the growers; it would, on the contrary, stabilize them."

From the above source, issue of March 21, 1951:

Australia: "Hop crops in Tasmania have been badly damaged by recent storms. This may affect the Australian brewing industry considerably as almost the whole of the Australian hop crops are grown here and each year sees a necessity for imports from overseas.

From the above source, issue of April 18, 1951:

Brazil: "The greatest difficulty met by the Brazilian brewing industry is the necessity of importing the raw materials--barley (or malt) and hops.

"As for hops, experiments of home cultivation have met with no success. In 1947, nearly 76 metric tons of hops, valued at 32.6 million cruzeiros, and much the same quantities in the following years, were imported."

Germany (Federal Republic): "According to FOREIGN COMMERCE WEEKLY, the official forecast issued by the Federal Government has raised earlier estimates of the German hop crop to 188,000 centners (1 centner, or quintal, is 50 kilograms or 110.23 pounds) which is not only the largest postwar crop, but is up to prewar levels. The final figures may be 2,000 or 3,000 centners higher."
"Up to November 1st, 1950 approximately 166,000 centners had been processed and sold. Of the unsold hops, more than 15,000 centners remain with the Hallertau growers, 2,000 with the Spalt growers and only small quantities elsewhere. It is difficult to estimate the quantities still in the hands of dealers, but the figure is probably well over 12,000 centners.

"Sales were currently very slow with a more or less stabilized price of 700 Deutschmarks for Spalt and 630 to 680 DM for Hallertau hops. The domestic demand has been almost satisfied, German breweries reportedly having bought more than 80,000 centners. Anticipating lower prices, they planned to wait until spring before purchasing the few thousand additional centners needed.

"The general opinion was that prices would continue to decline. Hop-dealers were pleased at the volume of export sales, reported to be more than 60,000 centners at more than the official export price of 170 dollars per centner. This price was set over their protests. Since domestic prices have settled at a lower level than the official export price, the Dealers' Association have been considering action to have the official price reduced, claiming that the difference between the two price levels deterred further exports.

"While the foregoing figures were compiled from a consensus of informed sources, there were approximately 20,000 centners unaccounted for. This disparity was admitted, but the sources were unable to explain it adequately. Such reasons as unregistered sales to avoid taxes, illegal exports and unknown speculative holdings have been advanced, but in themselves should not account for such a large quantity as 20,000 centners. This unknown factor was an additional weakening influence on the market."

From the above source, issue of May 16, 1951:

Australia: "Persistent shortage of hops in Australia has led to experiments in the growing of Tasmanian varieties in New South Wales, and the latest report from the Agricultural Department in that State is to the effect that Tasmanian cuttings planted out are faring well enough to indicate that some varieties, at least, are suited to N. S. W. conditions.

"A syndicate of business men at Maitland, New South Wales is exploring the possibility of growing hops in the Hunter River valley."

Czechoslovakia: "While formerly work in Czech hop gardens was mostly carried out by hand and by means of very primitive tools, mechanization has been spreading recently. Special ploughs and small tractors to operate different instruments enable the hop-growers to mechanize most of the ground work. During the last hop harvest, some types of hop-picking machines, likely to do the work of 100 to 600 pickers, were tested; the results, so far, have not been made public. One recently built machine, now under examination, digs holes for new plantations, and other devices assure the mechanization of nearly all work in the hop gardens. Most of these machines are built in Czechoslovakia.

France: "Hops.—16,000 m.q., valued at £1,390,000 were imported in 1950; 6,700 m.q. came from Germany, 4,100 from Belgium-Luxemborg, 2,500 from U.S.A., 2,500 from Jugoslavia, 2,000 from Czechoslovakia. Germany, therefore is again France's main foreign supplier, followed by Belgium, U.S.A. and Jugoslavia, whereas Czechoslovakia ranks only fifth. Exports amounted to 1,129 m.q., valued at £108,000, of which 850 m.q. went to French overseas territories."
DROMEDARY'S DOWNFALL

The ogre of overproduction looms large on the horizon for all Pacific coast hop producers.

Opportunists are oftentimes overly optimistic! Such seems to have been the case with those who persisted in planting out new acreage without paying proper attention to the production-consumption complex.

Any attempt to change existing legislation to make even partial acreage control possible will be time-consuming and costly. Eventual success for such a venture is by no means assured.

Acreage limitation, to be fair and effective, should be a four-state function, more readily advocated than accomplished!

Voluntary reduction of acreage by individual growers would be a simple solution. It is a possible but highly improbable procedure, human nature, even among hop growers, being as it is!

I can clearly recall the resounding resolves of a host of hop growers who agreed to restrict the sale of roots to potential rivals. They also promised not to increase their own acreages. Immediately following such public protests, at one of the best and last annual meetings of the old Oregon Hop Growers Association in Salem, it was amazing how many roots were actually sold to "outsiders" and how many "south forties" were planted up to round out odd corners on the orators' own homesteads!

Anyhow the economically enlightened might find it only fair to agree with those aggressive growers who maintain, with pardonable persistence, that the proper procedure is to perpetuate those plantings where greatest yield is possible on fewest acres. If this attitude is accepted as proper by parties who might be empowered to limit acreage, it certainly would make "monkeys" out of marginal producers!

I am, of necessity, inclined to the opinion that profit or loss eventually will prove the sharpest shears for pruning production.

Something must be done, and soon, or overproduction may well prove to be the straw that will break the camel's back, the dromedary's downfall!

AN ORACLE FOR OCTOBER

"Facts do not cease to exist because they are ignored."
NOSTALGIC NOTE

The MONMOUTH HERALD, issue of January 11, 1951, carried a column, "Tossed To The Lions," under which a topic entitled "Time Marches On" made mention of the good old days when hops were hand-picked as an important community enterprise. Hop picking machines, under construction nearby, were cause for interesting comparisons between the rural way of life of yesteryear and present practices.

From the same source we culled the following pertinent particulars, "Hoovers Building Large Hop-Picker. The framework of a large building, 40 by 100 feet in area, which is going up north of Independence is to house a hop picking machine. The machine, a Danenhauer, is to be delivered in April. Operators are S. J. and Melford Hoover. The Hoovers will use the machine for their own hops and those of other yards in the vicinity.

"The building will have a cement floor and aluminum sides and roof. Only half of the capacity of the building will be occupied by the one machine. Remaining is room for another machine when use for it is needed. The building is connected with the Hoovers' hop drier located farther from the highway.

"Capacity of the machine is from 30,000 to 35,000 pounds in an eight-hour shift. It is planned to operate it in two shifts during the picking season. This will make the ninth machine in the Independence area. Hop Harvesters, Inc. have three and the McCarthy, Hadley & Prather, E. Clemens Horst Co., A. J. Haener, and Golden Gate hop yards have one each.

"The whole hop vine is conveyed to the drier and run through the machine. The machines waste considerably more hops than hand picking does, but still leaves the financial advantage with the owner-operator.

"The Hoover machine and its housing will represent an investment of more than $100,000."

MORE MACHINES

The INDEPENDENCE ENTERPRISE, issue of January 12, 1951, reported, "Two More Hop Pickers To Be Installed In Independence Area. Contracts were signed for two more hop picking machines to be installed in the Independence district this week. Both contracts were for the Fontaine picker manufactured at Yakima, Washington.

"One contract was signed by L. H. Dalkenberg, who purchased the Madison ranch from R. M. Walker a year ago. The ranch is located two miles east of Independence in Marion county and has some 230 acres with 120 acres in hops. Dalkenberg states that he will start soon to erect a 30 by 120 foot building adjacent to his hop drier to house the picking machine which will be installed this spring and ready for hop harvest this summer.

"The other contract was signed by R. M. Walker for a similar machine which will be installed on his Oregon Hop Yard farm just across the river from Independence. Walker states that he will start the erection of a building near his hop drier some time in April to house the picking machine. His building will be 30 and 36 feet wide by 130 feet in length. Walker owns the S. B. Walker ranch which lies east of the Oregon Hop farm and also the Cooper hop ranch which lies to the south, which he recently purchased from the Cooper estate. He will have a total of 229 acres of hops on the three farms.

"Both Dalkenberg and Walker stated that the picking machines were being installed owing to the uncertainty of labor conditions for hop harvest. They will harvest their crops and if time permits may assist other growers to harvest their crops."

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NOTES ON THE MARKET FOR HOPS

In THE BREWERS' JOURNAL AND HOP AND MALT TRADES' REVIEW, issue of May 16, 1951, there appeared an interesting article, under the above title, covering "United States Of America" as compiled by the Commercial Department, British Embassy, Washington.

PICKING POOL

Another good example of constructive cooperation is illustrated by the Moxee Stationery Hop Pool.

During 1950 the group consisted of 6 growers with a total of 86.80 acres and a total production of 1,091 pounds of hops.

NEW ORGAN


IT'S THE WATER

Oregon Station Bulletin 500 "Irrigation Requirements (Estimates for Oregon)" by Fred M. Tileston and John W. Wolfe was issued in July, 1951. It contains valuable information on consumptive use and net irrigation requirements for hops.

LEAVES AND STEMS LOWERED

The WOODBURN INDEPENDENT, issue of July 12, 1951, carried the following item of interest, "New Hop Quality Standards Slated For '51 Coast Crop. New minimum standards of quality for hops grown in Oregon, California, Washington, and Idaho under the marketing agreement were announced Sunday by the United States Department of Agriculture. The standards become effective August 1 of this year.

"Merchantable hops for the 1951 season and following crops may have not more than 10 percent maximum leaf and stem content. The former limit was 15 percent.

"Hops with more than 10 percent leaf and stem content amounted to only one-tenth of one percent of the 1950 crop and two-tenths of one percent of the 1949 crop, according to department officials.

"The change was made upon recommendation of the hop control board. It said brewers have found that hops with more than 10 percent leaf and stem content give a bitter taste to fermented malt beverages and often interfered with mechanical operations in brewing."

FAIR FEATURE

The INDEPENDENCE ENTERPRISE, issue of September 7, 1951, carried a detailed discussion, quoted in part herewith, "Polk Area Scores At Big Fair. Polk county is well represented at the state fair here this week and exhibits and contestants from that county are claiming their full share of attention.

"The Polk county booth in the big agricultural pavillion features a horn of plenty pouring out the products of the farm, field and orchard. Hops, prunes and cherries have a prominent place in the exhibit which was arranged by Mr. and Mrs. Frank Alsip of Dallas."
MECHANIZATION MATTERS

The INDEPENDENCE ENTERPRISE, issue of July 31, 1951, carried an interesting account of some length under the heading, "Modernization Of Hop Industry Continues, Three New Hop Picking Machines, Two Modern Dryers Set For Harvest," from which we obtained the brief abstract which follows. "Three new picking machines and two forced air type dryers will be ready when the hop harvest begins in the Independence area this summer.

"On the east side of the river new picking machines of the Fontaine type are being installed by R. M. Walker and L. H. Dalkenberg, and S. J. Hoover and Son are installing a new picker on the Independence-Salem highway.

"The new oil burning driers are under construction at the R. M. Walker and D. P. MacCarthy and Son ranches."

HOW HIGH

The FOREST GROVE NEWS-TIMES, issue of August 2, 1951, ran an interesting illustrated item about a high-climbing hop vine. "Like Jack's beanstalk, this hop vine has a yen for the stratosphere. The vine has shot up 35 feet on a wire at the west side of the feed plant of E. F. Burlingham & Sons on 19th Avenue near Ash Street. Frank Strahl, employee, inspects the vine which has become a pet with workers of the mill."

BAD BREAKS

The GRANTS PASS COURIER, issue of August 4, 1951, had a sad tale to tell, "$85,000 Crop Of Hop Flattened Trellis Collapses. The $85,000 hop crop of Sunny Brook hop yards on Upper River road, less than three weeks away from harvest, lies flat upon the ground.

"Roy Lathrop who, with his sons, Bruce and Charles, operates the yards, said this morning that, barring rain before the harvest date, much of the crop can be salvaged. Unfavorable weather could mean practically a complete loss, Lathrop added. An exceptionally heavy crop, due to favorable growing weather, developed a load which the trellis system failed to hold. Cost of raising the vines is prohibitive, it was explained."

From the above source, issue of August 7, 1951, more hard luck was announced, "Every And Sons Hop Trellises Collapse Monday. Approximately 15 acres of hops in the Dick Every and Sons yards, about four miles west of Grants Pass and between the Upper and Lower River roads, fell with their own weight when trellises collapsed about 5 a.m. Monday.

"Jim Every said the fallen acreage was about half of his current year's production, and that various growers had estimated the crop would go as high as 15 bales to the acre.

"Practically all of one field and part of another, all tied together in one system of trellis-work, went down, Every explained. He blamed unusually heavy growth for collapse of the trellises.

"Every expressed doubt that there would be much salvage of the crop from the fallen hop vines, because the hops were not far enough advanced. He added that with the hops on the ground, it would be difficult to fight Aphids, other lice and red spiders."
PICKING STARTS

The WALLA WALLA UNION-BULLETIN, issue of August 7, 1951, announced, "Hop Harvest Opens. Hop harvesting started in the mid-Willamette valley this week, two weeks earlier than usual. First picking started in the Woodburn area."

HAND TO MACHINE

The CAPITAL JOURNAL, issue of August 10, 1951, reported, "Josephine Hop Crop Picking By Machine. The Josephine county hop crop will be harvested exclusively with stationery or portable picking machines for the first time this year, a survey by the state employment commission reveals."

LABOR SHORTAGE

THE OREGONIAN, issue of August 20, 1951, announced, "Hop Harvesters Short In Valley. Shortage of nearly 300 hop harvesters was reported Sunday by William Bailie, head of the state employment office here. He said most pickers were required in the Independence area.

"Picking of early hops is approximately 20 percent completed, Bailie said, with the late hop harvest to start around September 1. At the peak of the hop harvest 10,000 pickers will be required in this area."

HERMISTON HOPS

The HERMISTON HERALD, issue of August 23, 1951, carried an interesting illustrated article, quoted in part herewith, "Modern Plant, Good Yields At Hermiston Farms. Thriving Business Developed From Seven Acre Start. Starting with seven acres of hops on poles in 1931, the Hermiston Farms, Inc. has made notable expansions and now has one of the state's most modern hop processing installations.

"The new drier and picker were added last year after a fire destroyed the old equipment. The new drier is capable of handling about 90 bales a day—present plans call for expanding acreage from 180 to 250 acres.

"The history of hops in this area brings forth some familiar names. For instance, Kaser's yards were started in 1931 by L. W. Dixon, now the Mayor of Stanfield. Dixon had seven acres of hops on poles the first year.

"By 1942 he had expanded to 22 acres when he sold out to William Hart. Hart had 100 acres growing when he sold out."

GOOD IDEA

THE OREGONIAN, issue of August 26, 1951, announced, "Spraying Parley Billed At Yakima. The third annual aerial dusting and spraying conference will be held in Yakima, November 1-2, according to Dr. H. S. Telford, Professor of Entomology at Washington State College, and program chairman.

"Purpose of the conference is to acquaint persons using agricultural chemicals with new developments in the field.

"Dr. Lowell Rasmussen, Weed Specialist at WSC, is in charge of the program on herbicides, while Telford is lining up speakers on insecticides."

Hope the operators who work on hops attend these meetings, too!
THE SEASON'S HOPS

JOURNAL OF THE INSTITUTE OF BREWING for November-December, 1950, reported on a paper presented by H. L. A. May entitled "The Season's Hops" quoted here-with, "Brewers' contracts for 1950 would be met to the extent of 100 percent. The crop assigned to the Marketing Board was well over 300,000 cwt., and was the largest in England for 25 years. The total estimated demand for 1950 was 315,000 cwt., of which 268,000 cwt. was from British and Eire brewers and the balance from overseas customers. The first call on any 1950 English hops would be that of last year's purchaser who was, in the main, a British or Eire or (on a small scale) an overseas brewer. Only after his refusal would hops be offered to new contractors overseas.

"The main difference between this crop and last season's was that the earlier 1950 pickings were not so ripe. Most growths had a tail and, as a result of the gales, it might be more difficult to find some dry hoppers. There is some blight in the samples this year. East Kent has produced some good Goldings, and there are some excellent Mathons in the Midlands. With plenty of hops of good brewing value available, brewers should not hesitate to take up their full quantity and put by for a year when the yield may not be quite so plentiful."

VARIETY TRIALS

The JOURNAL OF THE INSTITUTE OF BREWING for January-February, 1951, carried the following items of interest:

1. "Thirty-third Report On The Trial Of New Varieties Of Hops, 1949" by E. S. Salmon. "Yields of many of the new varieties were reduced as a consequence of drought, but preservative values were in general higher than in 1948; it has again been noted that commercial growths may often yield higher P.V. than growths of the same varieties grown at East Malling. Cropping details are given of new varieties grown commercially (principally Brewer's Gold, Bullion and Early Promise), and the distribution is noted of sets of Verticillium-resistant varieties (Keyworth's Midseason and Keyworth's Early) for planting in infected gardens where the growth of Fuggles, etc., has become impossible. Brewing trials with the Verticillium-resistant variety OT53 have been successful."

HOP CHEMISTRY

2. "Hop Acids During Maturation" by J. de Wever and A. van Mollem (FERMENTATIO, 1950, 123-128). "Several varieties of hops, grown in the trial gardens of the Belgian National Hop Institute, were analysed over the period 17th Aug. - 26th Sept. by Govaert's method. The moisture content of green hops was independent of the variety and varied normally between 80-83%, falling at maturity to 78-79%. The b-hop acid (lupulone) was first formed; development was initially slow, but became rapid after about 30% of the total was formed, so that all the b-acid was produced in a further 3-4 days. The formation of a-acid (humulone) commenced when about one-third of the b-acid had been produced; development was less abrupt than that of the b-acid and when formation of the latter was complete, the humulone had attained only about 50% of its level at maturity. On storage, humulone retrograded more rapidly than lupulone, thus emphasizing that hops should be taken for drying without delay. The instability of humulone was also demonstrated by analyses of commercially dried hops which contained 35% less a-acid than the corresponding fresh hops, whilst showing little loss of b-acid. Hops from the top were richer in a-acid than those from the bottom of the plant. If the brewing value of hops depends on the humulone content, the variety Northern Brewer demands attention, having an average a-acid content of 11.7%."

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3. "Use And Function Of Hops In Brewing" by F. Rabak (BREWERS' DIGEST, Sept. 1950, 69-71). "After a brief account of the history of the use of hops in beer, the author refers to their function in the brewing process. Hops are used to contribute a pleasant bitter flavour and aroma to the beer and also, by virtue of their tannin content, to coagulate the undesirable nitrogenous materials contained in the wort. The boiling process has remained unaltered throughout the centuries until recent years, when the use of higher hop rates with a shorter boiling period has led to improved quality in malt beverages. Until comparatively recently, little attention was given to the quality of hops and its effect on the finished beverage, but since the older methods of evaluation were replaced by more scientific procedures, progress has been made in their utilization by modifications of the brewing process. The resins in hops contribute the bitter flavour to beer, whilst the essential oil is responsible for the aroma. The a-resin is more soluble than the other and provides a mellow, bitter flavour as well as acting as a preservative by virtue of its . bactericidal properties, whilst the b-resin has a harsh bitterness and dissolves but slowly in the wort. Although for a long time brewers have endeavoured to retain the hop oil aroma in their beers, little success has been attained, for much of the oil is dissipated during wort boiling. For this reason, the time of boiling should be as short as possible and this will also prevent the dissolution of much of the b-resin and of the undesirable constituents of the stems and leaves with their lingering, harsh, bitter flavours. If hops are coarsely ground, percolation with boiling water dissolves the required constituents more rapidly and completely without serious loss of the volatile oil. By adopting the method recommended of using a higher hop rate in the copper, together with a shorter period of boiling, the practice of dry hopping is rendered unnecessary in the production of beers which are to have the finest aroma and flavour."

4. "Chemistry Of Hop Constituents. I. Humulinone, A New Constituent Of Hops" by A. H. Cook and G. Harris (J. CHEM. SOC., 1950, 1873-1876). "During the working up of methyl alcoholic extracts of Worcester Fuggle and Kent Golding hops, a new compound was obtained. This compound, termed humulinone, was isolated as the crystalline sodium salt, C21H30O6Na, by treatment of the petroleum-soluble material with sodium hydrogen carbonate, and was present to the extent of 1.0-2.0% by weight of the cones. Humulone, lupulone and isohumulone were shown to be stable under these conditions, from which it is inferred that humulinone was present in the hop cones as such. Humulinone was isolated more economically by precipitating it as lead salt, together with the humulone, from 90-95% methyl alcohol, regenerating with sulphuric acid, and treating with sodium hydrogen carbonate. Acidification of the sodium salt gave free humulinone, C21H30O6, a white crystalline substance which did not crystallize from solvents. This and its sodium salt appeared from their ultraviolet absorption spectra to have tautomeric structures. The absorption curves of humulinone and isohumulinone were almost superposable, and both compounds gave a purple colour with alkaline sodium nitroprusside. Humulinone, like humulone and isohumulone, behaved as a monobasic acid, and suffered no change on titration with alkali. It was a stronger acid than the other two, and at 2.1 x 10^-3 mm. pressure it distilled with decomposition at 125°C. (257°F.). On hydrolysis with hop aqueous sodium hydroxide, humulinone yielded acetone and isohex-3-enoic acid, together with a mixture of unidentified acidic products. This acid proved to be the one yielded by alkaline hydrolysis of humulone also and not the 2-enoic acid as generally supposed. Humulinone was compared with lupulone, humulone and isohumulone as inhibitors of bacterial activity, and against two strains of beer Lactobacillus was of high potency."

INTERESTING ABSTRACT

WALLERSTEIN LABORATORIES COMMUNICATIONS for March, 1951, referred to the following:
"Composting Spent Hops." Charles F. Niles, Jr., PROC. 4th IND. WASTE CONF., PURDUE UNIVERSITY, ENG. BULL., EXTENSION SERVICE, NO. 68:80-93 (1968). "A study was made of the possibility of composting spent hops. It was found unnecessary to add manure or nitrogen, but air was required for satisfactory decomposition. Most of the decomposition occurred within 30 days, and no odor nuisance was produced. Further experiments are planned to determine the value of composted spent hops as fertilizer."

ITEMS OF INTEREST

JOURNAL OF THE INSTITUTE OF BREWING for March-April, 1951, printed the following papers, summaries of which are presented herewith.

1. "The 1950 Hop Crop" by D. G. Le May. "The generally propitious weather conditions during the 1950 season led to the production of a crop 45% greater than that of the previous season. The large yield of Fuggles included many choice samples and the quality of the Goldings was surprisingly good. Laying down to grass between the rows and the use of a systemic insecticide were novel features. The potential importance of Verticillium-resistant varieties is emphasized, and mention is made of increasing difficulties due to the shortage of labour for picking."

2. "Insect Control And The New Systemic Insecticide For Hops" by W. E. Ripper. "Following a description of the characters of the principal insect pests of hops, an account is given of the development of organo-phosphorus insecticidal preparations. One of these, now in use, is absorbed into the plant sap and proves lethal to sap-sucking insects without killing predatory insects such as ladybirds which merely suffer contact with the spray. The protective effect is long-lasting, and whilst treatment within 6 weeks of hop picking is not recommended, there is no evidence that the sprayed plants are toxic to higher animals a short time after treatment."

HOP RATE

SMALL BREWERS ASSOCIATION, Bulletin No. 898, issued March 12, 1951, carried an interesting item by Peter J. F. Weber under the heading "Mild Tasting Beer" which we quote herewith in full. "Many Brewers in striving for mildness in their Beer reduce the hop rate, hop boiling time, or both, which often does not accomplish the intended purpose.

"The resinous material in hops which gives the best hop flavor is broken down by prolonged boiling. A lack of smoothness, however, a lasting bitterness or an astringency may be due to too short a heat treatment of the tannin-like substances which accompany the resins, and which are also extracted from the hops.

"The beverage tea and Beer are in a way related. In brewing Beer we extract the petals of the hop flower or fruit. In brewing tea, delicate tea leaves are extracted, and there is an old saying that you must bring the tea to the pot, not the pot to the tea. The temperature of the water and the time of steeping or extracting are very important factors in brewing good tasting tea.

"Likewise the boiling time of the hops must be long enough (1) to get good extraction of the fine flavored hop resins, and (2) to combine the tannins with proteins so as to remove them from the wort, and thus avoid undesirable bitterness in the Beer."
LADIES CHOICE

A peculiarly feminine prerogative is said to be a change of mind! Hop growers on the Pacific Coast appear to have challenged the exclusiveness of such mental meanderings.

Exactly eight months ago hearings were held on amendments proposed to the Secretary of Agriculture to modify provisions of the hop marketing agreement. It is now proposed to cancel pending proceedings!

New proposals will be submitted. The two of perhaps most vital import are: (1) To limit use of diversion certificates to harvested hops only, and (2) to fix saleable and surplus allotments on an individual farm basis.

The Department of Agriculture rejected the proposal made last spring to restrict the diversion privilege by requiring harvesting of 50 percent of a grower's production because the hearings held in Portland March 15-17, 1950, indicated the industry was not unified on the proposal. The industry is no more unified now!

Meetings held in Portland November 15-17, 1951, have just been concluded. They comprised sessions of the Hop Control Board's Committee on Amendments, a meeting of the Growers Allocation Committee and a meeting of the Directors of the U. S. Hop Growers Association.

The "pulling and hauling" was appalling! Good grief! If a total of 877 growers in four closely affiliated states fail to function in fraternal fashion in regard to a common crop what's cooperation coming to!

The U. S. Hop Growers Association is the hop industry's only organization. A mere 458 growers maintain precarious membership, and only 218 are currently caught up on their assessments. The fact that over 70 percent of our hop growers elect to let their 20 cents per-saleable-allotment bale lapse is deplorable indeed.

An overlapping of activities and personnel of the U. S. Hop Growers Association and the Hop Control Board appears to be the "fly in the ointment" to which many growers and some dealers, wisely or otherwise, object. A divorce might be desirable if it could be accomplished without undue distress.

A NOTATION FOR NOVEMBER

"He that will not apply new remedies must expect new evils."
1. WOODBURN INDEPENDENT, issue of September 6, 1951, announced, "Harvest of Hops and Prunes Opens During Past Week. The harvest of prunes and late hops was in full swing in the north Marion county area this week.

"The late hop harvest began the end of last week and more growers are starting to pick each day. Adequate help appears to be available, although there are some calls for hop machine workers."

2. ALBANY DEMOCRAT HERALD, issue of September 11, 1951, stated, "Students Asked to Pick Hops. The State Employment Service appealed for 100 students to report Saturday for work in the hop fields in a special announcement over the high school's loudspeaker system this morning.

"Don Madsen, farm labor specialist for the service, said that at least that many hop pickers will be needed Saturday, and more could be used next week. Growers are paying 1 1/2 cents a pound for hop picking."

3. INDEPENDENCE ENTERPRISE, issue of September 11*, 1951, ran a good photo over the following account, "Three Hop Picking Machines Doing the Work of 100 Pickers. Pictured above are three hop picking machines of the Williams and Hart Farms located at the C. A. McLaughlin ranch north of Independence. These machines are being operated on the night shift only at the present but a day shift is expected to be added soon. Some 75 people are employed at the machines with nine trucks hauling from the fields where 1/2 are employed to cut and load the hops on the trucks. The entire crew of a few over 100 takes the place of from 800 to 1000 hand pickers in the fields."

4. CORVALLIS GAZETTE-TIMES, issue of September 15, 1951, reported, "More Hop Pickers Needed at Independence. The Salem-Independence area needs more hop pickers to clean up the 1951 crop next week, the State Employment Service said today."

5. ALBANY DEMOCRAT HERALD, issue of September 19, 1951, stated, "Last Hop Crew Winds Up Work. The last hop picking crew in the Albany area wound up work yesterday when the late crop withered in the sun, the State Employment office reported today.

"The crew working in the Si Linn yards in north Benton county was disbanded last night. The grower's loss was not believed to be heavy."

6. OREGON JOURNAL, issue of September 21, 1951, announced, "Independence Area Hops 'In'. Picking of hops is near the end in this area. Only yard still picking Thursday was the big Horst ranch, which expected to complete its harvest by the end of the week.

"Growers report big yields throughout the area but falling trellises and a cut in the marketable quantity ordered by the Hop Control Board has cut sharply into profits, one grower said. Most growers in this district have their crop contracted for but the hop market is described as 'absolutely stagnant'."

7. The Walla Walla UNION BULLETIN, issue of September 23, 1951, carried a lengthy, illustrated article, quoted in part herewith, "Hermiston Farms Company Harvests 110 Tons of Hops. With a modern, $100,000 processing plant in operation and 'excellent yields' being reported, the Hermiston Farms Corporation reported a successful season as the hop harvest neared completion here last week."
"Pete Scymanski, manager, stated the good climate and favorable soil again cooperated to give the Hermiston area an above average crop for 1951. While the average yield for Oregon is 1,100 pounds per acre, the fields around Hermiston are yielding 2,000 pounds of hops per acre."

8. INDEPENDENCE ENTERPRISE, issue of October 5, 1951, reported, "Hop Men Busy Cleaning Yards After Harvest. Hop men in this section of the valley are busily engaged in cleaning up their yards ahead of anticipated rise in the Willamette River that annually floods the lowlands.

"Much damage was said to have been done in some yards when trellises fell under their heavy load of vines, carrying many poles with them.

"Some difficulty is said to be experienced in finding an adequate supply of both poles and wire. Loggers who ordinarily supply poles are now busy supplying mills with saw logs, following the unusual dry summer which resulted in suspension of logging activities in most western Oregon areas. Hop wire is also said to be in short supply. A shortage of help for the clean up operations is also reported now that the harvest crews have left the area."

FLAMES FEATURED

1. The GRANDVIEW HERALD, issue of September 13, 1951, announced, "New Mabton Kiln Destroyed by Fire. Flames completely destroyed a new hop kiln and some 200 bales of hops near Mabton early Tuesday morning and investigation is continuing to determine the cause of the blaze, according to Gerald Young, state fire marshall.

"Bob Gemlin reported to members of the Mabton fire department that the building seemingly burst into flames as he sat in his car watching the gauges and controls of the oil-fired furnace.

"Both city and rural fire departments of Mabton responded to the call and were able to save much of the machinery which was housed in a concrete block sub-story on the place.

"Ranch owners D. A. Beaulaurier and Melvin Newhouse were reported as estimating the loss at about $7000."

2. The GRANTS PASS BULLETIN, issue of September 20, 1951, reported, "Fire Threatens Hops. Fire starting in a pile of logs on the Ben Hilton ranch 7 miles north on the Lower River road Wednesday night threatened for a time to spread to a nearby warehouse loaded with hops and hay. Neighbors aided by the forest patrol succeeded in dousing the flames before damage was done."

3. The GRANTS PASS COURIER, issue of September 26, 1951, carried a detailed illustrated account under the heading, "Midnight Fire Destroys Sunny Brook Hop Kilns," quoted in part herewith. "The hop storage barn containing 265,000 pounds of baled hops and the two dry kilns at the Sunny Brook hop yards on the Upper River road were destroyed by fire last night.

"The loss was placed in excess of $250,000 by Bruce Lathrop, who with his father, Roy Lathrop, and brother, Charles, owns the yards.

"Also destroyed in the fire was a large amount of equipment, including a carryall truck with welding apparatus, two manure spreaders, four hop trailers, two hop-baling machines, one of which was purchased this year, a number of hop carts, some cable and miscellaneous field equipment."
EXPERIMENTAL DRYER

THE CO-HOP-ORATOR, issue of September 1951 furnished a fine photograph over the following statement, "Experts Here to Help Improve Hop Equipment. Standing in front of the new experimental hop dryer are: left to right, standing, Mr. Wood, Mr. Beal, Mr. Nauman, Bob Wright; squatting are Joe Kynoshita and Mark Adams. All but Bob Wright are from the Industrial Research Division of Washington State College.

"Bob Wright, chemical engineer, is technical advisor with P. Ballantine & Sons, of Newark, N. J., who was here in Yakima before flying to California to further pursue the work of his company.

"Wright is also representing Frank E. Connery, Chairman of the U.S.B.F. sub-committee on Hop Research. The U.S.B.F. program includes the development of a continuous hop dryer, evaluation of hop picking machines, and other projects of importance to the hop industry."

The SPOKESMAN REVIEW, issue of October 24, 1951, carried the most complete account, quoted in part herewith, "WSC Develops New Hop Dryer, Picker-to-Baler Machine Built on Yakima Ranch. The machine loads continuously between two parallel belts effectively drying a foot-deep bed of hops. Belts run the full length of the 30-foot-long dryer and return to the same end where they are discharged, thus using the length of the dryer twice.

"At the entrance point the belts are situated 12 inches apart and at the discharge point, 9 inches apart. In this way the machine adjusts to the change in volume of the hops caused by drying, and keeps them at a uniform density of pack. Both layers receive heat simultaneously from two oil burners.

"Conventional hop dryers are stationary and hand loaded. Constructed of cement blocks and wood, the old type dryer has a perforated floor upon which the bed of hops 30 to 40 inches in depth is placed. The bed will not dry uniformly in such equipment.

"The lower portion of the layer is over-dried and the upper layer is apt to be moist.

"With the old-type dryer which takes considerably more space, 42 bales of hops are dried in 24 hours at a temperature of about 150 degrees. The new dryer will process 48 bales of hops in 24 hours at 170 degrees.

"In case of fire, causable only by misuse of the mechanism, the new all-steel dryer is damaged only slightly. The old wood and cement type dryer, however, would have to be completely reconstructed.

"In addition, the cost of the new all-steel dryer is much less than that of the type commonly in use.

"The new model was developed by engineers Raymond Nauman and William Beale with the assistance of mechanical engineer Dr. H. R. Sorenson, acting chairman of the Department of Mechanical Engineering at WSC. M. A. Lesh, manager of the Washington State Hop Growers' Association, cooperated in setting up the drying unit and furnishing necessary hops for experimental runs during the last season.

"It is anticipated that complete details will be finished after one more season of experimentation. The project began with the gathering of data in 1949.

"The older-type dryers have been in use from as early as 1883."
TOO YOUNG

The CORVALLIS GAZETTE-TIMES, issue of September 1, 1951, reported, "Youngsters Ruled Off Hop Picking Machine. You've got to be 18 years old before you can work on a hop picking machine.

"State Labor Commissioner William Kimsey said today he had visited several Willamette Valley hop yards to warn operators against employment of boys under that age on such machines."

PICKING PROBLEMS

The ALBANY DEMOCRAT HERALD, issue of September 6, 1951, reported, "Hop Growers Face Harvest Problem. Because pickers are beginning to leave the fields, hop growers of this area face possibility of losing some of their crop, it was learned today at the local office of the Oregon State Employment Service.

"According to Don Madsen, in charge of farm labor employment, picking is under way at five yards in this area and from 100 to 150 more pickers or a total of 800 are needed to harvest the crop. Growers are paying 4 1/2 cents a pound, he added.

"Madsen asked that anyone interested, procure definite information by calling the employment office. Transportation is being furnished pickers, he said, and will be arranged through his office."

PICKING PROGRESS

The INDEPENDENCE ENTERPRISE, issue of September 7, 1951, reported, "Best Hops Yet to be Harvested in Late Crop. The harvesting of the late varieties of hops should be well underway this week. Owing to late irrigation and fertilization the hops are ripening later this year than usual and are just now beginning to be ready for harvest.

"Many of the yards picking by machines have been shut down waiting until the hops are more mature for harvesting and the yards picking with hand pickers have been making slow progress.

"The yield is one of the heaviest in a number of years and while many of the hops are being picked by machines many more hand pickers are needed.

"The Mitoma hop farm completed the harvest of their Fuggles Wednesday and started on the late variety. The Dean Walker farms are picking by hand as well as the E. Clemens Horst Company. The harvest should run from two to three more weeks if the weather permits. All yards can use more pickers and with the best picking ahead pickers should make considerably better wages than they have to date."

ARTICLES OF INTEREST

FARM RESEARCH, issue of July 1951 reported:


TRELLIS FAILS

From the WAPATO INDEPENDENT, issue of August 30, 1951, the following account was obtained, "60 Acre Hop Field Down Due to Heavy Rains. Sixty acres of Grey Poplars hops were on the ground this morning, as poles and wires collapsed under excess weight brought about by recent rains.

"The field is just south of the drying kiln of the Harrah district ranch. It collapsed this (Thursday) morning at 5:40 o'clock, according to Lee Hunt, mechanic at the yard, who reported that the yard went down during a heavy rain.

"Hunt said that some of the hops could be saved, since it was planned that picking crews were to be moved into the field not later than Monday. He also reported that the yield of that particular field was extra heavy, and that the wires just couldn't stand the added weight of the rain."

It may be necessary to redesign the pole patterns in our yards to compensate for the increased weight of vines resulting from increasing use of fertilizers and particularly sprinkler irrigation.

PICKERS SHORT

THE OREGONIAN, issue of August 31, 1951, reported, "Hop Raisers Call for 1000 Pickers. Tuesday's rain, resulting in a large number of loggers returning to their jobs, caused a more acute shortage of hop pickers, the State Employment Service reported Wednesday.

"Employment Service officials said more than 1000 additional hop pickers are needed at this time. Prune picking was expected to start early next week.

"Many loggers, released from their jobs because of fire weather, had entered the bean and hop harvests. Bean picking was completed in this area Wednesday night."

NEW COMMISSIONERS

THE STATESMAN, issue of August 31, 1951, carried the following item quoted herewith in part, "Walker, Byrne, Watzek Named to Commission. Appointment of Oregon members of the western Interstate Commission on Higher Education was announced by Gov. Douglas McKay Thursday."

"They are A. R. Watzek, Portland businessman; Sen. Dean Walker, Independence hop grower; and Dr. Charles D. Byrne, State Chancellor of Higher Education."

GOOD NEWS

THE OREGON JOURNAL, issue of September 7, 1951, "gave" with the following glad tidings, "Western Hops 'For Best Beer'. Because of the excellent hops grown in this area, the West produces some of the finest beer to be found anywhere in the United States.

"That's the opinion of a man who should know. He's Dr. Robert Schwarz, New York City, head of the U. S. Brewers Academy, now in its 76th year.

"He's in Portland to speak Saturday at the annual fall meeting and jamboree of the Northwest Brewers Association at Blitz Weinhard and Multnomah Hotel.

"The meeting is expected to attract some 60 active members of the organization and about 25 more from allied trades."
TRAGEDY AFIELD

The CORVALLIS GAZETTE-TIMES, issue of August 27, 1951, reported, "Hop Picker Drowns in Willamette River. A hop yard worker, Daniel B. Morris, 29, drowned in the Willamette River near here Saturday night.

"Police said Morris apparently suffered cramps when trying to swim across the river."

WIRE DOWN

The INDEPENDENCE ENTERPRISE, issue of August 31, 1951, carried the following account quoted in part herewith, "Heavy Crop Brings Hop Vines Down. With hop yards in this section of the valley producing their heaviest yield in many years, growers this week were faced with a two-fold problem.

"To begin with, the trellises in many yards were falling under the weight of the big crop, adding to picking difficulties. The rain of Tuesday also added to this difficulty.

"The Tuesday afternoon storm added nearly 1000 acres to the hops that went down. Yards reporting acreage down included: E. Clemens Horst Co., Dalkenberg Hop Farm, R. M. Walker, Cooper Ranch, C. A. McLaughlin Ranch, Sunset Hop Ranch, Cecil Hultman, Dean Walker Farms, Lawrence & Mattison, Wm. Krebbs, and John Roberts.

"Growers say that it will be possible to save most of the down hops. Some trellises will be raised on jacks for the hand pickers while in other yards the vines will be trucked into the picking machines."

DRYING EXPERIMENTS

The WAPATO INDEPENDENT, issue of August 30, 1951, reported, "Hop Drying Experiment by Wapato Evaporating Co.'s Roza Plant Might Mean Cheaper Hop Drying. An experiment at the Wapato Evaporating Company's Farm Division Plant on the Roza early next month might revolutionize the drying of hops.

"The experiment, in cooperation with the Heil Co., of Milwaukee, Wis., manufacturers of the rotary type dryer now in use at the Roza plant, will concern the drying of hops by the rotary method. The Wisconsin company will bring certain attachments to the farm plant of the Wapato Company for use in the experiment. The local firm uses the rotary dryer in its hay drying operations.

"Invitations have been sent to the Experiment Station at Prosser, to a large number of valley hop growers, and the Wisconsin company has issued invitations to several colleges. The Wapato Evaporating Co. also wishes to invite all interested hop men, but has as yet been unable to set a definite date on the experiment, although September 10 has been set as a tentative date. Hop men who wish to attend the experiment should call the local company office before driving to the Roza plant.

"The Heil Co. will have their own engineers on hand for the event. They will be assisted by Richard Labberton, superintendent of the Wapato evaporator's farm division.

"Should the experiment prove successful, it would mean a much faster, cheaper method of drying hops, Labberton pointed out. Another advantage which would be enjoyed by the rotary would be that of continuous operation, with no shut-downs for clearing the drying floor, as in the kiln method."
SAME SONG

In Bulletin No. 988 of the SMALL BREWERS ASSOCIATION, issued October 23, 1951, in an article entitled "Beer Flavor," E. H. Vogel, Jr., stated, "It is reasonable to assume that the ingredients are to a large degree responsible for taste difference. Distinctive tastes exist, not only for each Brewing material, but frequently different flavors characterize different varieties of the same raw material. As an example, consider the differences that exist in a cluster type hop and a Fuggle. They are both hops, but of a different variety. The same is true of barley. Malt made from Moore barley has an entirely different flavor than malt made from Atlas barley, yet they are classified as one ingredient-Malt," and again, "horticultural development of fruits and vegetables has greatly improved resistance to plant diseases and has had influence on flavor as well as on yield, shape, and appearance. Most improved varieties have less tang than that often characteristic of the wild forms. In general, tastes are now weaker than formerly, and odors much weaker. Cultivated strawberries, while better tasting than the wild, are generally far inferior in aroma. Many of the newer varieties of sweet corn lack sweetness and aroma. It appears that the trend recently in fruits and vegetables has been too much toward insipid creations with disease resistance, yield and eye appeal, and in flowers, it has been toward large and colorful blossoms with weak or missing odors. We must be aware of the fact that our domestic hops are being bred with the same qualifications. Surely it is time to raise the sights a bit by demanding hops that shall have superior flavor and aroma as well as fine appearance. The odoriferous 'personality' of our domestic hops is not that of a true hop odor. These 'conditions' will not correct themselves until consumer resistance become apparent, the 'consumer' in the case of Brewing materials being the Master Brewer. Furthermore, if the Master Brewer is not flavor conscious, the consumer of his product will make apparent this neglect in the form of less repeat business because one bottle of Beer has got to sell the next, and if it does not, any and all advertising programs are doomed to failure."

This vociferous exponent of the superiority of foreign hops over domestics is Master Brewer, Griesedieck Bros. Brewery Co., St. Louis, Missouri, and Chairman of the Technical Committee of the Small Brewers Association. Fortunately for the domestic hop producer, a majority of equally qualified members of the M.B.A.A. do not agree with him.

SUGGESTIVE STATISTICS

AGRONOMY JOURNAL for May 1951 carried an article by Kenneth R. Keller and Jerome C. R. Li entitled, "Further Information on the Relationship Between the Number of Vines Per Hill and Yield in Hops (Humulus Lupulus L.)"

The summary and conclusions are presented herewith, "An experimental yield trial of strobiles using 4-, 5-, 6-, 7-, and 8-vines per plant as plot treatments, in a randomized complete blocks design, was conducted on the variety Fuggles, grown seedless, in a hop yard near Corvallis, Oregon, 1949. Entries for the plot treatments were based on previous information presented by Keller and Li."

"The data obtained in this investigation indicated that the 4-vine plant plots produced a significantly lower yield of strobiles than the 5-, 6-, 7-, and 8-vine plant plots. The data further suggested that there were no significant differences in yield among the 5-, 6-, 7-, and 8-vine plant plots. The 6-vine plant plots produced the highest yield. It is unlikely that the true yield of the plants with more than 6 vines would be higher than the 6-vine plants. These findings should be interpreted as applicable only to those varieties of hops possessing side arm development characteristic to the variety Fuggles."

Reprints are available upon request.

Sp-28-119
PLAGUED BY PLENTY

"Misfortunes never come singly," someone said, and that's for sure!

Official figures disclose the disquieting fact that some 12,000 acres of hops were left unharvested on the Pacific Coast; over half of them in Oregon!

Unless predators appear in sufficient quantity to help hold the host of overwintering red spider mites to a minimum the damage done by this particular pest the past season will certainly be surpassed next year, weather being favorable.

Present prices are not propitious. Producers may be parsimonious in providing protection against the hordes of lice that may be migrating en masse from the prune trees on which they usually wait out the winter.

Downy mildew in particular presents a precarious problem also. This dire disease overwinters in or on the soil imbedded in infected plant debris. Under favorable climatic conditions it is capable of initiating infection in early spring which may easily assume epidemic proportions.

The purpose of these pointed paragraphs is to propose a program of strict sanitation.

Unharvested hop vines should not be allowed to stand in the fields following harvest. They should be cut down and cut off as soon as practicable. If they are badly infested with spider mites or infected with downy mildew they should be burned. If reasonably free from pests or disease they should be chopped and either spread upon the yards immediately or composted for distribution in early spring.

In yards that are subject to floods, where it is the practice to leave the vines attached until spring to assist in preventing soil erosion, the pretty problem arises of having to choose the lesser of two evils.

Don't hop farmers have fun!

A DIVINATION FOR DECEMBER

"Many a train of thought is just a string of empties."
GREAT GATHERING

The 44th Annual Convention of the Master Brewers Association of America was held in Detroit, Michigan, September 26-29, 1951, inclusive.

Some 1500 fine folks found a full program prepared for their edification and entertainment.

Bounteous buffet luncheons were served to visitors at four of Detroit's famous breweries. We picked Pfeiffer, by chance, and were fortunate! Two of the three technical sessions were attended. Of particular interest was a paper by Sir Ian Heilbron, "The British Brewing Industry Research Foundation."

The Materials Improvement Session was of special significance and that portion of the program is presented herewith:

"Variations in Analytical Results," Mortimer W. Brenner
"Atlas Barley," Dr. Fred N. Briggs
"The Function and Facilities of the Malt Laboratory," Dr. Allan Dickson
"Better Hops for the Benefit of Master Brewers," G. R. Hoerner
"Some Aspects of Recent Hop Research in Great Britain," Dr. W. G. Keyworth

CONVENTION ECHOES

THE WEST COAST BREWER for October 1951 carried some characteristic likeness of the speakers at the Materials Improvement Session of the 44th Annual Convention of the M.B.A.A. held in Detroit in late September and a reprint of the paper presented by G. R. Hoerner entitled, "Better Hops for the Benefit of Master Brewers" as well as a reprint of the stimulating address by Sir Ian Heilbron entitled "British Brewing Industry Research Foundation."

THE HOP INDUSTRY

Under the above title the United Kingdom Hop Productivity Team of the Anglo-American Council on Productivity prepared an exhaustive, well-illustrated and expertly-prepared report.

It is impossible to do it justice in brief summary here. Interested parties may be able to secure copies from Mr. George N. Malcolm, Acting Field Director, Anglo-American Council on Productivity and Economic Cooperation Administration, 2 Park Avenue, Suite 1219, New York 16, New York.

WORLD'S BEST

BREWER AND DISPENSER for October 1951 carried a pretty picture of Edward W. Huber along with the following account, "Huber, Ex-head of MBAA, Lauds Western Hops During Visit. One of the nation's foremost brewmasters, Edward W. Huber, vice president of the Miller Brewing Company, has just completed a tour of the hop ranches of California where he selected the world's finest hops for use in brewing his company's beer.

"Among the hop crops he inspected were those of the E. Clemens Horst, John I. Haas, Inc., and Steiner hop ranches. As past president of the Master Brewers Association, Mr. Huber is a recognized authority on the materials which go into making beer. He states that, without question, the hops grown in California, Oregon and Washington are as fine as or better than those raised anywhere else in the world."
SPRAY SUIT

BOISE IDAHO STATESMAN, issue of October 3, 1951, carried an item of unusual interest, "Aerial Spray of Hop Area Leads to Suit. A $23,980 damage action resulting from aerial spraying of hop fields was brought in district court here by Mr. and Mrs. Frank Galyau against John Batt and Sons, Inc.

"The plaintiffs maintain the defendants applied poisonous chemicals and insecticides in the form of spray to fields and that the dust drifted on to the adjoining property of the plaintiffs.

"They allege that the dust in several years made the landlord's portion of the hay crop unsaleable and unuseable and that other damage resulted.

"The Galyaus are owners of property leased to Mr. and Mrs. Charles L. Gray.

NEW SUIT

The FOREST GROVE NEWS-TIMES, issue of October 18, 1951, announced, "Spray Job Blamed, City Asked to Pay. Responsibility of the city of Forest Grove for damage done to the hop crop of J. W. Nelson when a flying service plane sprayed its sewer farm grass field for weeds may have to go to court for determination if a satisfactory adjustment on the claim for $2,641.12 alleged damages is not settled.

"Nelson appeared at the city council Monday through his attorney, Francis Sturgis, but the city council finally decided to stand on its attorney's statement to Nelson that the Inman Flying Service was in the status of an independent contract and there was not causal relationship between the city and Nelson.

"Sturgis stated that unless there was settlement of the claim, it would be necessary to go to court for redress. The claim is based upon damage to 15 rows of hops which Nelson declares did not yield up to the weight of the remainder of his yard. He contends that his decreased yield was the result of drift in spray from the city's farm which caused the hops to bear so lightly that they were not picked.

"The case, should it come to court, will not only be of interest to the city, but should represent pioneering in a new field of law in that precedents for damage from aerial spraying and dusting are not numerous."

SUIT STICKS

THE OREGON JOURNAL, issue of October 25, 1951, announced, "NY Firm Ordered to Pay for Hops. Federal court judgments made two years ago in favor of two Willamette Valley hop growers now will be enforced, after going all the way to the highest Court of Appeals.

"Fred Geschwill, Woodburn, will collect $15,666 from Hugo V. Loewi, Inc., New York hops broker. Kilian W. Smith, Donald, will collect a total of $15,343 from the same defendant."

BACK TO SCHOOL

Washington State Department of Agriculture's School for Ground Applicators of Agricultural Chemicals was scheduled to meet November 14-17, 1951, in the P. I. Auditorium at Seattle.
COURT CASE

THE OREGONIAN, issue of November 16, 1951, reported, "Hop Raiser Sues. Earl E. Troeh, hop farmer of Clackamas County, Thursday filed suit in Federal Court to recover damages of $14,217 from the Central Chain & Transmission Company, Washington State Corporation. Troeh said he purchased a hop harvester which failed to meet his expectations.

"Plaintiff says he contracted with neighbors to pick their hops and spent $3,117 to build a shed to house the machine. He alleges that the mechanical picker gleaned less than half the hops and damaged the rest."

CO-OP CONCLAVE

MOUNT ANGEL NEWS, issue of October 11, 1951, reported, "Oregon Hop Producers Hold Special Meeting. A pleasant evening was spent October 7 at the Oak Lawn Community Hall by members of the Oregon Hop Producers, Inc.

"A sumptuous 'pot luck' dinner was served at 7 o'clock followed by a short business session. The rest of the evening was spent in getting acquainted and visiting.

"There were about fifty present at the dinner. All voted to have other meetings soon.

"The committee responsible for this nice evening were Mr. and Mr. Perry Larson, Mr. and Mrs. Kilian Smith, and Mr. and Mrs. Armond Netter."

WASHINGTON AWAKE

The SPOKESMAN REVIEW, issue of November 11, 1951, announced, "Yakima Hop Growers to Study Agreement. A meeting of Yakima Valley hop growers will be held in the Pacific Power and Light Company's auditorium in Yakima at 8 p.m. Tuesday to discuss the hop marketing agreement.

"The Hop Control Board meets in Portland, Oregon, November 15 and the Yakima representatives on the Board want to know what the growers they represent want."

AGREEMENT ARGUMENTS

THE PORTLAND OREGONIAN, issue of November 11, 1951, announced, "Hop Contract to be Talked. Possible revisions in the Pacific Coast federal hop marketing agreement will be discussed by representative growers from Oregon, Washington, Idaho and California at a meeting in the Multnomah Hotel here Thursday.

"The meeting to discuss problems confronting the industry was called by Earl Peterson, California grower and chairman of the Committee on Amendments of the U. S. Hop Growers Association.

"Problems to be aired include the trend toward increased acreage in some areas, which resulted in a record crop this year, and the stagnation of hop markets as a result of heavy inventory buying by hop users last year.

"The Growers Allocation Committee of the Hop Control Board will meet at the Multnomah Hotel Friday to make final determinations on saleable and surplus allotments for the 1951 crop. Directors of the U. S. Hop Growers Association will meet here Saturday."
AGREEMENT AMENDMENTS

1. THE OREGONIAN, issue of November 16, 1951, announced, "Coast Hop Growers Plan to Revise Agreement on Marketing Rights, Production. Pacific Coast hop growers will make a second try at tightening up their Federal marketing agreement to keep the pact's provisions from defeating its own purposes.

"The agreement controls the quantity of hops marketed--hence bolsters the price--through surplus and saleable percentages of the crop that are fixed by the control board.

"But it also has a diversion privilege, through which growers can leave their own hops unharvested and transfer the marketing rights to other growers who thus are able to increase production.

"The effect of this was that the industry had a bear by the tail. The agreement held prices up but acreage and production were increasing and a surplus percentage of each crop was getting larger and larger.

"A special committee, named by the Hop Control Board and the U. S. Hop Growers Association, at a meeting in Portland Thursday recommended that the controversial diversion privilege apply to harvested hops only. Growers then would have to pick all of their salable hops and the sale of marketing rights to other growers no longer would be profitable.

"Sale of diversion certificates has been popular with growers in areas where yields are on the down grade.

"The committee action came after growers from the four states had expressed contrary views on the issue.

"Several Yakima area growers held out for scrapping the controversial 'diversion' privilege, thus requiring growers to harvest all of their hops except the percentage declared surplus.

"A group of Oregon growers, on the other hand, wanted to keep the full diversion privilege, thus permitting a grower to leave his hops unharvested and sell the marketing rights to other growers.

"Idaho and California growers spoke for a compromise between the two views.

"Several growers said either the diversion privilege should be removed or the marketing agreement junked.

"Earl Peterson, Santa Rosa, Cal., committee chairman, said the U. S. Department of Agriculture rejected the proposal made last spring to restrict the diversion privilege by requiring harvesting of 50 percent of a grower's production because a hearing held here indicated the industry was not unified on the proposal.

"The meeting was called, he said, to find out if a unified position now could be developed.

"Dean Walker of Independence, Chairman of the Hop Control Board, said the marketing agreement had improved prices and stimulated increased acreage, with the result 'increased production has caught up with us and we have a demoralized market.'"
There is no way under present Federal laws, Walker said, through which production controls can be applied to hops. He suggested the industry make such control laws a long range goal.

2. From the above source, issue of November 17, 1951, we learned, "Change Urged in Hop Terms. Hop growers from Oregon, Washington, Idaho and California at a meeting here Friday approved a committee decision to seek changes in a federal marketing agreement that would eliminate trading in diversion certificates and transfer of marketing rights.

"As a result of the action, the Secretary of Agriculture will be asked to cancel pending proceedings to change the agreement initiated by the industry last year. New proposals will be submitted for an opinion on their legality.

"The new proposals would limit use of diversion certificates to harvested hops only, and would fix saleable and surplus allotments under the marketing pact on an individual farm basis.

"If those proposals are unacceptable, alternative amendments, including a limitation of 50 percent unharvested hops on the diversion privilege, will be submitted.

"The Hop Control Board, which also met here Friday, made a final determination on the 1951 crop of 63,019,590 pounds, a new record. The surplus percentage under the agreement was set at 26.3 percent of the crop.

"The board found that only 47,799,376 pounds of the crop were harvested. Of this 567,111 1/4 pounds were destroyed by fire, leaving only 732,262 pounds of unmarketable 'hot hops' on hand above the 46,500,000 pound saleable allotment for the season."

RESEARCH INSTITUTE

Bulletin No. 98 of the SMALL BREWERS ASSOCIATION, issued October 11, 1951, announced, "Master Brewers Association says a sixteen man Board of Directors is to be named for the Brewing Industries Research Institute. The President of the Master Brewers Association will serve ex officio on Board.

"The Small Brewers Association will have three members on the Board, as will American Society of Brewing Chemists--Barley & Malt Institute--Master Brewers Association--and United States Brewers Foundation."

CANNED HOPS

THE CO-HOP-OCRATOR, issue of October 1951 under an interesting picture of hops in metal containers reported, "First It's Canned Beer...Now Canned Hops? Something new in packaging and the preservation of hops for shipment and storage is pictured above. Presently used in export of hops in re-useable containers of standard metal drums, sealed hermetically in the center or in single drums as desired.

"This is said to be inexpensive and creates less of a problem in use of critical materials than does some other forms of packaging."

POLE PRICES

McMINNVILLE NEWS REPORTER, issue of October 25, 1951, indicated, "Hop growers in the central part of the valley were paying $1.75 to $2.00 each for 20-foot cedar poles. Douglas fir was being taken at $1.25 to $1.50 a pole."
For the benefit of those who may have forgotten what the Hop Marketing Agreement is about—here is a quick picture of it. Under Federal legislation—agricultural products may have a Marketing Agreement. It is simply a legal measure to keep prices from going too low.

Representatives of growers—dealers—and consumers determine the quantity of the particular agricultural commodity which will be used—and the law then forbids any more than this amount to be marketed. Certificates are issued by the Control Board to each grower for his proportionate share of the crop which may be marketed.

The Hop Marketing Agreement is protecting the Hop Growers on price—but it is not working out as contemplated. Because Hop prices are high—new growers enter the field and plant Hops. The Hop Marketing Agreement does not stop any one from starting to raise Hops. As each new grower plants Hops, and is given a quota under the Marketing Agreement—the amount which each old grower may then sell becomes less.

The Brewer members of the Hop Control Board are only interested in seeing to it that sufficient Hops are made available for Brewing purposes. If enough Hops were not entitled to certification by the Board, the price of Hops would go sky-high.

Here are the findings of the Hop Control Board at the Yakima meeting:

Use of Hops by domestic Brewers in the manufacture of 92,000,000 barrels of Beer x .402 pounds of Hops per barrel for the period September 1, 1951, to August 31, 1952. 184,920 Bales

Use of Hops by distillers, yeast, malt syrup and pharmaceutical manufacturers for the period of September 1, 1951, to August 31, 1952. 3,000 Bales

Hops for export for the period September 1, 1951, to August 31, 1952. 63,500 Bales

Hops for normal carryover by Brewers on September 1, 1951. 130,000 Bales

Estimated total carryover of Hops on September 1, 1951. 361,420 Bales

Estimated imports of Hops September 1, 1951, to August 31, 1952. 130,000 Bales

Recommendation by Control Board to Secretary of Agriculture of maximum quantity of 1951 crop Hops which should be marketed. 232,500 Bales

377,500 Bales
"You will notice that the two columns above do not come out to the same figure. The difference is not much, but it represents some 'give and take' necessary in these meetings.

"The significant figure in the above from the point of view of Brewers—is the estimated Beer and Ale production of 92,000,000 Barrels, at a hopping ratio of .102 pounds of Hops. Of course, this was the chief interest of Brewer members of the Hop Control Board. The 'carryover' of Hops by Brewers was increased from the figure of last year.

"The 'unknown' figures in above estimates are the 'Hops for export'—and the 'Imports of Hops.' For these figures, the Control Board had to rely entirely on the estimates of Hop Dealers engaged in the export and import trade. If a great many more hops should be exported than estimated, it could result in not enough Hops being available for use by domestic Brewers.

"Of course there will be a surplus amount of Hops on the Pacific Coast in the hands of Growers. This surplus will represent the number of bales which they are not permitted to market under the agreement. At the present time there are 1950 Hops in the hands of Growers which cannot be marketed—and it is almost a certainty that there will be an even larger amount of 1951 Hops which they must hold as well. These would be available in case of an acute shortage, provided the brewer members of the Hop Control Board could then convince the majority of the Board that they should be released."

HORST HOSTS

THE WEST COAST BREWER for September 1951 ran a well-illustrated feature article entitled, "Northern California Master Brewers See Hops Harvested." You'll have to read the article and see the photos to appreciate how effectively the E. Clemens Horst Company does a real job of selling high quality domestic hops to the brewmasters responsible for the statement, "Some of the finest beers produced in the United States are brewed in California."

RECENT APPOINTMENT

From the same source we learned, "Robert Lapachet Will Represent Hop Producers and Rice Cooperative. Appointment of Robert Lapachet as representative of Washington State Hop Producers, Inc., in the sale of hops to breweries in Nevada and California was announced last month by M. A. Lesh, manager of the Yakima concern."

SABOTEUR SOAKED

INDEPENDENCE ENTERPRISE, issue of September 14, 1951, carried an item emphasizing the results of irresponsibility, "Woman Sent to Jail for Driving Thru Hop Yard. Phyllis George, employed at the McLaughlin hop ranch north of town, was sentenced to serve 90 days in the county jail Monday when she entered a plea of guilty to destruction of personal property in Justice Wiest's court Monday.

"Complaint against Mrs. George was filed by Andy Bell, owner of the hop ranch, who charged that the woman had driven her car through a barrier erected in the hop yard and caused substantial damage to hop trellises in the yard. She was said to have driven her car through two half-inch cables attached to posts, erected to keep automobiles out of the yard."