



BETTER FRUIT

VOLUME IX

JULY, 1914

NUMBER 1



THE MOST POPULAR OF ALL PEARS FOR EATING FRESH AND CANNING IS THE BARTLETT. IT IS GROWN MORE EXTENSIVELY THAN ANY OTHER VARIETY AND IS PRODUCED IN A LARGE COMMERCIAL WAY IN MANY SECTIONS OF THE NORTHWEST. SOUTHERN OREGON, WILLAMETTE VALLEY, YAKIMA VALLEY, HOOD RIVER, AND IDAHO. THIS SCENE WAS TAKEN AT SHERIDAN, OREGON, WHERE BARTLETT PEARS ARE BEING SET QUITE EXPENSIVELY. THE SHIPPING SEASON WILL COMMENCE IN AUGUST.

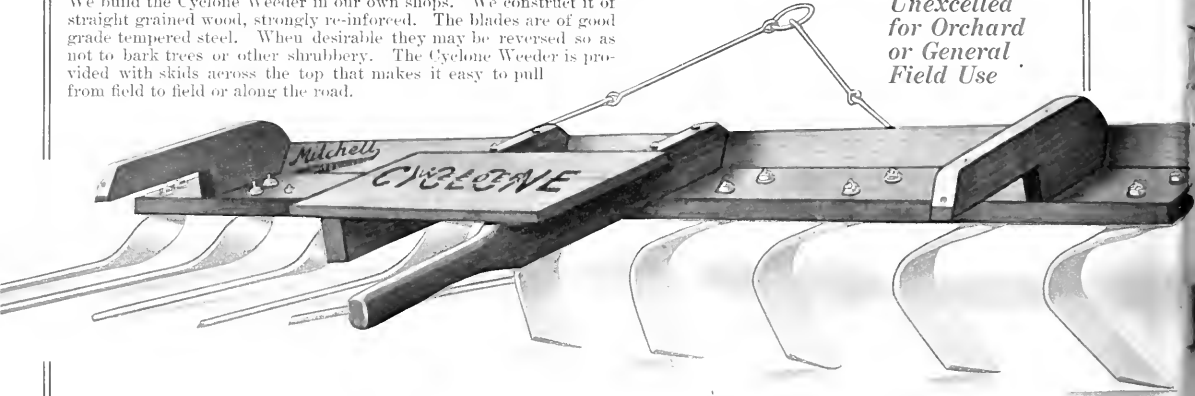
BETTER FRUIT PUBLISHING COMPANY, PUBLISHERS, HOOD RIVER, OREGON

Subscription \$1.00 per Year in the United States; Canada and Foreign, Including Postage, \$1.50

Single Copy 10 Cents

We build the Cyclone Weeder in our own shops. We construct it of straight grained wood, strongly re-inforced. The blades are of good grade tempered steel. When desirable they may be reversed so as not to bark trees or other shrubbery. The Cyclone Weeder is provided with skids across the top that makes it easy to pull from field to field or along the road.

*Unexcelled
for Orchard
or General
Field Use*



A Low Priced Effective Weeder

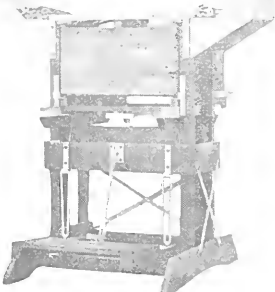
By building this weeder ourselves and in quantities we make attractive prices. Write us stating size wanted and we will quote. Sizes 6, 8, 10 and 12-foot.

Implements and Vehicles

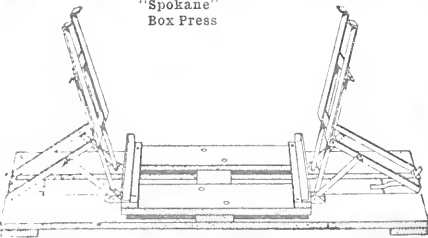
PORTLAND, ORE., SPOKANE, WASH., BOISE, IDAHO

FRUIT SUPPLIES

Pack Holders, Picking Bags,
Box Presses,
Pruning Shears,
Pruning Saws,
Chests & Trunks,
Box Handles, Pruner Cuts,
Ruler Cards,
Nanny Cramps,
Pruning Cramps,
Paper Holders,
Wall Strippers, Packing Tables



"Spokane"
Box Press



"Perfection" Box Press



"Ideal"
Picking Bag

Write for particulars
and catalogue.

The Hardie Manufacturing Company

PORTLAND, OREGON

JOBBERS

or

Fruit Growers' Supply Company, Spokane, Wash.

THE WORLD

OUR ORCHARD

The Fruit Merchant is unquestionably the aristocrat of the commercial world, for it is he who deals in and distributes not only the most beautiful but, also, one of the most useful products of nature.

Apples in Boxes

The biggest element of value in the Northwestern box apple to everybody concerned is STABILITY.

Growers have not only made it standard by methods of culture and packing far beyond anything previously known in connection with the fruit, but have provided a complete range of standard varieties that makes the product staple in the market all year round, and over a large part of the world.

It is this element of STABILITY more than anything else that gives the Northwestern box apple the preference with purchasers of fine table fruit. It is bought for its trustworthy standards as much as for its quality, and proof of this is found in the fact that any lowering of standards would quickly destroy the trade.

STABILITY is the biggest element of value in the Northwestern box apple TRADE.

For with a standard product the true merchant can step in and perform his service. Mercantile service is as indispensable to producer and consumer as the service of transportation. For the true merchant cultivates the demand. He finds it, stimulates it, conserves it, increases it. He deals with the purchasing public at close range and makes good any falling off in the standards, accidental or otherwise. He combines the best in one product with the best in allied products, making himself a permanent trade center to which the purchasing public will find it most convenient to turn year after year, not only for supply, but for responsibility. And he holds the producer up to the present standards and constantly sets new ones before him.

In connection with the Northwestern box apple,

STEINHARDT & KELLY

have performed the function of true merchants.

To the purchasing public they bring the best fruit the world affords.

And to the grower who realizes the immense importance of STABILITY and who has seen the demoralizing effects of speculative marketing, they offer an outlet that is available year after year, of ever-growing capacity, and which more than anything else, possibly, has established for the best packs of Northwestern box apples those rational, non-speculative f.o.b. prices which are absolutely necessary for the future growth of the trade.

There will always be fashions in marketing, and it will always be in human nature to demand that new experiments be tried.

STEINHARDT & KELLY

believe, however, that the growers in the Northwest who see furthest, understand the mercantile trend of the trade as clearly as themselves, and that therefore they can continue to depend upon the co-operation of the grower who conducts his plant as a staple business for the fine fruit that is necessary in extending their trade as a staple business.

Steinhardt & Kelly NEW YORK

OUR MARKET

THE WORLD

3/3/64

SIMONS, SHUTTLEWORTH & CO., Liverpool and Manchester
 SIMONS, JACOBS & CO., Glasgow GARCIA, JACOBS & CO., London
 J. H. LUTTEN & SON, Hamburg
 Agencies and Representatives in Every Important European Market

European Receivers of American Fruits

FOR MARKET INFORMATION ADDRESS

Simons, Shuttleworth & French Co.
 204 Franklin Street, New York

Ira B. Solomon
 Canning, N. S.

Simons Fruit Co.
 Toronto and Montreal

Simons, Shuttleworth & Webling Co.
 46 Clinton Street, Boston

OUR SPECIALTIES ARE APPLES AND PEARS

IF YOU WANT TO MARKET
 YOUR

FRUIT

RIGHT

ALWAYS SHIP TO

W. B. Glafke Co.

WHOLESALE FRUITS
 AND PRODUCE

108-110 Front Street
 PORTLAND, OREGON

W. H. DRYER

W. W. BOLLAM

DRYER, BOLLAM & CO.

GENERAL
 COMMISSION MERCHANTS

128 FRONT STREET

PHONES: MAIN 2348
 A 2348

PORTLAND, OREGON

LEVY & SPIEGL

WHOLESALE

FRUITS AND PRODUCE
 Commission Merchants

SOLICIT YOUR CONSIGNMENTS
 Top Prices and Prompt Returns
 PORTLAND, OREGON

STORAGE

Ship your Furniture
 to us to be stored
 until you are located

TRANSFER & LIVERY CO.
 Hood River, Oregon

The Old Reliable
BELL & CO.
 Incorporated

WHOLESALE

Fruits and Produce

112-114 Front Street
 PORTLAND, OREGON

Richey & Gilbert Co.

H. M. GILBERT, *President and Manager*

Growers and Shippers of

YAKIMA VALLEY FRUITS
 AND PRODUCE

Specialties: Apples, Peaches,
 Pears and Cantaloupes

TOPPENISH, WASHINGTON



Stop at "The Oregon," Hood River
 Clean Rooms—Excellent Meals—One block from depot

Mark Levy & Co.

COMMISSION
 MERCHANTS

Wholesale Fruits

121-123 FRONT AND
 200 WASHINGTON ST.
 PORTLAND, OREGON

A PANORAMIC VIEW

of the
 Famous Hood River Valley
 showing

13,000 acres of apple orchards,
 Mount Hood, Mount Adams and
 the Columbia River Gorge.
 40 inches long Price \$1.00

SLOCUM & CANFIELD'S BOOK AND ART STORE
 Hood River, Oregon

W. F. LARAWAY

DOCTOR OF OPHTHALMOLOGY

EYES TESTED  LENSES GROUND

Over 30 Years' Experience

Telescopes, Field Glasses
 Magnifiers to examine scale

Hood River Oregon and Glenwood Iowa

**"WE STARTED RIGHT
AND WE ARE RIGHT"**

6458 Acres

IN OUR ENTERPRISE

4178 Acres

ALL IN APPLES

Nine miles continuous rows of trees, the largest apple orchard ever planted.

All are one, two and three years old; the two and three year old all sold, amounting to over 3,000 acres.

We are now offering our one year at terms to suit you.

We give five years, from date of planting, free care. Our company is unlike others in the feature of staying with our purchasers after the free care period. Our plans make our interests mutual; we all work together for the interest of all.

Our Booklet will give you a simple statement of our dealings and methods. Write us for information.

DUFUR ORCHARD COMPANY

Northwestern Bank Building
Portland, Oregon

**The
First
National
Bank**

Hood River, Oregon

F. S. STANLEY, *President*
J. W. HINRICHS, *Vice President*
E. O. BLANCHAR, *Cashier*
V. C. BROCK, *Assistant Cashier*
C. D. HINRICHS, *Assistant Cashier*

**Savings Department
Safe-Deposit Boxes
Interest on Time Deposits**

Careful attention given to business
of non-resident clients

**Capital and Surplus \$134,000
Total Assets over \$600,000**

Selling Daily June 1 to September 15

**Excursion
Tickets**

To the East and Return from the
Pacific Northwest via

**Northern
Pacific
Railway**

Minneapolis	\$60.00
St. Paul	60.00
Duluth	60.00
Superior	60.00
Chicago	72.50
Milwaukee	72.50
Winnipeg	60.00
St. Louis	70.00
Kansas City	60.00
Omaha	60.00
New York	108.50
Philadelphia	108.50
Boston	110.00
Washington	107.50
Pittsburgh	91.50

And relatively low fares to
all other Eastern points.

Advise what points you wish to reach
and we will advise you rates. A letter
or postal will receive our best atten-
tion.

Yellowstone National Park

June 15 to September 15.

Take the side trip to the Park
from Livingston.



A. D. CHARLTON, A. G. P. A.
Portland, Oregon

LESLIE BUTLER, *President*
TRUMAN BUTLER, *Vice President*
C. H. VAUGHAN, *Cashier*

Established 1900

Butler Banking Company

HOOD RIVER, OREGON

Capital fully paid \$100,000.00

INTEREST PAID ON TIME DEPOSITS

We give special attention to good Farm Loans

If you have money to loan we will find you good real estate security, or if
you want to borrow we can place your application in good hands, and we
make no charge for this service.

THE OLDEST BANK IN HOOD RIVER VALLEY

LADD & TILTON BANK

Established 1859

Oldest Bank on the Pacific Coast

PORTLAND, OREGON

Capital \$1,000,000.00
Surplus 1,000,000.00

Officers

W. M. Ladd, *President*
Edward Cookingham, *Vice President*
W. H. Dunckley, *Cashier*
R. S. Howard, Jr., *Assistant Cashier*
J. W. Ladd, *Assistant Cashier*
Walter M. Cook, *Assistant Cashier*

INTEREST PAID ON TIME DEPOSITS AND SAVINGS ACCOUNTS

Accounts of banks, firms, corporations and individuals solicited. Travelers' checks for
sale, and drafts issued available in all countries of Europe.

Arcadia Irrigated Orchards

The largest and most successful orchard project
in the entire West

7,000 acres planted to winter apples. Gravity irrigation. Located 22 miles north of Spokane, Washington, directly on the railroad. We plant and give four years' care to every orchard tract sold. \$125, first payment, secures 5 acres; \$250, first payment, secures 10 acres; balance monthly.

Send for booklet

Arcadia Orchards Company

Deer Park, Washington



When you get to Hood River
stop at the

Mt. Hood Hotel

Occupying one-half block; with
a new brick annex.

Rooms single of en suite
Twenty rooms with bath
Special rates to families

Trains stop daily in front of Hotel.
Bus meets all boats.

50c Free That's the cost of each copy of my copy-
righted descriptive Catalog No. 6 of
Trees, Shrubs, Vines and Plants

Write for a copy, Mention this paper.

J. B. PILKINGTON, NURSERYMAN, PORTLAND, OREGON

We make a specialty of

Catalogs Booklets Circulars

*for Nurserymen, Fruit
Growers, Manufactur-
ers and Selling Agents*

Write us for specifications and
information. Quality and Service

F. W. BALTES AND COMPANY
FINE PRINTING Portland, Oregon

**ACID BLAST
ETCHED PLATES**

*We have installed
the only etching
machines in the
State of Oregon*

*Blast etched cuts
have a printing
quality which has
never before been
obtainable with
process engraved
plates*

**THEY COST THE SAME
AS THE OTHER KIND**

**WE MAKE
CUTS
THAT PRINT**

**HICKS - CHATTEN
ENGRAVING CO.**

607 BLAKE-M-FALL BLDG., PORTLAND, OREGON

By an unusual arrangement with the publishers
We offer to our readers on special easy terms

BAILEY'S

NEW STANDARD

CYCLOPEDIA OF HORTICULTURE

Everything Newly Written. Up-to-Date.
Beautifully Illustrated.

The new Standard Cyclopaedia of Horticulture has been freshly written in the light of the most recent research and experience. It is not merely an ordinary revision or corrected edition of the old Cyclopaedia, but it is a new work from start to finish, with enlarged boundaries geographically and practically; it supersedes and displaces all previous editions or reprints of every kind whatsoever.

It is both an Encyclopedia and a Manual, for with the aid of its Synopsis and Key, amateur and professional alike may quickly identify any plant, shrub or fruit contained within the set, and then receive expert instructions for its cultivation.

A FEW OF THE NEW FEATURES

Vol. I—Just Published

The Monarch of Horticultural Literature

Six large quarto volumes. More than 3,600 pages. 24 full page exquisite color plates. 96 beautiful full page sepia halftones. More than 4,000 text engravings. 500 Collaborators. Approximately 4,000 genera, 15,000 species and 40,000 plant names.

Key to Identification of Plants This is a device to enable One to find the name of a plant. The key is so simple that it is equally as useful to the veriest amateur as to the botanist or commercial expert.

Synopsis of Plant Kingdom This is one of the most important features of the new edition. It constitutes a general running account of the classes, orders and groups of plants, with a brief sketch or characterization of 215 of the leading families, comprising those that yield practically all the cultivated plants.

Illustrations There are 24 colored plates; 96 full page halftones, and more than 4,000 engravings which serve as guides in the text. These color plates constitute the best possible combination of expert horticultural color photography and color printing, with a mastery in selection such as only Dr. Bailey's knowledge can supply.

The Glossary This is an analysis of all technical terms that are used in the work and in similar works. It comprises botanical and horticultural terms, with brief definitions.

Translation and Pronunciation of Latin Names

In Volume I is inserted a list of between 2,000 and 3,000 Latin words used as species—names of plants, giving the English equivalent or translation and the pronunciation.

Class Articles Here are some of the titles of these articles: Diseases; Drainage; Dwarf Trees; Exhibitions; Forcing; Frost; Insects; Irrigation; Orchards; Tools and Implements; Transplanting. The articles on Fruit Growing throughout the broad territories covered by this work are right up to date and comprehensive. **The Cyclopaedia is the great fruit-growing authority.**

General Index The final volume will contain a complete index to the entire work, enabling the reader to locate volume and page of any subject he has in mind.

Write for 16-page Prospectus containing full details and our offer.

BETTER FRUIT PUBLISHING CO.
HOOD RIVER, OREGON



Main 8582 - A 2695

Vacuum Cleaners

DUNTLEY AND OTHERS

Electric and hand power. The only Exclusive Vacuum Cleaner Store in the state. If we haven't what you want, we will get it for you. All machines fully guaranteed. Other machines taken in exchange.

W. L. BENTLEY & CO.
No. 473½ Washington St.
Portland, Oregon

*Reduce Your
Milking
Expense*

with a

B-L-K MILKER

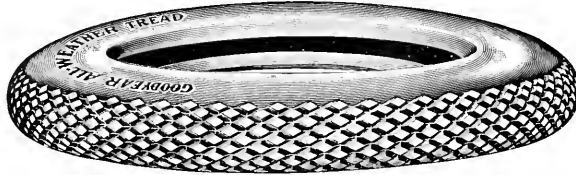
To reduce your expenses is to increase your profits. It costs the average dairyman \$20 to \$30 per cow per year where hired labor does the milking—one-third to one-half the income of the average dairy cow.

A B-L-K Milker reduces milking expense one-half. One man alone with two B-L-K machines can milk four cows at a time or 25 to 30 cows per hour. You can save the cost of the outfit the first year. Upkeep and operation expense small. It is the only method by which clean and sanitary milk can be produced under ordinary stable conditions. Write for Milker Catalogue No. 28.

MONROE & CRISSELL

Headquarters for Dairy Supplies
The Simplex Line
Oregon Silos
Star Barn Equipment
Babcock Testers

126 Front Street Portland, Oregon



These Costly Tires

Now Undersell Nearly Every Make

The tables are turned. Goodyear No-Rim-Cut tires—once the costly tires—now sell below most others. There are 16 makes sold at higher prices—up to one-half higher.

Now these tires which rule Tiredom—the leading tires of the world—save you on first cost as well as on last cost. It is more important than ever to get them.

Reasons for Cost

No-Rim-Cut tires for a long time cost one-fifth more than other standard tires. That was due to four great features—costly features—found in no other tire.

They ended rim-cutting by a method we control. It has saved tire users millions.

They saved blow-outs—all the blow-outs due to wrinkled fabric. They did this through our "On-Air" cure—an extra process which costs us \$1,500 per day.

They reduced loose tread danger by 60 per cent through a patent method.

Our All-Weather tread gave to users a tough, double-thick anti-skid. A flat tread, as smooth as a plain tread, but grasping wet roads with deep, sharp, resistanceless grips.

No other tire at any price has ever offered these four features.

Reasons for Price

The reasons for present Goodyear prices are just these:

New factories, new equipment, new machinery, new efficiency. A multiplied output, now the largest in the world. It has cut overhead cost 24 per cent and labor cost 25 per cent.

A modest profit. Last year our profit averaged only 6½ per cent.

No-Rim-Cut tires at present prices are even better than they were at high prices. They excel other tires just as far, and in just as many ways.

Up to now men bought these tires because of their hidden economies. They bought millions of them because of their known mileage records.

Now you have in addition this visible economy—this saving which comes at the start. You have a price from \$5 to \$15 lower than many other tires.



Any dealer will supply you Goodyear tires at Goodyear prices. If he is out, he will get them from our nearest branch.

The Goodyear Tire & Rubber Company, Akron, Ohio

Toronto, Canada

London, England

Mexico City, Mexico

Branches and Agencies in 103 Principal Cities. Dealers Everywhere.

Write Us on Anything you Want in Rubber.

(1631)

BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

Status of the American Fruit Trade

By R. M. Rutledge

UNFORTUNATELY there are few statistics of American horticulture, and what few are available are scattered and incomplete. Before the eleventh census (1890) only a few bulletins of summaries were published. Since then the twelfth and the thirteenth (1900 and 1910) census figures give more complete and detailed figures as regards horticulture. Many of the horticultural societies and periodicals make annual summaries of the output by means of inquiries sent to their members and subscribers. The apple exporters have the records of the exports of this fruit. The Treasury, Agriculture and Commerce and Labor Departments of our national government issue bulletins from time to time dealing with exports and imports. But other than these there is little statistical measure of our horticultural progress. In collecting the following information I have consulted all available sources; in most cases I have merely taken the essential facts, but where an authority has expressed his idea clearly extracts have been incorporated in this article. The 1910 census gives these figures to show the comparative importance of the fruit crop and trade.

TABLE I

	Total Value of Crop in U. S. 1909	Pct. Total Value Over Groups 1899	Pct. Increase
All crops in U. S.	\$5,487,164,223	100.00	83
All cereals.....	2,665,539,714	48.6	73.8
Hay and forage.....	824,004,877	15.0	70.2
Vegetables.....	251,686,214	4.6	75.3
Potatoes.....	166,423,910	3.0	69.2
All fruits and nuts	222,021,216	4.0	66.9
All small fruits.....	29,971,181	0.5	19.8
All orchard fruits.....	140,867,367	2.6	68.2
Apples.....	83,234,492	1.5	...
Peaches, nectarines	28,781,078	0.5	...
Plums and prunes	10,209,495	0.2	...
Pears.....	7,910,600	0.15	...
Cherries.....	7,234,160	0.14	...
All grapes.....	22,027,961	0.4	56.3
Tropical and sub-tropical.....	21,706,753	0.5	200.3
Oranges.....	17,566,464	0.35	...
All nuts.....	4,117,671	0.1	128.1
Flowers and plants	51,872,329	0.6	85.9
Nursery products.....	21,050,822	0.4	167.9
Total value of fruit imports (1910)	\$23,220,792		
Total value of fruit exports (1910)	18,504,591		
Per cent of fruit crop exported (1910)	8.3%		

TABLE II—PERCENTAGE OF VALUE OF ALL CROPS BY SECTIONS

Section	All crops	Vegetables and potatoes	Fruits and Nuts—Orchard Small Tropical & sub-tropical					
			Total	fruits	fruits	subtrop.	Grapes	Nuts
All United States.....	100	7.6	4.0	2.6	0.5	0.5	0.1	0.4
Northeastern.....	100	21.5	7.0	5.2	1.7	...	0.1	...
Middle Atlantic.....	100	17.4	9.6	6.9	1.4	...	1.2	...
East-North Atlantic.....	100	6.9	3.0	2.2	0.5	...	0.3	...
West-North Atlantic.....	100	3.8	1.4	1.0	0.3	...	0.1	...
South Atlantic.....	100	9.8	3.8	2.1	0.6	1.0	0.1	...
East-South Central.....	100	7.5	2.4	2.0	0.3	...	0.1	...
West-South Central.....	100	4.8	1.4	0.8	0.3	0.1	...	0.1
Mountain.....	100	9.3	3.1	1.7	0.6	...	0.1	...
Pacific.....	100	8.1	21.4	9.2	1.2	6.0	3.9	1.1
The North.....	100	7.5	3.3	2.1	0.6	...	0.3	...
The South.....	100	7.5	2.6	1.7	0.4	0.4	0.4	0.1
The West.....	100	8.5	15.3	7.6	1.0	3.8	2.5	0.7
East of the Mississippi.....	100	9.9	4.2	2.9	0.7	0.3	0.3	...
West of the Mississippi.....	100	4.9	3.9	2.1	0.4	0.7	0.5	0.2

Early Mediterranean Imports

One hundred years ago the fruit merchant as such did not exist in this country. Some of the larger importers occasionally received a few half casks of dried prunes, currants, raisins or grapes from the Mediterranean, but beyond these even the luxurious did not aspire. It was some years before even so simple a custom as selling native fruit brought to town in season by the neighboring farmer became at all general with the old New York grocers. Having reached this point of development, the fruit trade stood still until after 1830, when the importation of foreign fruit was considered seriously. In 1832 there arrived at New York by sailing ship the first cargo of oranges from Sicily. Lemons followed almost immediately. The next thirty years saw the Italian fruits, oranges and lemons, holding full possession of the American market. At first the trade was largely speculative, but soon the system of auctioneering developed. These auction houses had the advantage of quick returns, and since their origin they have continued as important factors in the fruit trade. In 1865, the wholesale commission house having come to be a generally recognized feature of the fruit trade, many of the Italian growers began consigning their fruit directly to American firms. This arrangement, dispensing with the Italian middleman, was found the more profitable for both the grower and the American jobber, and for fifteen years the Mediterranean trade continued on these lines. About 1880 the third and last change in the methods governing the Italian fruit trade began with the establishment here of representatives of several of the large Italian houses. These houses have controlled the Mediterranean fruit trade since that time. Spain, once a large shipper of oranges, has been forced from the American market by the Italian growers, and excepting her grapes of Almeria and Malaga, and latterly her lemons, she sends little now to this country.

Competition of Domestic Fruit

Up to 1867 the foreign fruitgrower and shipper saw no cloud on the horizon of the American market. The lemon of Sicily and the sweet Messina orange competed only with the apple for Yankee favor. Grapes, raisins, currants, prunes, every European fruit—green, dried or preserved—found in the United States a market that was never glutted except by itself. Bananas and pineapples from the West Indies, Cuba and Central America, coconuts and tropical fruits of every description, came only in limited quantities. The foreign fruit controlled the market until the refrigerator car created the great interstate traffic and the importations of foreign fruits, excepting bananas and lemons, were driven into the background. In 1867 the first green fruit reached New York from California. But America has never produced a lemon which could successfully compete with the lemon of Sicily and the banana already stands near the head of the list of favorite fruits of the Americans, so these two fruits will always figure heavily in our imports.

Banana Trade Started

The first bananas were imported into the United States in 1804. Captain John N. Chester, of the little schooner "Reynard," was the skipper of this original West Indian "Fruiter," and thirty bunches were about as many as he thought the American market would stand at one consignment. For twenty-six years after that bananas were only occasionally brought to this country and in but small quantities, until in 1830 John Pearsall imported the first cargo. He chartered the schooner "Harriet Smith," and from her he landed in New York 1,500 bunches of bananas—the first large shipment. From that time the banana trade continued in a modest way—a few cargoes annually for a score of years. It was not until 1880 that the reports of importations listed bananas separately, and even then the value of the importations amounted to only \$461,735. Then it was that the American growers began to feel the pressure of competition with the banana—a competition which has increased phenomenally and is not lessened by the recent tariff which has placed this tropical fruit ("the poor man's fruit") on the free list. That the banana trade is important may be realized by the fact that "in 1912 the continental United States alone consumed 41,520,539 bunches, or over sixty bananas for each man, woman and child in the Union."

Banana Supply of the United States

The consular returns for 1912 show that this tremendous supply of fruit comes from the following countries: Jamaica, 15,467,918; Honduras, 7,151,178; Costa Rica, 7,053,664; Panama, 4,581,500; Cuba, 2,478,581; Nicaragua, 2,270,100; Guatemala, 2,017,650; Colombia, 1,542,988; Mexico, 817,006; British Honduras, 557,160; Dominican Republic, 301,000; Dutch Guiana, 261,548; others, 17,246; a grand total of 44,520,539 bunches. The same records show that the world supply in 1911 equals about 52,915,963 bunches. Excepting the Canary Islands all of the banana-producing countries border on the Caribbean Sea. From these figures it may be seen that the United States consumes about 85 per cent of the entire banana crop of the world. Much of the remaining 15 per cent passes through the ports of this country, making the banana trade both an export and an import business. In recent years a European taste for this fruit has been developed and direct importations have been made; although the amount sent into the United States will tend to increase rather than decrease, the increased demands of the rest of the world will be made up by an increase of production, for the area capable of producing bananas has scarcely been touched. Although the first full shipload reached the American market in 1830, it was not until 1900 that the English demand warranted a full cargo. And as late as 1912 the first cargo of bananas reached continental Europe; this was landed in Germany in poor condition, but late in that year a really marketable full cargo was shipped direct to that country. One immense Yankee company controls nearly the entire banana trade of the world.

TABLE III—IMPORTS OF FRUITS INTO THE UNITED STATES

	1900	1910	1912
Raisins	8531,124	8296,047	8295,466
Currents	916,908	1,390,020	1,561,350
Plums, prunes,	17,700	11,714	536,983
Dates	110,319	1,517,162	1,110,311
Note.—Blanks not of sufficient quantity to be listed.			
	1900	1910	1912
Oranges	\$1,087,041	882,457	\$168,880
Lemons	3,666,881	3,136,933	3,368,856
Pananas	5,877,835	11,642,693	14,368,320
Pineapples.....	.....	1,517,162	1,110,311
	1900	1910	1912
Olives	\$1,659,801	82,363,277	.....
Figs	775,319	931,763	.....
Grapes	1,682,991	2,331,564	.....
Total 1900	Total 1910	Total 1912	
Fresh and dried fruits	\$16,284,758	\$23,220,792	\$28,613,273
Fruit juices	83,302	45,608	.....
Nuts	2,978,831	13,216,742	15,828,093
Total 1900	Total 1910	Total 1912	
Preserved fruits	\$1,213,179	956,368	936,107
Agricultural imports	420,139,288	687,509,115	783,157,471
<i>Percent of Fresh, Dried and Preserved Fruits in Total Agricultural Imports</i>			
1900 .....	.....	.....	1.2%
1910 .....	.....	.....	3.6%
1912 .....	.....	.....	4.0%

Apples Our First Fruit Export

"The export trade in fruit seems to have begun with the apple, as a large supply existed in close proximity to the seaport towns. Trade in this fruit with the West Indies probably developed early in the eighteenth century, though we have no record of shipments until 1741, when it is stated

that apples were exported from New England to the West Indies in considerable abundance. No trans-Atlantic shipment has been disclosed earlier than that of a package of Newtown Pippins of the crop of 1758 sent to Benjamin Franklin while in London." The sight and taste of these apples later resulted in quite a trade, for a letter written in 1773 by the younger Collinson to John Bartram states that the apple crop of England had failed and that the market was being supplied with American apples. He says: "They are, notwithstanding, too expensive for common eating, being sold for twopence, threepence, and even fourpence an apple." Thus it came about that apples made up the first shipments of our export fruit trade, and for many years this was the only fruit shipped away. Even now "King Apple" controls the major part of our export trade. "Shipments of ice from New England ports to the West Indies, which began in 1805, were accompanied by large quantities of apples, and soon after the extension of the ice trade to India and China, which occurred in 1830, American apples could be had in the ice ports of those countries." But statistics do not exist prior to 1821, when the Treasury reported an export of 68,443 bushels of apples valued at \$39,966.

Apple Exports to Europe

In the "Transactions of the American Institute" (1843, page 125), it is said that the Boston fruit dealers had shipped apples and cranberries to Europe for many years. "In 1845 Newtown Pippins from the orchard of Robert L. Pell of Ulster County, New York, which contained 20,000 trees, sold in London at \$21.00 a barrel." At a later date shipments of the same variety and others from the Piedmont and Mountain districts of Virginia were sent out. Since then the shipments of apples have figured heavily in our export trade and they promise to increase in the near future—especially now since the apple-package standardization has been passed. The Eastern States still furnish a large part of the apples exported, but shipments from the great orchard districts of the Mississippi Valley and the Pacific Coast now are a very large factor. New York has always held the lead in the exportation of apples from the American continent to Europe. A glance at Table IV will show that the ports in the order of their importance as shippers of barreled apples in 1912-13 were approximately: New York, 32 per cent of the total; Boston, 16 per cent; Montreal, 12 per cent; Portland, Maine, 10 per cent; Halifax and St. Johns, 30 per cent. Other ports that at one time or another have entered the race are: Philadelphia, Baltimore, Newport News, Norfolk, Annapolis and Wolfville. With the exception of the last two mentioned, none of the ports have had enough to list since 1897-98, and Wolfville has entered the race only once, in 1904-5. Boxed apples have only been listed separately since 1898-99, and since that

time several ports have exported them. In 1912-13 the percentages of the trans-Atlantic exportation of boxed apples were about: New York, 93 per cent; Boston, 6 per cent; Portland, Maine, 1 per cent.

English Imports of Apples

Liverpool, London and Glasgow have always taken most of our exports of apples, but since 1896-97 Hamburg and other continental ports have figured heavily. England imports large quantities of apples from the United States and Canada, as well as some from other countries. Their relative importance is shown by the following approximate percentages:

ENGLISH IMPORTS OF APPLES		
	1911	1912
United States	44%	43%
Australia	9	10.5
Belgium	0.8	1.3
Canada	41	42.7
France	1.6	0.4
Portugal	2.6	2
All others	1	0.6
	100	100

Total in hundredweight.... 3,332,618 3,881,946

"Distribution by the importing fruit brokers is either by private sale or by auction. When large quantities are to be dealt with, the latter method is the most general, but where the supply is short private sales are frequently better. Brokers prefer to be in a position to adopt either method, according to their judgment of market conditions at the time." In 1912-13 the American imports came in at the ports as follows: Liverpool, about 35 per cent of our total export of barreled apples and about 22 per cent of our export of boxed apples; London, 19 per cent of the barreled and 38 per cent of the boxed apples; Glasgow, 18 per cent of the barreled and 7 per cent of the boxed apples. Of the boxed apples taken into Great Britain, Washington supplies about 60 per cent and Oregon and California each about 20 per cent.

European Imports of Apples

The importation of fresh apples is enormous in Germany, coming principally from the United States and Australia and consisting largely of boxed apples. The Australian shipments are entirely of boxed apples, but they do not compete with the North American fruit, for the season of the Australian apples is from April to the end of July, whereas that of the fruit from the United States has a season from October to April. An idea of the extent of the importation may be had from the fact that in 1912-13 300,000 boxes and 230,000 barrels of North American apples were handled at Hamburg, the latter originating in the Eastern States and Canada, while the former came principally from Washington and Oregon. Hamburg is the distribution center for all Germany. Of the 1912-13 crop Hamburg took about 8 per cent of the barreled and about 12 per cent of the boxed apples. Austria, France, Italy, Russia, Spain and Switzerland rarely import any American apples except in an off year for their own crops. Belgium's importations of apples come by way of London and Southampton from California,

Oregon, Washington, Canada and South Africa; the total of all for the year 1912 was valued at \$71,420. The Netherlands imports quite a quantity of apples, principally from the United States, Australia and Nova Scotia, through the port of Rotterdam. Owing to lack of data it is impossible to give the exact amounts of this importation. So likewise it is impossible to separate the amount of apples imported by Norway, which in 1912 amounted to 325,557 pounds from the United States and Australia.

Apple Exportations to South America

Our apple trade with our sister continent has been very under-developed. Now, however, owing to the increasing prosperity of South America, exportations of American apples are finding their way into that market. At present the industry is only in its infancy, but it is hoped that the solidity and flavor of the American apple will enable it to travel long distances and hold its own against all comers. Argentina, Brazil and Uruguay all have small importations of our apples, but due to the fact that refrigeration facilities are very inadequate on the few transportation lines between our ports and those of South America these have been very limited in quantity and costly when landed in those trans-equator ports. American apples are unknown in Chile as well as many other parts of the West Coast, but with the advent of the Panama Canal this will probably be remedied. Venezuela imports some of our apples from the Northwest, but it is only at great cost incurred by transshipping over the Isthmus; these come principally from Washington and Oregon. Mexico started some importation of our apples a few years ago when refrigerator cars could be sent to Mexico City, but due to the unsettled condition of the country and the impossibility of maintaining rapid transportation, this has ceased. However, some think that even in the present state of affairs a profitable trade could be built up with the seacoast towns. All of this trade is growing rapidly, as may be noted from one day's shipments: On October 18, 1913, to Rio de Janeiro, Brazil, went 200 boxes; to Bahia, Brazil, 128 boxes of apples; to Buenos Ayres, Argentina, went 3,274 boxes and 464 barrels of apples.

Apple Exportations to Other Continents

We in the Northwest are accustomed to think of Asia as a "big" market for our apples, but as a matter of fact only a very small amount of first-class stock is wanted in Asia. Hongkong, for instance, imported only 11,000 boxes from all countries in 1912-13; of this 2,000 boxes came from the Hood River district by way of Seattle, and 6,000 were second and third-class apples from San Francisco. Hongkong is the principal distribution center for imported fruits for continental Asia. India and Japan rarely see an American apple, according to the consular reports. South Africa imported some 700 or 800 boxes and barrels of apples

in 1912-13 from California by way of London. This is largely a speculative proposition and will probably never be a basis for a permanent trade. Australia, though a large exporter herself during our summer, nevertheless imported some 61,000 cases of apples from the United States in 1912-13; of this amount 49,100 cases were from Washington and 11,600 cases were from California.

Other Fruit Exportations

In addition to apples, which comprise by far the greatest amount of our fruit exportations, there are various other fruits sent out, such as cranberries, peaches, plums, prunes, pears, grapefruit, oranges, etc. The supply of all but the first comes mainly from California. Our exportations to England have always been heavy, such as:

	1911, lbs.	1912, lbs.
Apricots and peaches....	415,000	2,330,000
Pears	132,916,000	91,345,000
Plums and prunes.....	2,178,000	6,530,000

Canada imports many of our tender fruits. Several other countries import certain of our fruits, but as a rule this is a very limited trade, and in the case of the Mediterranean countries the trade is absent altogether. Our trade with South America in fruits other than apples is rapidly growing. For instance, the exports to the south for one day (October 18, 1913) were: To Rio de Janeiro, Brazil, 1,270 boxes of pears and 120 boxes and 4,224 packages of other fruit; to Buenos Ayres, Argentina, 970 boxes of pears and 800 packages of other fruit.

Export of Dried Fruits

Since about 1895 increasing export shipments of dried apricots, peaches and prunes have been made from California, and this branch of the trade promises soon to reach large proportions. Dried apples have been exported for many years—in fact before accurate records of exports were kept. Exports of dried fruits have increased rapidly since the perfection of the fruit dryer, which occurred about 1870-75. Not all European countries draw upon this country for their dried fruits, and some buy only in off years for their own fruits. "It is estimated by dealers that there are imported annually into Austria twenty carloads of dried apricots, twenty carloads of dried apples, pears and cherries, thirty carloads of dried prunes, or about seventy carloads—1,500,000 pounds—from America." Much of this fruit is brought in by way of England and Germany, so these figures seem inaccurate. Belgium imported from America in 1912 dried apples to the extent of \$121,985; dried apricots, \$52,665; dried prunes, \$136,115. France imports much, but this is entirely dependent upon her own crops. Germany imports much along this line from the United States, but Italy, Norway and the Netherlands import very little of dried fruit from us. Russia imports a very little and our dried fruit is never seen in Switzerland. England imports very little from us other than prunes and plums,

of which she imported in 1912 114,063,000 pounds of plums, and 28,902,000 pounds of prunes. Asia, South Africa and Australia report practically no importation of dried fruits from the United States. It would seem as though India, China and Japan especially would prove fertile fields for exploitation. Canada imports a very little and Mexico practically none at present, owing to the unsettled condition of the country. Our trade in these goods with South America is not a general trade and is confined to a few cities only; this trade has a bright future before it. For instance, Chile and the other countries on the West Coast, as well as Venezuela and other northern countries, do not know our dried fruits. Uruguay and Argentina import to a limited extent. The growth in this trade may be measured by the figures for Brazil. In 1911 this country imported \$14,097 worth of dried fruits, and in 1912 it imported them to a value of \$19,514 from the United States—an increase of over 35 per cent.

Intra-United States Fruit Trade

As has been noted, the foreign fruits controlled the American market up to the time of the Civil War, and except for a poorly developed apple trade and an unreliable trade in small fruits from New York, New Jersey, Long Island and Delaware there was no domestic competition. Once in a while a sloop loaded with watermelons from the South reached New York, but there was no systematized trade as there is today. Sometimes the peach crop of Delaware failed and California was not ready, as she is today, to come to the rescue. According to Mr. W. D. Barns of Middlehope, New York, "The planting of commercial apple orchards did not receive much attention in New York till 1820 to 1825, although Robert Pell of Esopus had about twenty acres of bearing Newtown Pippin trees from which he exported fruit as early as 1825 to 1830. Along the Hudson, where the fruit could be easily transported to New York City by boat, the trade included a large number of summer and fall apples as well as the winter varieties. They were shipped in straw-head barrels. Some were contracted for by the dealers in New York and some were sold by the captain of the steamboat that carried them to the city." As transportation facilities gradually improved by the opening of canals and railways the farmers in many interior localities found that they could send their fruit to other than local markets and receive profitable returns. Accordingly commercial orcharding began to attract attention, especially in regions which were found to be naturally favorable to the production of good apples. From 1850 to 1860 the number of commercial orchards which were planted increased rapidly, particularly in Western New York. The most potent single factor in this growth was the opening of the Erie Canal in 1825. This afforded cheap transportation from the greatest fruit region in the world.

of oranges, apricots, lemons, etc., and today leads the country in green-fruit production. In the matter of oranges California is a newcomer, not 5,000 boxes of that fruit from that state having been sold in New York prior to 1893, although Western markets knew them before that date. The orange groves of the golden state developed much more rapidly than did those of Florida, and for this reason have already outstripped those of the latter, which has, however, grown them much longer.

Florida Trade Starts

The Florida trade began in the early seventies, just after California had so successfully entered the market with her pears, peaches and grapes. Oranges were the first fruit sent out. Today Florida shares with California as the greatest source of supply for domestic tropical and sub-tropical fruits of all kinds.

Trade From Other Districts

Since that time many districts have developed a special fruit trade. Colorado and the Imperial Valley of California furnish most of the muskmelons, etc., for the United States. Louisiana, Texas, Florida and the other Gulf States hold the early vegetable and fruit supply for the Northern States. Michigan, Georgia and Connecticut each has a famous peach district; the Northwest has become world famous for its excellent boxed apples; some sections of New York have become continuous vineyards, and so on down the list of states, each locality having developed a specialized fruit industry now supplies the remainder of the country, the whole forming an immense interstate commerce of untold value.

Influence of Refrigeration

The use of cold storage in the transportation of fruits has increased greatly of late years, and we find a growing interest in this business from Canada to the Gulf. Perishable products are thus put into distant markets, and the season during which they may be had by consumers is very much lengthened. This has made possible such specialized fruit districts as the "Finger-Lake" region of New York, the Imperial Valley, the berry districts of the South, the citrus fruit districts of California and Florida and the apple industry of the Northwest. Refrigerator cars were first built for the meat trade. The meat was hung in cold storage houses, and was loaded into the cars at or near the freezing point. In a tight, well-built car such a cold load would warm up very slowly, and a small amount of ice served to carry it safely to its destination. When it was attempted to use these cars for fruit the hot load, fresh from the fields, soon melted the limited ice supply and the cars invariably arrived heated and in bad order. To use these cars successfully it was found necessary to build cooling houses at the shipping points, in which the fruit would be cooled off before loading, as in the case of meat. This caused delay in getting the fruit on the market and

TABLE VI—EXPORTS OF BOXED APPLES FOR SEASON 1913-14 FROM NEW YORK (Copyrighted 1914, Mahlon Terhune)

	Liverpool Boxes	London Boxes	Glasgow Boxes	Hamburg Boxes	Bremen Boxes	Man- chester Boxes	Various Boxes	Total Boxes
1913								
Sept. 6	610							610
" 13	1,610	1,903						3,513
" 20		4,584						4,584
" 27	3,537	7,281	1,583					12,401
Oct. 4	7,599	6,177		2,081	637			16,494
" 11	5,512	9,001		2,582	664			17,789
" 18	12,917	12,715	2,530	10,316	2,520			41,088
" 25	7,228	17,922	3,740	7,428	1,775			37,093
Nov. 1	12,080	22,664	2,516	9,373	5,177		101	51,914
" 8	8,363	21,708	3,176	12,234	3,866			49,347
" 15	8,913	9,455		13,965	5,357		600	40,896
" 22	6,413	7,281	8,988	5,232	1,612		1,851	36,401
" 29	7,535	6,799	5,583	16,293	8,294			44,514
Dec. 6	5,413	8,475	8,666	6,522	1,256			30,302
" 13	9,007	6,190	5,482	9,838	7,884		810	39,214
" 20	2,555	1,565	2,757	1,865	1,295		600	13,600
" 27	2,918	2,050		10,700	3,764		600	20,062
1914								
Jan. 3	3,269	5,465	3,804	13,811	3,321		2,885	32,525
" 10	6,920	2,190	3,609	3,568				22,617
" 17	6,835	9,732		9,637	4,445			26,680
" 24	3,896	9,818	789	1,955	1,200			18,858
" 31	6,534	5,618	3,025	10,256	4,981	610	6,490	37,514
Feb. 7	7,439	5,365	1,383	7,537				21,764
" 14	4,125	6,317	2,032	7,359				21,831
" 21	4,057	3,476	2,201	5,256				16,190
" 28	1,206	8,659	730		3,150			16,785
Mar. 7	3,838		946	5,659				11,749
" 14	2,589	361		6,120				9,474
" 21	2,365	5,861	994					9,220
" 28	2,311	1,418	166			630	200	4,788
April 4	1,952	241	720					1,938
" 11	2,428	630	384					3,448
" 18								610
" 25		630						3,912
Totals	168,133	212,592	65,755	205,787	64,437	1,270	25,157	743,131
Boston	46,688	28,651	18,149	5,988		28,651		138,127
Grand totals	214,821	241,243	83,904	211,775	64,437	29,921	25,157	871,258

COMPARISONS WITH OTHER SEASONS

	Liverpool	London	Glasgow	Hamburg	Bremen	Hull	Various	Total
1899-1900	58,992	70,724	13,118	1,925		1,826		139,515
1900-01	61,402	107,752	22,415	1,525		7,000		200,694
1901-02	109,715	155,653	29,419	2,920		9,681		297,327
1902-03	69,026	126,730	11,429	1,488			4,629	212,587
1903-04	107,260	188,613	24,302	23,186		19,814		388,975
1904-05	17,154	32,254	24,181					87,321
1905-06	151,742	196,515	24,067	11,938	13,025	20,657		415,940
1906-07	87,067	128,024	10,307	3,878			22,735	252,011
1907-08	98,409	151,363	11,958	2,208			21,068	285,206
1908-09	208,383	243,969	41,798	3,263	17,858	3,198		520,792
1909-10	170,139	219,980	48,054	22,516			18,152	330,744
1910-11	361,268	501,904	94,465	7,081	18,286		52,346	1,066,610
1911-12	189,334	226,994	44,242	76,634	10,482		16,249	587,035
1912-13	380,081	586,566	106,982	172,208	94,272		30,765	1,157,575
1913-14	214,821	241,243	83,904	211,775	64,437		29,921	871,258

made much additional expense. However, it demonstrated the success of refrigeration for the transportation of fruits and soon cars were built especially for the fruit trade, so that any point having sufficient business to offer can secure efficient car service, with competent men to look after the proper loading and icing of the cars. The first use of ice for the transportation of fruits was in 1805, when the ice trade was extended to foreign countries; at that time apples were shipped even to the Orient. The modern "Bohn" system of steamship refrigeration allows fruit transportation practically around the globe. The first use of the refrigerator car was for the transportation of oranges from California. The first attempt at carrying very perishable fruits was in 1868, when the first attempt at carrying carloads of strawberries under refrigeration was made by Mr. Davis of Detroit, Michigan. This and following attempts failed—the first successful car being sent in 1872 from Anna, Illinois, to Chicago—these berries having been pre-cooled. This constituted the first use of pre-cooling as applied to the transportation of fruits. Today the refrigerator car and steamer are absolutely necessary to the fruit trade. Cold storage of fruit has been practiced ever since the first storage of ice, or even before that time when perishable products were stored in cellars. Today the cold storage industry is very neces-

TABLE VII—EXPORTS OF FRUITS FROM THE UNITED STATES

	1900	1910
Dried apples	\$2,217,861	\$2,056,292
Green and fresh apples	1,144,655	3,175,423
Oranges	271,468	2,213,905
Prunes	\$1,646,332	\$1,016,554
Baisins	139,698	117,103
Other green fruit		
& dried fruits	2,545,451	\$2,119,210
*Including apricots, peaches and pears.		
Apricots		\$1,218,123
Peaches, dried		151,520
Pears, fresh		302,958
Canned fruits	\$3,127,278	\$2,056,019
Other pre-served fruits	63,448	176,474
Total fruits	11,486,172	18,504,591
Total Nuts		30,354,790
(C. Peanuts)		
Total		Per Cent
		Fruit in Exports
1900	\$150,530	844,616,530
1910	881,063	871,158,425
1912	608,938	1,018,133,768

sary, as it permits of a longer period of sale and consumption and to a large extent prevents glutting the market.

Small Fruits

The acreage of all classes of small fruits decreased between 1899 and 1909 from a total of 309,770 to 272,460 acres, or 12 per cent; likewise the total production was 7.9 per cent less, the only crop with an increased production being cranberries. Small fruits in general are grown rather uniformly throughout the United States. In acreage New York and New Jersey head the list, but many states produce crops exceeding the New Jersey crop in value. Strawberries come from all

TABLE VIII—SMALL FRUITS IN THE UNITED STATES, 1909 CENSUS

	Total Value in 1909	Production in 1909 (Quarts)	Acreage	Relative Value Per cent
All small fruits.....	\$29,974,481	426,565,863	272,460	100
Strawberries.....	17,413,326	255,792,035	143,045	58.8
Blackberries and dewberries.....	3,909,831	55,513,570	19,004	13.0
Raspberries and loganberries.....	5,132,277	69,918,196	48,668	17.6
Currants.....	790,131	10,448,532	7,862	2.8
Gooseberries.....	517,034	5,282,813	4,765	1.8
All other small fruits.....	1,810,982	38,870,687	19,116	6.0
				100.0

TABLE IX—ORCHARD FRUITS IN THE UNITED STATES, 1909 CENSUS

	Total Value	Production in 1909 (Bushels)	Increase Over 1899, Pct.	Relative Value Per cent
All orchard crops.....	\$140,867,347	216,083,695	1.8	100
Apples.....	83,231,492	147,522,318	15.9	59.1
Peaches and nectarines.....	28,781,078	35,470,276	133.0	20.4
Pears.....	7,910,600	8,840,733	33.1	5.6
Plums and prunes.....	10,299,495	15,480,170	76.6	7.3
Cherries.....	7,231,160	4,326,099	43.6	5.1
Apricots.....	2,884,119	1,150,263	57.1	2.0
Quinces.....	517,243	428,672	.....	0.3
				100.0

sections of the country, but the South Atlantic States are the heaviest producers, having in 1909 a crop worth \$3,565,529, or about one-fifth of the total value of the strawberry crop of the Union, on about one-fourth of the total acreage devoted to that crop. Taking the country over strawberries were produced in 1909 on about one-half of the land devoted to small fruits and represented about three-fourths of their total value. The production of blackberries is widely distributed, but the country's supply of currants, raspberries and gooseberries comes mainly from the North and West. Massachusetts, New Jersey and Wisconsin produce most of our cranberries. The increase of value of small fruits is not given for the different crops separately, but as a whole the berries showed an increase of 19.8 per cent of value with a decrease of 7.9 per cent in total production.

Orchard Fruits

The 1909 census shows a falling off in the number of trees of each kind of fruit since the census of 1899, but the total production had increased slightly during that time and the total value of the crop had increased 68.2 per cent. This last figure represented 2.6 per cent of the total value of all farm crops. The production of fruit is a business in every state of the Union, but the trade looks to California and New York for about 25 per cent of its domestic orchard fruits. Apples are the most important of our orchard fruit, their value in 1909 being 59.1 per cent of the total for all orchard fruits, or about 4.5 per cent of the total value for all crops. Although apple production is widely distributed throughout the United States, New York leads with 15.6 per cent of the total value of the crop, her nearest rival being Pennsylvania with about two-fifths of that amount. Peaches are grown more or less in all states, but California supplies 14.3 per cent of the trade, followed by Georgia and New York, each supplying about 7 per cent. Three-eighths of the supply of pears comes from California and New York, the remainder coming fairly uniformly from all sections. Of our plums and prunes about four-fifths of the total crop comes from the Pacific States (mainly California and Oregon), although the section has only about two-fifths of the

total number of these fruit trees. In the production of cherries California, Indiana, Michigan and Ohio lead the country, but in area devoted to this crop the order of most importance is Ohio, Illinois, Indiana, Michigan and California, 98 per cent of our apricots come from California, with a sprinkling of trees in a few other states. The quince crop can scarcely be considered commercially, a few home trees being found in nearly all states, their small surplus being ample for the local markets.

The Production of Grapes

Our grape crop has had a picturesque history since the first vain attempts in colonial days. Ohio and Missouri have in turn led the other states in production, but today 63 per cent of our crop comes from California, New York and Michigan. Practically all of our "European" grapes are produced in California, whereas New York and Michigan can produce only native American grapes of the Concord type. The grape crop for 1909 was valued at \$22,027,961—an increase of 57.1 per cent over the value in 1899. The total production in 1909 was 2,571,065,205 pounds.

Tropical Fruits

The total value of the tropical and sub-tropical fruits trebled in the ten years between the twelfth and the thirteenth census figures. The production of citrus fruits alone increased 231.3 per cent. Much the greater part of the tropical and sub-tropical fruit produced in the United States is grown in California and Florida, the former producing 67.8 per cent and Florida 28.7 per cent of the total valuation. Of the oranges nearly three-fourths are produced in California, most of the remainder coming from Florida. Nearly the entire domestic supply of lemons comes from California. Although California produces a few grape fruits, the dealers receive nearly the entire supply from Florida. No other class of fruit has increased in production and popularity in the past decade

as has the grapefruit or pomelo. The other citrus fruits are unimportant; these are limes, tangerines and kumquats, chiefly from Florida, and mandarines from Louisiana. The production of figs is widely distributed throughout the Southern states, although California leads with two-fifths of the crop. Arizona and California control the domestic supply of olives—a crop which has trebled in the last decade. Florida is the only source of supply within the United States for pineapples, bananas, avocado pears and mangoes. The guavas are known only in California and Florida, and loquats only in the former. The native supply of pomegranates and dates comes from several of the Southern and Southwestern States. The Japanese persimmon is produced only in California, Florida and Texas.

Seasons for Fruits

In general the season for apple selling may be told by the following table (1912-13):

TABLE XI—SEASON FOR APPLES—PER CENT OF SALES BY MONTHS

Month	Boston	Cincinnati	San Francisco
July.....	0.7%	1.2%	2.1%
August.....	3.3	3.3	10.4
September.....	6.2	8.9	19.5
October.....	31.7	23.8	44.2
November.....	32.8	23.6	12.9
December.....	12.0	16.4	2.4
January.....	3.9	2.7	1.0
February.....	3.8	4.4	1.6
March.....	3.5	6.9	0.6
April.....	1.7	4.7	0.6
May.....	1.3	1.7	0.5
June.....	0.1	0.4	2.2
	100.0	100.0	100.0

The amounts of apples handled by different markets may be estimated by the following examples (1912-13): Boston, Massachusetts, 785,663 barrels; Cincinnati, Ohio, 309,158; St. Louis, Missouri, 295,996; Louisville, Kentucky, 157,101, and San Francisco, California, 111,601 barrels.

The orange is a fruit which has a more even distribution throughout the year than has the apple. A glance at the following table will show the distribution according to months:

TABLE XII—SEASON FOR ORANGES—PER CENT OF SALES BY MONTHS (1912-13)

Month	Boston	Cincinnati	New York
July.....	1.5%	.....	4.5%
August.....	.....	2.0	3.5
September.....	6.2%	0.9	2.3
October.....	1.4	1.1	4.8
November.....	13.8	6.2	6.8
December.....	31.3	29.3	12.5
January.....	17.7	11.1	9.8
February.....	18.2	15.7	12.5
March.....	13.0	13.8	17.4
April.....	2.8	8.2	12.0
May.....	1.1	6.2	12.9
June.....	0.7	4.0	8.0
	100.0	100.0	100.0

TABLE XIII—TROPICAL AND SUB-TROPICAL FRUITS IN THE UNITED STATES—1909

	Total value in 1909	Production in 1909	Increase of production over 1899
<i>Non-citrus fruits</i>			
Oranges.....	\$ 803,810	35,060,395 pounds	178.3%
Pineapples.....	731,090	78,654 crates	672.6%
Olives.....	404,574	16,495,493 pounds	220.6%
Bananas.....	5,661	10,060 bunches	Not given
Avocado pears.....	10,100	4,920 crates	Not given
Guavas.....	11,428	354,062 pounds	Not given
Mangoes.....	5,739	5,278 pounds	Not given
Persimmons (dapp).....	9,087	6,723 bushels	148.1%
Loquats.....	5,880	4,511 boxes	Not given
Pomegranates.....	4,203	132,825 pounds	Not given
Dates.....	533	9,947 pounds	Not given
<i>Citrus fruits</i>			
Oranges.....	17,566,464	19,487,184 boxes	217.0%
Lemons.....	2,993,738	2,770,313 boxes	215.9%
Grapefruit.....	2,060,610	1,389,250 boxes	3738.7%
Limes.....	12,478	11,318 boxes	-50.0%
Tangerines.....	68,270	38,752 boxes	Not given
Mandarines.....	6,553	3,896 boxes	Not given
Kumquats.....	2,826	1,112 boxes	Not given

In general the season of the greatest movement of fruits is (varying with locality): Pears, August to October; peaches, June to September; plums and prunes, September to October; cherries, June to July; grapes, August to November; strawberries, March to July; raspberries, blackberries and currants, June to August; cranberries, September to October; pineapples, May to June; oranges (Louisiana), October to February; oranges (California), November to March, and oranges (Florida), December to March.

Value of Fruits

It is a matter of painful knowledge to everyone that the production of foodstuffs has not kept pace with the demand, the result being increased prices. But there is a wide variation in the rate of increase of value of the different farm products, and this exceeds in nearly all cases the rate of increase in the population.

TABLE XIII—PRICES OF FARM PRODUCE

Crop—Unit	Average Value Per Unit		Increase in Pro- duction
	1909	1899	
All crops...	...	...	66.6
All cereals...	...	...	76.5
Hay & forage, ton	\$8.45	\$6.11	\$2.34
Potatoes, bu.	0.42	0.35	0.07
Small fruits, quart	0.07	0.051	0.016
Orchard fruits, bu.	0.65	0.39	0.26
Nuts, lb.	0.07	0.01	0.03
Population	...	...	21.0

Fruit An Antedote for Booze

In the December American Magazine Henry Detmers writes a little article entitled, "A New Cure for Drink." Mr. Detmers says that he has been in the saloon business for twenty years. He is not a drinker himself and none of his sons drink. Out of his experience he recommends the following cure for the liquor habit: I found early in my experience that as a general rule—there are exceptions, of course—a regular consumer of fruit was not a very good customer in my business. On the other hand, a typical "booze fighter" seldom touches fruit. I always kept some apples behind the bar for my own use, and I often experimentally offered one to a "star customer," who almost invariably refused. The more I looked into this matter the more firmly I became convinced that these two habits clash. Not caring to have my boys acquire the one, I inoculated them with the other, and I have found that the fruit-eating habit early acquired acts as a perfect antidote to the liquor habit.

I mention apples especially because they are something like bread, one never tires of them, which is more than can be said of peaches, pears and oranges. And apples, thanks to cold storage, can be had every day of the school year. Why shouldn't the apple

habit be cultivated in the public schools at public expense? School trustees could advertise for bids to supply the school. Then by means of a push-the-button contrivance placed at the boys' and girls' exits, each child could get his apple as he marched out to play at recess time. Two apples a day would do the work. Children have a veritable craving for fruit.

Please understand I have no ax to grind. I do not own a single apple tree. I have never claimed to have discovered that fruit juices act as a liquor antidote, although I have talked it for twenty-five years. Some three years ago an article appeared which claimed a Nebraska physician as the discoverer of the theory. The good doctor and I will never quarrel over it. He can have the glory. I do not need it. I am only too glad to see that my views have gained some scientific backing.

If you remove the desire for drink, the liquor question will solve itself, and while poverty may not be banished, the general welfare of the people will be much improved, and even if my scheme is never adopted, I will feel a thousand times repaid for my pains if I can only convince the mothers of our country, those who have the means to do so, that to implant the fruit habit in their children is the best assurance for a temperate life.

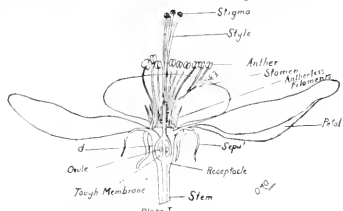
The Development of the Apple from the Flower

By O. M. Osborne, Head of Horticultural Department, State Normal School, Lewiston, Idaho

THE development of the apple from the flower is a very complex biological process. The study of this development has been entirely limited in the past to the field of botany. It is now, however, demanding a close and careful study from all of the horticulturists throughout the world, for it has been found that the size and shape of the fruit, the yield per acre and the time for spraying are all dependent upon environmental conditions during blossoming time that are to a great extent under the control of man. To understand these environmental conditions, let us begin with the flower itself. In plate I is a longitudinal section of a fully opened blossom. If each part is carefully studied it will be found that every one has an important part to play in the formation and development of the fruit. Although not constituting any part of the fruit and although dropping off within a few days, the beautiful white and pink petals serve as an attraction for the honey bees which visit the flower to obtain the nectar from the nectar glands. The nectar glands are not shown in this cut, but they lie at the base of the petals on the inner side. After nectar has undergone a partial digestion inside the bee it becomes honey.

While climbing about the flower to reach the nectar the bee brushes against the stamens or the male parts of the flower. From the little sac-like enlargements or anthers at the top of the stamens it receives a deposit of a

powdery substance called pollen (the fecundating cells). You are likely familiar with the sight of a bee laden with pollen. If the little winged creature is closely examined it will be found that it carries the pollen in little collecting baskets formed of stiff hairs on the tibia of each hind leg. Under a



low-power hand lens it can be seen that the pollen catches onto other parts of the bee's body. Now when the bee rises to fly to a second flower (and it visits only one kind of a flower on a single trip) it may brush off a little pollen on the top of the stigma of the first flower, but since the stigma is raised above the stamens, as shown in the accompanying diagram, the chances are not as great as when the bee alights on a second flower. When it alights on the second flower it is almost certain to brush off a little pollen upon it, due to the stigma being situated above the anthers, as shown in the diagram. The pollen so deposited adheres readily on account of a sticky substance upon the stigma. Hence the flower invites

through its friend, the bee, cross-pollination, and aims to prevent self-pollination by having the stigmas located far above the anthers, as before mentioned. Without the aid of the bees but very little, if any, pollen would ever reach the stigma, for the pollen of the apple is a trifle sticky and, unlike that of the corn tassel, ragweed and several other familiar plants which are powdery, it cannot be distributed by the wind.

After the pollen has been deposited upon the stigma each individual grain begins to expand, due to the food and the stimulus present in the sticky sugary substance on the stigma. Soon each grain sends out a tube called a pollen tube, which penetrates the top of the stigma and grows down through the style to the ovary, where it reaches the ovules shown in the diagram. It here penetrates a very minute opening at the apex of the ovule, called the micropyle, and transfers a male nucleus into the egg cell within the ovule. The male sexual nucleus there unites with the female nucleus of the egg cell and completes the process of fertilization. From this union develops a cell containing protoplasm, the nitrogenous living substance of which the most rapidly-growing parts of plants are mainly composed. Each little ovule in which this pollination took place gradually develops into an apple seed. The different stages of this seed development are shown in the series of plates Nos. I, III, V and VI.

Denney & Company

DISTRIBUTORS

Apples, Peaches, Pears, Plums, Prunes

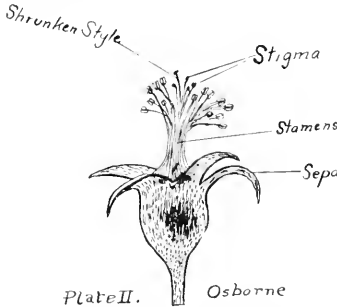
Before making arrangements for this season's business get acquainted with our record and manner of handling Northwestern Fruits. Several successful seasons make it worth your time to investigate our methods. We are no experimenters and have shown our ability to dispose of our shipments on f.o.b. orders.

Represented In All Leading Markets
Main Office, Chicago, Illinois

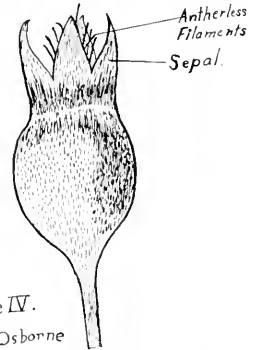
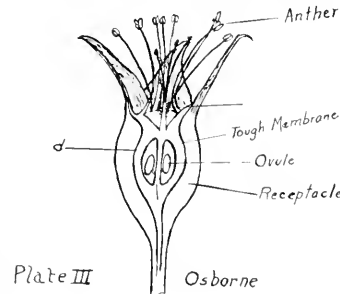
By experimentation extending through a number of years it has been found that if many of the ovules in the apple flower fail to become fertilized (which of course results in undeveloped seeds) that the apple will either lack size or symmetry, or both. Since this condi-

tion is true the fruitgrower should endeavor to furnish conditions which will cause every flower which is to bear fruit to become thoroughly fertilized. To bring about good fertilization, thorough pollination is absolutely necessary. What does this process of pollination mean to the fruitgrower? It means that it is a potent factor, first, in the quantity of production and, second, in the size and shape of the fruit. It is a process in which the flowers and the bees co-operate for each others' good, a process which is often termed symbiosis. It is a process where a member of the plant kingdom has modified its structure for the purpose of reaping a benefit from a member of the animal kingdom (in this case the honey bee) as a pollen distributor and has offered the sweet nectar as a reward. Since the pollination of the apple flowers is performed almost solely by the honey bee it behooves the fruitgrower to have bees in abundance in his orchard. It can only be determined experimentally whether or not the number of bees existing in an orchard is sufficient. The experiment may be performed by the fruitgrower by placing a hive of bees at one end or in one corner of a large orchard and then observing the amount and shape of the fruit set. This method of determining whether bees are in sufficient abundance is of course expensive, for any lack of them results in a shortening of the fruit crop. Hence it is well to

insure against the possibility of loss by keeping a few hives of bees distributed through the orchard. Bees not only will often increase the quality and quantity of the fruit but incidentally



tion is true the fruitgrower should endeavor to furnish conditions which will cause every flower which is to bear fruit to become thoroughly fertilized. To bring about good fertilization, thorough pollination is absolutely necessary. What does this process of pollination mean to the fruitgrower? It means that it is a potent factor, first, in the quantity of production and, second, in the size and shape of the fruit. It is a process in which the flowers and the bees co-operate for each others' good, a process which is often termed symbiosis. It is a process where a



will furnish the fruitgrower with wax for grafting and with honey for the home.

While bees are necessary in every orchard to carry on the work of pollination, successful pollination can only occur where the different varieties are set out with reference to the time of blossoming. Only certain varieties of apples will pollinize well together. It is therefore obvious that their time of blossoming must be the same. In order to produce fruit not only should the time of blossoming be

NOT AN EXPERIMENT

The Cutler Fruit Grader

Simple, durable, accurate and tested by experience



A double-capacity CUTLER GRADER as it now stands in the packing house of the Hood River Apple and Storage Company, after handling over 40,000 boxes last season. Read what they say below.

We ask you as businesslike fruit growers to read and weigh well every word of this advertisement. We not only think the CUTLER GRADER will save you money, but we know it will, because the records of growers using this machine last year prove that this saving ranges between 5 and 7 cents per box. Many of our customers saved the cost of their machines several times over the first season. We not only think it will run successfully without breakdown, but we know it will, because of the experience behind us. A small wrench and a screwdriver are all the tools you need. There are no complicated parts to be repaired while your men stand idle, no springs to weaken, no vibrating parts to jar loose.

Our principle is correct for that, round or long varieties. Every apple is measured check to check. The accurate sizing almost doubles the output of the packer as proved by a season's averages. Again no guess about this. The fruit is handled gently, no violent action with liability of stem punctures or breakage of stems when handling pears. The CUTLER GRADER will handle a large output in a small space, and two grades at once, even with the smallest model. The carrier of this machine could size and deliver over 1500 boxes a day, but the working capacity of any machine is limited to the volume that can be packed at the bins. This machine has a greater working capacity, size for size, than any other machine on the market. This is chiefly because of the ability to control the delivery of the fruit into the bins, allowing all the packers to get to the fruit even when the variety runs principally to two or three sizes. A machine without this delivery control runs a variety of this kind into a few bins, leaving the other bins useless, cutting down the number of packers that can be used. It takes but a moment's adjustment of the CUTLER GRADER to spread these crowding sizes into adjacent bins. Our small model is admirably suited for the individual grower. It handles two grades (a very necessary feature), is only 16 feet by 7 feet, requires less than 1/2 horsepower, and can be enlarged later by addition of sections.

RESULTS—NOT THEORIES

Note what a few of our many satisfied customers write us
AFTER A FULL SEASON'S TRIAL

Hood River, June 29, 1914.
Cutler Fruit Grading Machine Co., Hood River, Oregon.

Gentlemen: Replying to your further inquiry in regard to the grading machine which we bought from you last year, we are pleased to state that it was a splendid success. We experienced no trouble in operating the machine and the exact records of costs which we have kept for several years show your machine saved 5 cents per box. We handled nearly 10,000 boxes in a 30x40 tent, and realize that without your machine to move the fruit quickly we undoubtedly would have lost heavily from bad picking weather. Your method of sorting the fruit, where the sorter inspects each apple as he places it in the carrier, proved very satisfactory to us, and we believe it to be one of the strongest features of your machine where accurate sorting is desired. The machine, we believe, paid for itself several times over the first season and we wish you every success. Yours truly, DICKERSON & PECK, (signed) W. B. Dickerson.

Hood River, Oregon, May 28, 1914.
Cutler Fruit Grading Machine Co., Hood River, Oregon.

Dear Sirs: Replying to your inquiry, I am pleased to state that the machine which you installed in my packing house last fall saved me from 6 to 7 cents per box, and made it possible to handle a much greater quantity of fruit in the packing room than we could in previous years. The two regular packers whom I employed averaged 121 boxes each in 10 hours through the entire season. These same packers, working for me the previous year, did not average over 65 boxes each per day. The machine paid for itself several times over in the one season. Very truly yours, (signed) W. E. SHERMAN, Hood River, Oregon.

May 28, 1914.
Cutler Fruit Grading Machine Co., Hood River, Oregon.
Dear Sirs: We used one of your double capacity Grading Machines last season from October 1st to January 1th, without any loss of time, due to the machine, and packed out over 1000 boxes. We found that night men sorting and feeding into the machine brought our daily output up to an average of 500 boxes per day, when running full on-w. We believe your machine to be superior to the other makes that we have seen or used. Yours very truly, (signed) THE HOOD RIVER APPLE & STORAGE CO., Per M. M. Hill.

Demand is active and our output is limited, so write before it is too late to

The Cutler Fruit Grading Machine Co., Hood River, Oregon

BETTER FRUIT

HOOD RIVER, OREGON

Official Organ of The Northwest Fruit Growers' Association
 A Monthly Illustrated Magazine Published in the
 Interest of Modern Fruit Growing and Marketing
 All Communications Should Be Addressed and Remittances
 Made Payable to

Better Fruit Publishing Company

E. H. SHEPARD, Editor and Publisher
 H. E. VAN DEMAN, Contributing Editor
 STATE ASSOCIATE EDITORS

OREGON

A. B. Cordley, Entomologist.....Corvallis
 C. J. Lewis, Horticulturist.....Corvallis
 P. J. O'Gara, Pathologist and Entomologist.....Medford

WASHINGTON

A. L. Melander, Entomologist.....Pullman
 O. M. Morris, Horticulturist.....Pullman

COLORADO

C. P. Gillette, Director and Entomologist.....Fort Collins
 E. B. House, Chief of Department of Civil and Irrigation
 Engineering, State Agricultural College.....Fort Collins
 E. P. Taylor, Horticulturist.....Grand Junction

IDAHO

W. H. Wicks, Horticulturist.....Moscow
 W. S. Thurber, Horticulturist.....Lewiston

UTAH

Leon D. Ball, Director and Entomologist.....Logan
 Dr. E. D. Batchelor, Horticulturist.....Logan

MONTANA

O. B. Whipple, Horticulturist.....Bozeman

CALIFORNIA

C. W. Woodworth, Entomologist.....Berkeley
 W. H. Volk, Entomologist.....Watsonville

BRITISH COLUMBIA

R. M. Winslow, Provincial Horticulturist.....Victoria

SUBSCRIPTION PRICE:

In the United States, \$1.00 per year in advance
 Canada and foreign, including postage, \$1.50

ADVERTISING RATES ON APPLICATION

Entered as second-class matter December 27, 1906, at the
 Postoffice at Hood River, Oregon, under Act
 of Congress of March 3, 1879.

California State Fruitgrowers' Convention

By E. H. Shepard.

THIS convention was held at Davis, California, June 1st to 6th, and was the largest and most enthusiastic convention of fruitgrowers I have ever attended. It was held on the Experiment Station Farm at Davis, consisting of 720 acres, which is operated in connection with the University of California. About 200 students are taking courses at the Experiment Farm and are engaged in practical work of general farming of all kinds, that is, the students attend the courses and do the actual work on the farm, and consequently get both the scientific and practical side of the work at the same time. The program was arranged by Professor A. J. Cooke, State Horticultural Commissioner of the State of California. The arrangement of the program and the place of meeting was original and new. Every other fruit convention I have attended has been a continued series of lectures all in one room, covering a period of three days or less. This meeting lasted a week. At every hour in the day there were seven lectures, addresses or talks being given on different subjects, so that every fruitgrower could pick out the particular subjects in which he was most interested.

Among the principal kinds of fruit that were covered were prunes, peaches, apples, plums, pears, cherries, grapes, oranges, lemons and olives. However, addresses were delivered in reference to the production of every kind of fruit that is grown in the State of California. In addition to this there were splendid addresses on the differ-

ent problems connected with the orchard business, such as control of the codling moth, aphid, red spider, San Jose scale and other insects and pests. A series of addresses were also given on pathological troubles and also a series of lectures on other important matters in connection with the fruit industry, such as pollination, cultivation, pruning, spraying, inter-cropping, wine making, grape culture, fertilization, co-operative farm credits, frost damage, decay of fruit in storage and in transit and other subjects too numerous to mention.

The plan of holding the convention at the Experimental Farm was certainly a success and I believe it would be an excellent idea if state horticultural conventions could be held at agricultural colleges during the vacation periods in the summer or winter. The agricultural colleges furnish just the kind of opportunity that is needed. The various class or lecture rooms could be used for addresses and discussions on different topics, so the prune grower would not be compelled to listen to the talks on apples, in which he is not interested. Such an arrangement would overcome what to me seems the most objectionable feature in the usual arrangement of programs. It would enable the grower to select the subject in which he was most interested and at the same time during every minute of attendance enable him to listen to the subjects or discussions on matters of practical value instead of compelling him to listen to a discussion on some kind of fruit or some matter in which he was not interested. There is nothing that makes a grower tired more quickly than to listen to a long address on something in which he has no particular interest while waiting to hear something else.

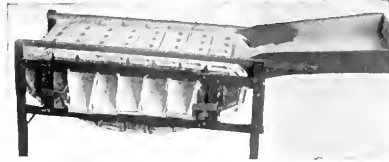
The California idea of having a recess of one-half hour in the morning and afternoon gave growers a splendid opportunity for perhaps what is one of the most important parts of the meeting,—the individual discussions with each other about their own practical experiences. A part of the afternoon could be devoted to some general subject in the auditorium in which practically all fruitgrowers would be interested, such as an address on the marketing problem, association work or co-operation and financing. The evening addresses could be broader and

consist of a general course of lectures, and could be made entertaining and interesting for the general public as well by having stereopticon lectures on subjects that would be instructive and interesting to all people engaged in farming or living in the country. Such subjects as good roads, rural life, country schools, farm credits, etc., could be discussed.

The ideas I have suggested in this article are not at all original on my part, but are the ideas as carried out in the California Fruitgrowers' Convention, which was most successful and the largest that has ever been held in that state. Over 1,000 fruitgrowers attended this meeting, although it was held at a time when many were engaged in harvesting strawberries, cherries, apricots and peaches.

California is a very large state, in fact so large you could place New York, Ohio, Pennsylvania, Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, Delaware and New Jersey on the map of California and still have space left. The state is very long, being about 800 miles in length, so therefore the summer meeting is generally held in the northern part of the state and the winter meeting in the southern part of the state. The idea of holding the convention at the Experimental Farm, as I have already said, was very practical because, being vacation time, the dormitories were used for guests and bed or room could be secured for fifty cents to one dollar. The large dining room was used and as good a meal as anybody could wish was served for 35 cents. The matter of expense is quite an item with the fruitgrower in attending meetings of this kind, and by holding such a meeting at the colleges the expense while in attendance could be made very much less than in a large city, where fruitgrowers would be compelled to board at a hotel, which would cost considerably more.

In all of our agricultural colleges there are very excellent exhibits and collections of all the different insects, pests and diseases, showing their life history. Arrangements could be made for an hour a day in each of these rooms, in which a number of the professors, assistants and instructors could assemble to explain and instruct the fruitgrower. This is among the most important reasons for suggesting that fruitgrowers' meetings be held at agri-



Before making your final decision regarding the purchase of a fruit sizing machine take the trouble to drop us a post card asking for our catalogue. It will take you only a minute to do this and we are confident the effort will not be wasted. We believe we can show you the most practical fruit sizing machine on the market.


Hundreds of our machines have given efficient service for the past two years.

THE WESTERN FRUIT GRADER AND MFG. COMPANY, Grand Junction Colorado

cultural colleges. It is always more or less difficult to secure speakers for fruitgrowers' conventions on account of the expense in attending, including railroad fare and hotel bills. Usually in the Northwest the speakers are invited to attend and pay their own expenses. In order to secure the ablest speakers, that is the most eminent men in science on diseases and insect pests, I believe in future it is going to be necessary for the fruitgrowers' convention to arrange to reimburse the speakers who address a meeting for their traveling expenses and hotel bills, that is those who attend from outside the state. In all agricultural colleges, in addition to the professors and assistants, there are many instructors and students taking a post-graduate course who could be utilized and, furnish the grower with an invaluable fund of scientific information about the life history and development of many diseases and pests. One other feature in connection with the California Fruitgrowers' Convention which impressed me very forcefully was the meeting of all the state horticultural commissioners. In California each county has a horticultural commissioner. Many states have a county inspector, whose position is similar to the county commissioner in California. This conference was of inestimable value to the fruitgrowers of California. Such a conference should be held in other states at fruitgrowers' conventions. One feature of scientific importance was the meetings of plant pathologists and entomologists. While these were too scientific for the average fruitgrower, still they are of great value to the pathologists and entomologists. Such meetings result in a discussion of many problems which are in the process of solution, each giving his own practical experience and knowledge.

As editor of "Better Fruit" I had the honor to be asked to address the meeting on "The Functions and Problems of the Horticultural Press," and also was requested to give an address on "The Problems of Securing Standardized Apple Packs" and "Fruit Marketing From the Standpoint of the Pacific Northwest." While the program covered practically every field of horticulture endeavor by scientific and practical men, I regret I cannot speak individually of each of the addresses. In fact this would be impossible, for the reason that usually six or seven addresses were taking place at the same time and I was only able to attend one of them; therefore I shall have to limit my remarks, first, to the addresses which I heard and, secondly, to those which were broadest in their significance.

Among some of the most important subjects upon which talks or addresses were given, with discussions following, were "The Practical Enforcement of the California Horticultural Quarantine Law," by H. P. Stabler of Yuba City, Fred Maskew of San Francisco, Wm. Garden of Stockton and Wm. Wood of Los Angeles; "Our Future Labor Supply and Population," by Simon J. Lubin of



**Main Office
and Works**

**Second & Bryant
Streets
San Francisco**

**Branch
Offices**

Portland, Seattle
Los Angeles
Fresno
Salt Lake City

QUALITY

pays; and is not inconsistent with moderate prices when you have the plant, the equipment, the volume of business and the organization.

SERVICE

means: On-time delivery; quick emergency work; liberal help with designs, suggestions and pointers; careful estimates and letters. We know the business from A to Z.

Ask for Samples
and Prices

Ask for Any
Information

FRUIT LABELS

Write to nearest office. Mention this paper

Sacramento, one of the pioneer successful merchants of that city; "Some Things That Prospective Settlers Ought to Know" and "Investment Required for the Satisfactory Income," by Dean Hunt of the University of California; "Pollination of Fruit Blossoms," by Professor A. J. Cooke, State Horticultural Commissioner; "Apple Culture in the Watsonville District," "Pruning the Apple" and "The Cost of Spraying," by Professor W. H. Volek, who is connected with the Department of Agriculture and Horticultural Commissioners, located at Watsonville, the biggest apple-producing section in the state. In Watsonville everybody does as Volek says.

Mr. G. Harold Powell, whom everybody knows, manager of the California Citrus Fruitgrowers' Exchange, which handles 50,000 cars annually, and formerly chief executive in the Department of Horticulture at Washington, D. C., gave a very interesting talk on "The Fundamental Principles in Co-operation as Applied to Agriculture" and "The California Fruitgrowers' Exchange."

One subject that probably created in its various phases more interest than any other was, "How Will California Be Affected by the Passing of the Eight-Hour-a-Day Law." Several addresses were given on this subject under various titles by the following people: Geo. Hecke, Woodland; G. W. Pierce,



LASSELLE'S IMPROVED Evaporator

After 17 years of hard work studying and experimenting we have perfected an evaporator that is a complete success. It can be operated on a wage and labor basis low enough to leave a handsome margin of profit on all fruits and vegetables.

It only takes 12 hours to evaporate Italian prunes; 2 hours for apples; 4 hours for peaches, pears and apricots. It evaporates all fruits in from one-fourth to one-third the time of old style hot air drier and the evaporated fruits are far superior.

By soaking the product in water a few hours before using it can not be distinguished from the fresh fruit. It is absolutely impossible to get ptomaine poison from these goods. It is not a complicated process and can be operated by any intelligent fruit man.

For further information and prices address

BRANCH OFFICE AT ALBANY, OREGON LASSELLE BROS., 207 Clay St., Portland, Ore.

Davis; Mrs. Emily Hoppin, Woodland; Jas. Mills, Willows, and A. W. Morris, Woodland. The convention was unanimously opposed to the eight-hour-a-day law as applying to the fruit industry. It was the consensus of opinion that such a law would mean millions of dol-

lars of loss. The fruit crop matures quickly and ripens rapidly. All over-ripe fruit is practically a loss. It was the consensus of opinion, at the present time under the present labor conditions, that inasmuch as fruitgrowers have extreme difficulty in getting their

crops harvested before they become too ripe that any law that would tend to shorten the present hours would mean an immense loss to the fruit-grower and naturally result in the quantity of fruit being shipped materially lessened, intimately affecting the consuming public and the whole population of the United States by reducing the supply of fresh fruits. Fresh fruits are not only delightful but a wholesome diet, and therefore it would seem the public ought to be interested in opposing anything that would tend to lessen the supply.

The "Control of Pear Scab" was ably discussed by Professor Ralph E. Smith of Berkeley, who also delivered an address on "The Cause and Decay of Fruit in Transit," containing valuable information for the grower.

Professor B. B. Pratt of Berkeley, whom many fruitgrowers of the Northwest will remember, gave a very interesting talk on "Apple Handling and Storage" and "Pre-Cooling and Storage of Pears."

"The Codling Moth and Its Control" came in from a splendid discussion, which was indulged in by Professor A. J. Cooke, G. P. Weldon, formerly of Colorado; Dr. E. D. Ball, director of the Experiment Station of Logan, Utah, and others.

Professor L. R. Jones of Madison, Wisconsin, who is regarded by the world, gave a most instructive lecture

GO EAST NOW

TO

Denver	\$ 55.00
Omaha	60.00
Kansas City	60.00
Chicago	72.50
New York City	108.50

Equally reduced fares to other Eastern cities. Rates to any point furnished on application.

Union Pacific System

Oregon-Washington Railroad & Navigation Co.

O. S. L. — U. P.

LOW ROUND TRIP FARES

Tickets on sale every day to September 30. Final return limit, October 31, 1914. Liberal stop-over privileges.

Superior service, unexcelled dining and sleeping car accommodations, through trains, direct routes, automatic block signals, every requisite for safety and comfort.

For full information, fares, routes, train schedules, etc., call upon any agent of the

O-W-R. & N.



on "International State Relations in Plant-Disease Control."

Professor O. B. Whipple of Bozeman, Montana, formerly connected with the Colorado Experimental Station, gave some interesting information in reference to "Frost Damage in Deciduous Orchards."

Professor C. I. Lewis of the Oregon Agricultural College Experiment Station, whose reputation is becoming national as a horticulturist, gave some very interesting lectures on "Pear Culture in the Northwest," "Irrigation of Deciduous Fruit" and "The Loganberry Industry of Oregon."

Professor C. W. Woodward of Berkeley, California, gave a very interesting exhibition of nozzle action in spraying, showing a nozzle which is used in spraying elm trees in New England for the brown-tail moth and the gypsy moth, and illustrating the action of the M. A. C. nozzle, which originated at the Massachusetts Agricultural College, and throws a stream of spray in the highest elm trees to a height of perhaps 100 feet or more.

Professor U. P. Hedrick, horticulturist, who is conceded to be one of the most eminent horticulturists in the United States, connected with the Experiment Station at Geneva, New York, gave some extremely interesting lectures on "Improvements of Varieties of Fruit by Bud Selection," "Root Stocks for Trees" and "Fertilizer of Fruit Trees."

One of the most entertaining talks was given by Professor A. D. Shamel, Riverside, on "Citrus Observations in Brazil," which was illustrated by stereoptican views. Many years ago a lady of Southern California visited Brazil, and seeing the navel or seedless oranges made arrangements to have the United States government import some of these trees from Brazil. She succeeded in securing two, which she planted in her back yard, although the rest of the trees which were sent to other places died. The variety was named "The Washington Navel Orange." From these two trees all the other navel oranges in California have been propagated, and this orange today is planted more extensively than any other orange and has proved to be the greatest money maker. Professor Shamel's talks were very interesting, as the stereoptican views showed scenes along the entire trip, with views of the orange groves of Brazil. His remarks were very entertaining and made interesting by many conversations with Colonel Roosevelt, who traveled on the same steamer on his exploring trip to South America.

The red spider mites, which are among the most serious pests, were discussed by Professor H. J. Quayle of Berkeley, with instructions as to their control.

Fruitgrowers of California are giving much attention to the economic side of the business, that is, the cost of production. This subject was discussed in various phases by many different speakers, Professor Woodworth giving

A POWER WATER PLANT

FOR IRRIGATING, DRAINING OR PUMPING WATER IN QUANTITY

for household consumption, or for general use about the premises, watering stock, supplying the dairy house, fighting fires, etc., is a valuable asset to any farm or ranch.

A system of this kind is now within the reach of everyone. A MYERS POWER PUMP or WORKING HEAD, (Many Styles) and your gasoline engine (any style), combined produce a power water plant that is unequalled for efficiency and reliability—and the services of an expert are not required to install, cutting cost over the old-time power outfits one-third. If interested in better water facilities write us.

F. E. MYERS & BRO. 120 Orange Street
Ashland, Ohio
Ashland Pump and Hay Tool Works



EFFICIENCY

An organization along broad and liberal lines for a nation wide, safe and sane distribution of Tree and Vine Fruits. Our services are available through our associate members to any and all growers and shippers of fruit.

MEMBERS

Geo. H. Anderson	Newcastle Fruit Co.	Producers Fruit Co.
A. Block Fruit Co.	Penryn Fruit Co.	Schnabel Bros. Co.
Earl Fruit Co.	F. B. McKevitt Co.	Silva & Bergtholdt Co.
Geo. D. Kellogg & Son	Pioneer Fruit Co.	Vacaville Fruit Co.

California Fruit Distributors

CHAS. E. VIRDEN, General Manager
SACRAMENTO, CALIFORNIA

Tillamook County

Beaches and Fishing Streams

Tillamook County Beaches have been aptly called "Nature's Playground." Resorts where the "Call of the Wild" and the Life Outdoors can be fully enjoyed, now open for the Summer Visitor. New hotels, new cottages, new camping grounds.

Season and Week-End Fares

Low round-trip season and week-end fares from various points on S. P. main line and branches.

Double Daily Train Service


Leaves Union Depot daily... 8:55 A.M. "Sea Shore Special," Union Depot... 1:30 P.M.
Leaves East Morrison daily... 9:03 A.M. "Sea Shore Special," E. Morrison... 1:38 P.M.
Parlor Observation Car on "Sea Shore Special" leaving at 1:30 P. M.

Good Fishing in the Salmonberry and Nehalem Rivers

Untripped fishing in the Salmonberry and Nehalem rivers, as well as other Tillamook County streams.

Call for our brand new folder.
"Tillamook County Beaches"

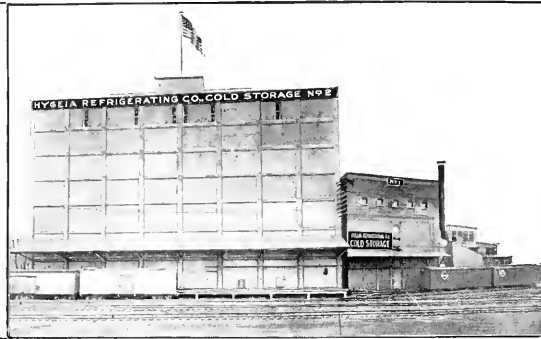
Folders and full information from any S. P. Agent or from
**John M. Scott, General Passenger Agent,
Portland, Oregon**



HYGEIA REFRIGERATING COMPANY

ELMIRA, NEW YORK

CAPACITY
35 CARS PER DAY
300,000 BOXES



EVERY FACILITY
is offered for the successful
storage and marketing of

Boxed Apples

for domestic and
export trade.

- Fireproof Warehouse
- Lowest Insurance Rates
- Four Trunk Line Railroads
- Special Outgoing Storage
in Transit Rates
- Storage rates, etc., quoted
on application

a talk on "Estimation on Quantity of Spray Required Per Tree."

Dr. E. D. Ball gave a very interesting lecture illustrated with stereoscopic views, on "Irrigation and Drainage in Relation to Permanent Horticulture." Many fruitgrowers of the Northwest will remember Dr. Ball, who has addressed many conventions. Dr. Ball is one of the scientific men whose energy will not permit him to drop his research work until he has arrived at a definite conclusion, and when he has he has the fearlessness to give his convictions without fear or favor. This lecture Dr. Ball illustrated with views

showing the damage to orchards by lack of drainage and over irrigation, showing the death of many orchards due to irrigation where alkali was plentiful in the soil.

Mr. C. E. Virden, manager of the California Fruit Distributors, which handles more cars of deciduous fruits than any other concern in California, gave an exceedingly interesting talk upon this subject.

W. S. Ballard, connected with the Department of Horticulture of the United States government, gave one of his characteristic talks on "Control of the Apple Scab and Mildew." Professor

Ballard, in connection with Professor W. H. Volck, succeeded in working out the Iron-sulphide treatment for control of powdery mildew, which was the first remedy that was ever discovered that would control this disease. Many fruitgrowers will remember Mr. Ballard, who is one of the most thorough men connect with the Department of Horticulture of the United States government at the present time. Mr. Ballard is a man who can say much in a very few words, a man who is very careful about what he says, a man who is not afraid to say "I don't know," and a man that you can depend on when he tells you something.

Dean H. E. Van Norman of the Farm School gave a most hearty address of welcome to the convention and is entitled to much credit for the able manner in which he has conducted this practical school of education for the farmers and fruitgrowers of California. Probably no state has a horticultural commission department which is more ably conducted than California, under the direction of Professor A. J. Cooke and his assistants, Mr. Weldon and Mr. Essig, which is supplemented by a county horticultural commissioner in each county of the state.

George C. Roeding, who has probably done more for the fig industry in the State of California than any other man, gave a very interesting discussion on this subject. Mr. Roeding is proprietor of the Fancher Creek Nurseries and has nurseries in several other sections of the state. While Mr. Roeding has made a fortune out of the nursery business, he has been a liberal spender all his life in helping to develop the fruit industry of the State of California.

One of the most original lectures was on the "Compatibility of Spray Mixtures," by G. P. Gray of Berkeley, which was illustrated by a table showing results by combining different spray mixtures, in which he has five classifications: The first showing where better results were obtained by the mixtures; second, where chemical properties were not changed by the mixtures; third, where the mixture was efficient and not injurious; fourth, where it is inefficient and not injurious, and fifth, where dangerous.

While ordinarily subjects discussed by conventions do not make very in-

THE IMPROVED HOOD RIVER BOX NAILING PRESS

Is the best device of its
kind for the money
on the market

The fact that Hood River growers by the hundreds use them, is our best testimonial. And those who have had experience with the press are satisfied; for by the elimination of box bruises it has aided in making the Hood River apple famous.

If you are in the market for a Nailing Press, it is to your advantage to investigate the HOOD RIVER PRESS and get our prices.

W. G. SNOW
Hood River, Oregon

Weight Governs Price as well as Durability of Fence

NET WEIGHT PER 100 YARDS	21 BARS	58 BARS	HOOD RIVER
5	20 BARS	53 BARS	HOOD RIVER
4 1/2	19 BARS	48 BARS	HOOD RIVER
4 1/4	18 BARS	43 BARS	HOOD RIVER
4	17 BARS	38 BARS	HOOD RIVER
3 3/4	16 BARS	35 BARS	HOOD RIVER
3 1/2	15 BARS	32 BARS	HOOD RIVER
3 1/4	14 BARS	29 BARS	HOOD RIVER
3 1/2	13 BARS	24 BARS	HOOD RIVER
3	12 BARS	21 BARS	HOOD RIVER
2 3/4	11 BARS	18 BARS	HOOD RIVER
2 1/2	10 BARS	15 BARS	HOOD RIVER
2 1/4	9 BARS	12 BARS	HOOD RIVER
2 1/2	8 BARS	9 BARS	HOOD RIVER
2 1/4	7 BARS	6 BARS	HOOD RIVER
2 1/2	6 BARS	3 BARS	HOOD RIVER

We give you more pounds of high-grade galvanized steel per rod for your money than any of the catalogue houses in the country.

Our fence is manufactured by the American Steel & Wire Company. We sell direct to the consumer.

We can make shipment immediately upon receipt of your order. Our catalogue gives full description. Send for it today. It's free.

We Contract to Erect Fence

National Fence Company

181 Columbia St., PORTLAND, ORE.
(Oregon Electric Depot Building)

Rolls 10 and 20 Rods Each, Stays 6 Inches

OUR SPECIALTIES

BOX APPLES and the PEACHES three big PEARS RUNES

We handle more box apples than any concern in Ohio and want to hear from every grower and shipper who will have either large or small lots to offer.

Let us hear from you at once.

I. N. PRICE & CO., CINCINNATI, OHIO

REFERENCES: ANY BANK OR CREDIT AGENCY

Interesting reading matter, I feel this convention and the subjects handled are so valuable in affording suggestions for other conventions that I feel justified in treating this subject in rather a lengthy way, and I confess I have taken particular interest in doing so because I graduated from the University of California in 1880, and the great fruit industry of the State of California is largely responsible to the University Experiment Station for the advice and instructions it has given. I trust the many very interesting speakers whose addresses or names have not been mentioned in this article, as our space is limited, will kindly pardon me for the omission, because I have confined myself principally to the kinds of fruit which are grown throughout the United States in general and the Northwest in particular, where "Better Fruit" has the largest part of its circulation. I beg the pardon of all the speakers upon citrus subjects for lack of mention of them individually, and in explanation would say that such subjects would only be interesting in California, where the citrus fruits can be grown; and, furthermore, I hardly feel able to make any comment on addresses on citrus fruits, for the reason I have no knowledge of this branch of horticulture. In conclusion I want to say that the canned-fruit output of California is the largest industry of the state.

Obituary

Clarence M. Stark passed to his reward on Saturday, May 30, at his home in Louisiana, Missouri. Born in 1855, Mr. Stark spent practically his entire life in orchard and nursery work, and for many years prior to 1903, when he retired from active business, he was the president of Stark Bro's Nurseries and Orchards Company of Louisiana, Missouri, which business owes the greater part of its success and enlargement to his sagacious management. It was he who named and gave to the world the Delicious apple, and the introduction of many other valuable varieties is due to his untiring efforts. In his demise horticulture has lost a willing worker, the world an able pomologist, and the Stark family a tender, loving father and brother.

The Biggest Apple Dealers in California

WRITE OR WIRE US FOR DETAILED
MARKET INFORMATION

A. LEVY & J. ZENTNER CO.

Davis Street (from Washington to Oregon Sts.) San Francisco, California

The Pride of Oregon Apple Sizer

Watch this space in the next issue (August) of "Better Fruit" for the most simple and economical sizer that has been put on the market. It will size apples in eight sizes and

Absolutely Without Bruising

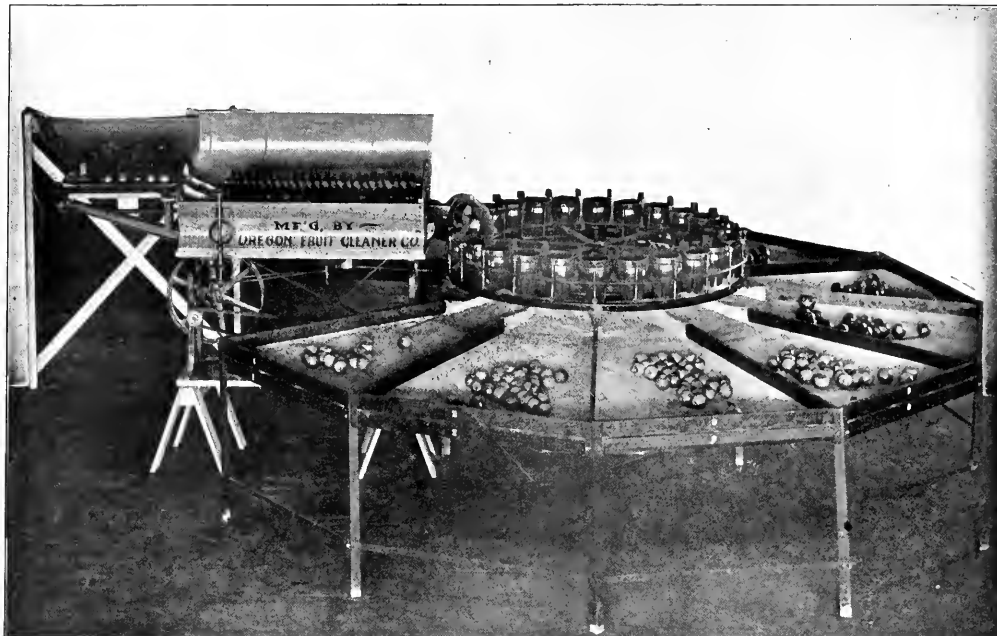
Will last a lifetime. Nothing to break and no complicated machinery.

For particulars address

The Pride of Oregon Apple Sizer

J. R. NUNAMAKER & CO.

HOOD RIVER, OREGON



OREGON COMBINATION FRUIT CLEANER AND GRADER

The machine that puts the profit into the fruit business. For descriptive matter and testimonials address
OREGON FRUIT CLEANER CO., THE DALLES, ORE., U.S.A.

The Setting and Dropping of Fruit

[Circular of New York Agricultural Experiment Station]

ONE of the discouragements in fruit growing is the uncertainty which attends the formation and development of fruit buds. Failure to set fruit, even though the trees bear an abundance of blossoms, the dropping of immature fruits, the biennial bearing habit of certain apples, and unfavorable weather at blooming time are common and seemingly unpreventable drawbacks to profitable fruit growing. The biblical injunction "to dig about and dung the trees" may be obeyed both literally and figuratively, and yet the trees may fail to blossom, or to set a crop, or the fruit drops, or wind, rain, cold or frost may destroy the embryonic fruits. Indeed, seemingly, the better the culture, the greater the retrogression in sexual reproduction, and the forces set in motion by the cultivator in no way nullify the effects of bad weather. Roughly, these problems fall under two heads: First, those having to do with the formation of fruit buds; second, those having to do with the development of the buds.

Can the fruit grower influence the formation of buds? Though he cannot wholly control the formation of buds, he can at least greatly influence their formation. We may lay down as the first principle having to do with the formation of fruit buds one founded on

the experience of fruit growers with practically every fruit: that plants develop fruit buds only where there is a store of food materials in twigs and branches. Another statement to much the same effect is that plants will not form fruit buds when the food material is being largely used in the production of new wood and new leaves. Many facts and horticultural practices substantiate the statements just made. Thus, trees unduly luxuriant in growth do not set fruit; plants without sufficient food for both wood and fruit bearing do not as a rule produce fruit; in warm, damp climates trees and vines grow to great size and with much foliage, but bear little or no fruit; pruning, which is favorable to wood growth, is antagonistic to fruit production. Plants that are producing too much wood and foliage and too little fruit may be subjected to several treatments to induce them to bear fruit.

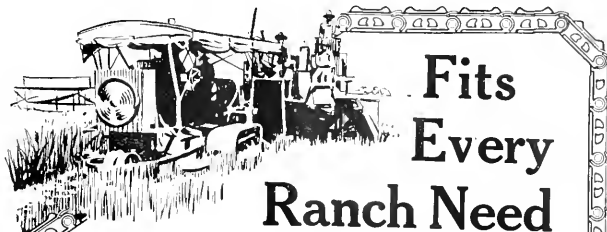
Regulation of the water supply sometimes induces the formation of fruit buds. In the irrigated regions of the West vegetative growth may be stopped by withholding water and the setting of fruit buds thus be materially influenced. It is a matter of common observation everywhere that a dry season is more conducive to the formation of fruit buds for the ensuing season's crop than a

wet one. The water supply in unirrigated regions may be regulated only through drainage, but fortunately drainage may often be made an important means of inducing early fruitfulness and a fruit-bearing habit. Other things being equal, trees on wet, sodden soils do not bear fruit early in life and do not set fruit regularly and in proper quantities. Under such conditions there is insufficient food for either wood or fruit production. The remedy is obvious and the subject needs no further discussion.

Much can be done in securing the proper formation of fruit buds by giving the trees an abundance of light. The outside row in an orchard, where the trees have most light, usually bears the most fruit. It is true that these isolated trees have more food and moisture as well as more light, and because of these two factors, also, many buds set. Yet light must be counted as important, and is to be secured by proper spacing and by developing open-headed, well-pruned trees.

The food supply has much to do with the formation of fruit buds, and probably the most rational procedure under average orchard conditions to induce fruit bearing is to regulate the supply of food. With the widely varying conditions of different orchards, this is not

easily done. It does not appear from any information that we now have that there is a storage of particular food for fruit buds and of other food for wood growth, but rather that stored food is quite as available for one sort of growth as for the other, yet it is generally supposed that the kind of food given plants influences the amount stored, and, consequently, the number of fruit buds formed or the amount of growth made. Briefly, the behavior of foods upon manner of plant growth is supposed to be this: An abundance of food, especially if it contains nitrogen, and if at the same time there be a plentiful supply of water, is most favorable to the formation and growth of cells, hence of wood and leaf growth. If the amount of food be decreased, and more particularly if the nitrogen as compared with the potash and phosphate be decreased, and especially if there be an increase of light and air, wood growth is lessened and the number of fruit buds is materially increased. Sometimes the excess of food and moisture is already in the soil, and the problem then is to reduce the quantities and so bring on fruit-bud formation. The orthodox method of reducing the quantity of plant food and soil moisture is to sow a grain crop in the orchard. The trees under such treatment cease to make wood growth and use the assimilated substances in the making of fruit buds. This procedure, it should be said at once, is seldom necessary. The fact that leaf and wood growth and fruit bearing in plants are opposed



Fits Every Ranch Need

HERE is a tractor so powerful it will march right over your steep hills with the biggest harvester made—yet so handy and steady you can use it for all sorts of belt work too, from threshing grain down to the ticklish job of grading seed.

CATERPILLAR

Reg. U.S. Pat. Off.

That's the sort of tractor you need—a general purpose machine—useful to you every day in the year—ready for any work that comes to hand.

Remember the Caterpillar doesn't fag out like horses, right in the midst of harvest. It works 24 hours a day if necessary and costs less to maintain.

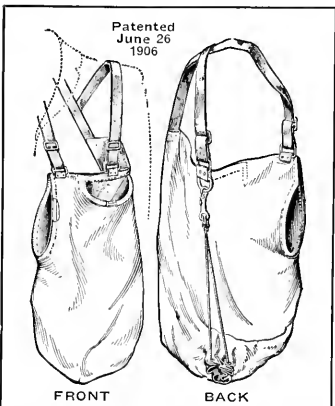
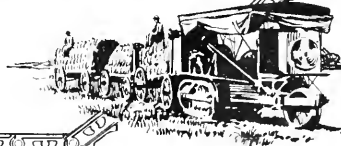
The Caterpillar will do your plowing and summer following without packing any kind of soil—the big tracks distribute the weight. It hauls crops to market, builds roads, saws wood and grinds feed. You need a Caterpillar for a hundred purposes—for the money it will save you.

Write today for Catalog BE 61.

Everything for the power farmer--
harvesters, scrapers and supplies.

The Holt Mfg. Co., Inc.

- Spokane, Wash.
- Portland, Ore.
- San Francisco, Cal.
- New York, N. Y.
- Peoria, Ill.
- Houston, Tex.
- Calgary, Alta.
- Stockton, Cal.
- Los Angeles, Cal.



Patented
June 26
1906

FRONT

BACK

IDEAL FRUIT PICKING BAG

Made of heavy weight duck and so arranged as to equalize the load on both shoulders.

The openings are arranged so both hands can be used in picking, and the drawing is arranged so the fruit can be let out at the bottom in emptying the bag.

The bag can be let down to the bottom of the box before opening the drawing, thus not bruising the fruit.

This is the best and handiest arrangement for picking fruit that has ever been offered. A trial will convince even the most skeptical.

SAMPLE, POSTPAID, \$1.00

AGENTS WANTED

Barker Manufacturing Co.

35 Ambrose St. ROCHESTER, N. Y.

to each other is well recognized by fruit growers; but the knowledge is quite too often wrongly used, exemplifying again that "a little learning is a dangerous thing." Thus, to bring trees into bearing is often the owner's excuse for double-cropping orchards, putting an orchard down to sod and withholding proper cultivation.

Pruning often materially aids in causing the storing of plant food for the formation of fruit buds. One of the general aims of pruning is to regulate the crop of fruit by removing parts of the plant, that those remaining may

store the necessary food. The theory of pruning to cause formation of fruit buds is simple, but the practice is not so simple. The effects of pruning are so varied under different conditions that it is exceedingly difficult to give directions as to its use in influencing the setting of buds. Heading-in may sometimes be used to advantage in pruning for fruit. It consists in cutting back young, unbranching shoots which set few or no fruit buds. Heading-in is a necessity with dwarf trees. Practice differs as to whether the operation should be performed in summer or

TO DESTROY APHIS, THRIPS, ETC.

Without Injury to Foliage

SPRAY WITH

“Black Leaf 40”

SULPHATE OF NICOTINE

“Black Leaf 40” is highly recommended by Experiment Stations and spraying experts throughout the entire United States.

Owing to the large dilution, neither foliage nor fruit is stained.

Also, “Black Leaf 40” is perfectly soluble in water; no clogging of nozzles.

PRICES

10-pound Can **\$12.50**

Makes 1,500 to 2,000 gallons for Pear Thrips, with addition of three per cent distillate oil emulsion; or about 1,000 gallons for Green Aphis, Pear Psylla, Hop Louse, etc., or about 800 gallons for Black Aphis and Woolly Aphis—with addition of three or four pounds of any good laundry soap to each 100 gallons of water.

2-pound Can **\$3.00**

½-pound Can **.85**

If you cannot obtain “Black Leaf 40” from a local dealer, send us P. O. Money Order, and we will ship you by express at the above prices (for the United States), prepaying the expressage to your nearest railroad town in the United States. There is a duty charged on all shipments made into Canada.

The Kentucky Tobacco Product Company

INCORPORATED

Louisville, Kentucky

winter, but it is usually performed in summer and is then spoken of as summer pruning. Heading-in greatly thickens the top, thereby excluding light, and must be practiced very judiciously, or more harm than good is done. Summer pruning is rather commonly used

to influence the formation of fruit buds for the succeeding season. The theory is that by removing a part of the young shoots of the current season, we take from the trees the portions which are making the greatest demands on the plant's nutritive powers and that the

remaining part of the shoots with their buds are enabled to store up greater quantities of reserve food than they otherwise could. This summer heading-in should be done before growth ceases. So much, however, depends upon several varying factors that no fixed rule can be given as to time; thus, much depends upon the fruit, the varieties, soil, climate, weather and the amount of growth. Summer pruning is a weakening process and may permanently injure a tree in our climate. With standard trees it is only of advantage in moderation in eastern North America and as usually practiced more often results in evil than in good. Summer pruning is of more value in the early life of the tree than later on. Summer pruning as a means of inducing fruitfulness is greatly overestimated under American conditions and belongs more properly to the elaborate systems of pruning and training practiced by Europeans.

Continued in next issue

Development of the Apple, Etc.

Continued from page 16

the same but the flowers of any one variety must be capable of either being fertilized by their own pollen or by the pollen of some closely-related variety. We thus have those that are termed self-fertile (fertile to their own pollen) and those that are termed self-sterile (sterile to their own pollen). There are also varieties which are only partially self-sterile. Due perhaps to environmental conditions, the class to which any one variety of apples belongs varies in different localities. Not

ORCHARD YARN

To save a half dozen trees from breaking down under the weight of heavy laden branches would pay for the cost of tying an entire orchard. Two-ply Tarred Orchard Yarn will do the business. The comparative cost of Twine is small. It not only saves the present crop, but the tree is kept safe and in proper shape for future bearing. Now is the time to tie. The promise of a record crop was never better. One-ply Yarn for small trees and light branches; two-ply for large trees and heavy limbs. Put up on 10-lb. spools. About 200 feet per pound in one-ply and 100 feet in the two-ply.

Portland Cordage Company
Originators and Sole Manufacturers
PORTLAND, OREGON

Yakima County Horticultural Union

E. E. SAMSON, Manager

North Yakima, Washington

INDEPENDENT SHIPPERS

OF

Puyallup Red Raspberries and Yakima Apricots
in straight cars, also

Mixed Cars Yakima Fruits

CONSISTING OF

Apricots, Transparent Apples, Peaches,
Tragedys and Early Plums

WRITE OR WIRE US TODAY

6% Farm & City Loans

May be obtained to repay mortgages, remove incumbrances, purchase or improve property. Special privileges; correspondence invited. A. C. General Agency, 767 Gas & Electric Bldg., Denver, Colo., or 440 Phelan Bldg., San Francisco, Calif.

Don't Spend So Much of Your Hard Earned Cash for Oil

Reduce your gasoline bills by equipping your automobile with a **JEWELL SPEEDMAKER**. Uses hot air. Owner agents wanted. Demonstrator at wholesale rate.

GENERAL UTILITIES COMPANY
1009 West 48th Street, Los Angeles, California

only do the environmental conditions represented by climate and soil determine the class to which any variety of apples belongs but they even determine the quantity of pollen produced. Hence it becomes of especial scientific interest to us when we consider that these environmental factors influence the characteristics and behavior of the germ cell of the plant. By writing to your state experiment station you can usually obtain a list of the apples which pollinize well together and of those that blossom at the same time. Such a list becomes very valuable for reference at the time of planting an orchard.

Let us consider the changes in the fertilized flower after the petals have fallen and their relation to orchard spraying. By examining plates Nos.

TRUST PRICES SMASHED!

We've brought the prices on high-grade, modern Plumbing Fixtures down within the reach of every home in the Northwest! We buy only from independent factories in car-load lots—pay spot cash—sell to anyone, anywhere, at **WHOLESALE PRICES!** Thousands of satisfied customers. References, U. S. National Bank, Portland.

Write today for complete Wholesale Price-List.

This \$4.50 Cast Iron White Enamel Porcelain Sink, like picture. Guaranteed first-class. Our price, **\$2.75**



This 30-Gallon Range Boiler, like picture. Absolutely new and first-class. Our price, **\$4.65**



This White Enamel Cast-Iron Bathtub, like picture. Guaranteed absolutely first-class. A \$20 value. Our price **\$14.25**



This High Tank Toilet, like picture, all complete. Absolutely first-class. Sold by trust plumbers for \$13.50. Our price **\$9.35**

SALE PRICES ON PIPE

Make your own plumbing connections. We will sell you any size of new or second-hand Pipe, at greatly reduced prices.

1-inch . . . ft., 3 1/2¢ 3-inch . . . ft., 11¢
 1 1/2-inch . . . ft., 4 1/2¢ 3 1/2-inch . . . ft., 13 1/2¢
 2-inch . . . ft., 6 1/2¢ 4-inch . . . ft., 16¢

Also have on hand 2,000 feet each of 6, 8, 10, 12 and 14-inch Steel Riveted Pipe, for irrigation, at sacrifice. All kinds Fittings and supplies at smashed prices!

Write Now for Complete Price List!

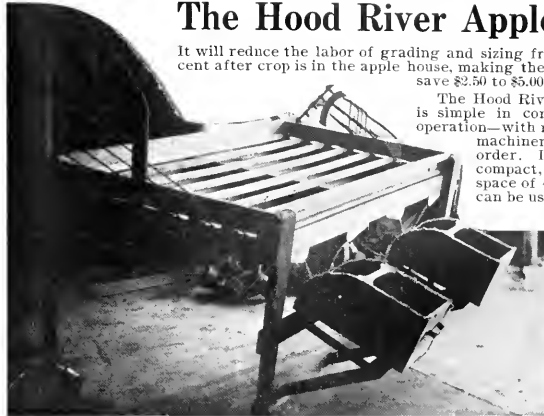
J. SIMON & BRO.
 Front and Grant Streets
PORTLAND, OREGON

The Hood River Apple Sizer

Apple buyers and consumers are demanding standardization and uniformity in the grading and sizing of apples. This work is usually done by hand, costing from five to fifteen cents per box. The apple industry demands economy in every phase of the business. Consequently an apple grower in Hood River has invented

The Hood River Apple Sizer

It will reduce the labor of grading and sizing from 20 to 30 per cent after crop is in the apple house, making the little machine save \$2.50 to \$5.00 per day.



The Hood River Apple Sizer is simple in construction and operation—with no complicated machinery to get out of order. It is small and compact, occupying a space of 4 1/2 x 6 feet so it can be used in any packing house, no matter how small. With extra help it has a capacity of 500 boxes per day and the cost of grading and sizing can be done for 3¢ per box. The price is so low that every grower, no

matter how small, cannot afford to be without it. ANY GROWER WITH A 1,000 BOX CROP CAN SAVE THE COST OF THE MACHINE IN ONE YEAR.

FOR PARTICULARS AND PRICES WRITE TO
J. F. VOLSTORFF, Hood River, Oregon

II and III it will be seen that the changes that are evident in the remainder of the flower are shown in the way of a shrunken style and stigma, in the open and empty anther sacs which contained the pollen and in the somewhat larger receptacle. Now let us examine

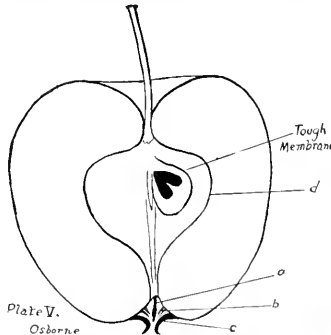


plate No. IV. In this we find that the sepals are turning inward, due to the enlargement of that part of the original flower in plate No. I, termed the receptacle. It is the receptacle of the flower which develops into the edible portion of the apple as shown in plate No. II, and the corresponding parts in plates Nos. V and VI.

Our rules for spraying for the codling moth tell us that the first spraying should take place immediately after the petals fall and that the calyx (the sepals taken together constitute the

H. HARRIS & CO.

Fruit Auctioneers

227 State Street
 Boston, Massachusetts

Established 1847

Frank Moseley
 Frank L. Ripley
 Cutler B. Downer



For Domestic Water Supply and Irrigation

Ask your dealer or write
PHILLIPS HYDRAULIC RAM CO.
 Portland, Oregon



WRITE ME!

Get my new, low, factory price on the famous Galloway Engine and big, big, big FREE catalog. My engines are standard, high quality engines. Made in same from 1 1/4 to 12 H. P. Over 40,000 in use today. All sold on 30 days FREE trial, backed by fire year guarantee and \$25,000 bond. Money back if not satisfied. Investigate! Get the best prices for inferior engines. Save middlemen's profits. Do your own dealer.

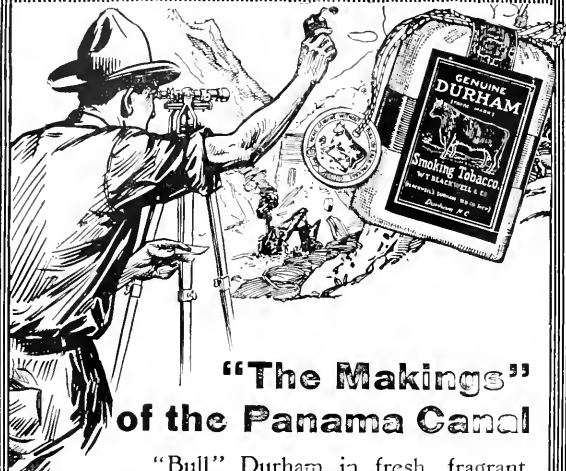
BUY DIRECT FROM THE MANUFACTURER and Save \$50 to \$300 on Gasoline Engines

That come about as near keeping your money at home as any way you can think of. Write me before you buy.

FREE Service Department that will help you get out and line all the best and also engine you need for your use without cost to you. Let me send you my New 1914 Special Offer. Just write for my catalog and see, low prices today.

Address: Wm. Galloway, Pres., **WM. GALLOWAY CO.**
 1055 Galloway Station, WATERLOO, IOWA





"The Makings" of the Panama Canal

"Bull" Durham in fresh, fragrant, hand-made cigarettes has proved a constant source of comfort and inspiration to the army of tireless workers in the Canal zone. Keen-eyed surveyors, resourceful engineers, sturdy section-bosses, bronzed army officers, all "roll their own" in the stress of work under a tropic sun, or in the balmy, restful evenings under the stars in Panama City and Colon.

Whenever men go forth to do men's work in the rough corners of the world, most of the luxuries of civilization they leave behind them; but one luxury, the most satisfying of all, they carry with them—

GENUINE "BULL" DURHAM SMOKING TOBACCO

(Enough for forty hand-made cigarettes in each 5c sack.)

From Panama to Klondike, from Broadway to Manila, pure, ripe, mellow, "Bull" Durham tobacco is smoked by more millions of men than all other high-grade tobaccos combined. The fragrant aroma and satisfying flavor of "Bull" Durham hand-made cigarettes are a secret of the manufacturers. You can get this unique feature in no other tobacco.

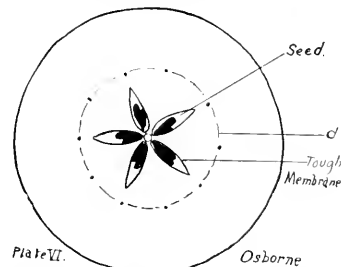
Ask for FREE book of "papers" with each 5c sack



An Illustrated **FREE** Booklet, showing how to "Roll Your Own," and a Book of cigarette papers, will both be mailed, free, to any address in U. S. on postal request. Address "Bull" Durham, Durham, N. C., Room 1105

THE AMERICAN TOBACCO COMPANY

calyx) should be well filled with the poison. From an examination of the plate No. IV it can readily be seen that the turning in of the sepals as the little apple develops from the flower directs a spray away from the calyx cavity. A few days later in its development the sepals form a sort of a cone-like roof over the calyx cavity much like that of a mature apple, as shown at "c" in plate No. V. It can also be seen by a close examination of plate No. II that the larva of a newly-hatched moth has but a small distance to eat to reach the center of the little apple during the early stages of its growth. It is also noticeable that the calyx cavity during the early stages is quite pointed, hence if the poison is well placed during spraying the larva is sure to eat it in its endeavor to reach the inside of the apple. Thus we find that each part of the flower after unfolding from the bud gradually passes through natural changes in developing into the apple.



These changes not only have a highly complex and interesting biological significance from the standpoint of the lovers of nature but also have a practical relationship to the management of the orchard, and to the quantity and quality of the fruit produced.

(TELEGRAM)

Spokane, Wash., June 27, 1914.

E. H. Shepard,

Editor "Better Fruit":

La Salle advertisement in your June issue stating that By-products committee had endorsed his dehydrator is absolutely unwarranted. Neither this committee nor any of its subcommittees has endorsed any processing method. Please give prominence to this statement.

(Signed)

Sixth National Apple Show By-products Committee.

True-to-Name Nursery

GALLIGAN BROS. Proprietors

Hood River-Duffur, Oregon

Wholesale and Retail General Line of Nursery Stock. Seventeen years in the business. For catalogue and prices write

True-to-Name Nursery

Hood River, Oregon

CANNING OUTFITS

Can Your Own **VEGETABLES** and **FRUITS**

STAHL Canning Outfits costs little, very easily operated. Over 100,000 in actual use. Can in either glass or tin, my formulas tell you how and contain no acids. My big 1914 catalog is FREE and contains actual reproduced photographs of users of my Canners. Write for a copy today, it is free. **F. S. STAHL, Box 604, Quincy, Illinois**

Standardization of the Prune

Professor C. I. Lewis, Oregon Agricultural College, before Oregon State Horticultural Meeting, December 11, 1913

QUITE a number in this audience were present at Salem on July 3 when I gave an address on the "Standardization of the Prune." That address has also been printed in some publications, so I do not deem it

necessary at this time to repeat much of the address that I gave at Salem. However, I want to firmly impress upon you this afternoon the importance of standardization. The mercantile trade and the business trade as a whole

realized long ago that it was impossible to do business without standardization. Practically all the manufactured products in this country or abroad have been standardized.

I was very much interested while at Washington to hear an address concerning European co-operation. During this address the speaker referred to the success of the Danish bacon producers and made this statement, that he believed that it was not so much the co-operation alone that was responsible for the great success of the Danish bacon producers as was the fact that they had standardized their product. When an English merchant asked this week for three hundred pounds of bacon he knew a month from now he could get a consignment of bacon exactly like the consignment he received this week. The hogs have been standardized, the business has been standardized. This is what you need to do with the prune. We have a lack of standardization, not only in the product we turn out but in our methods of procedure in obtaining this product.

This refers to the grower, the evaporator and the processor of our product. I do not believe it is wise or that it will profit us in any way to dwell on the troubles of the past. It is indeed hard to fix the responsibility for any shortcomings that the prune business has had to overcome. The growers are very prone to blame the packers and the packers in turn to blame the growers. Perhaps an investigation would show that both were to blame to a certain extent. However, be that as it may, this condition is true today, that the packers and growers, and in general all who are connected with the handling of the prune, seem desirous to co-operate, to get together, so to speak, and forget the past. When any set of men are willing to meet us half way on a question such as this it is indeed wise that we accept their invitation and start with a clean slate.

One of the greatest needs of the prune business of the Northwest is a first-class tart prune. The French prune of California fills to a very nice degree the demand for sweet prunes. However, there is a large class of people who prefer a tart prune. Our Italian prune is not an ideal tart prune. The word "Italian" is too broad; it has been made to cover many strains of fruit, and I am of the opinion that there are a number of varieties of prunes grown in Oregon that are called "Italian" which are really not. The present Italian type is too late in maturing. It is also often too tart and has too thick a skin in many cases. I desire very much to have the hearty

Wanted?

If you want a connection with **Practical Distributors** and **Marketers** whose experience covers the entire producing period of the Pacific slope, and who are

Specialists in the Products of Washington and Oregon

Make your wants known to

G. M. H. WAGNER & SONS

123 W. So. Water Street, CHICAGO

Ground Phosphate Rock

The Natural Plant Food and Permanent Soil Builder

1,000 pounds per acre once in each four years will cost about \$1.00 per acre per year. At Pennsylvania State College \$1.05 invested in Rock Phosphate gave increased yields of \$5.85—over 500%. At Maryland Experiment Station \$1.96% gave \$22.11—over 1,000%. At Ohio Station each dollar paid for itself and gave \$5.08 profit. At Illinois Station \$2.50 gave the same return as \$250 invested in land.

Each ton contains 280 pounds of phosphorus, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

United States Phosphate Co., Salt Lake City, Utah

WRITE FOR LITERATURE

"Perfection of fineness in grinding," our motto

Ridley, Houlding & Co.

COVENT GARDEN, LONDON

Points to remember when consigning
apples to the London Market

- 1.—We Specialize in Apples
- 2.—All Consignments Receive our Personal Attention
- 3.—The Fruit is Sold by Private Treaty on its Merits

CABLE ADDRESS: BOTANIZING, LONDON

Improved Metal Age Tripod Orchard and Step Ladders

NO NAILS OR SCREWS TO WORK LOOSE
ABSOLUTELY THE BEST LADDERS MADE

**Efficiency
Safety
Durability
Strength**

Ask your dealer to show them. If he does not keep them don't accept a substitute, but write to us.

**Storey
Manufacturing
Co.**

1538-1541 Macadam Street
PORTLAND, OREGON



Weight of ladder 32 pounds
Weight of load 1397 pounds

co-operation of all the prune growers of the Northwest in trying to select a new prune. If in your orchards you have certain trees that are better than the rest, if you have certain trees that seem to give you a better product as regards yield, quality, drying characteristics, etc., we would like to come in touch with you and have an opportunity of studying the product from such trees. By all working together we will be able to accomplish a great deal. Already this past year we have found a number of promising prunes in various parts of the state. One question which comes at once to our minds in considering standardization is, "What standards can we establish?"

Will it be a field standard? We who have had experience with prunes know that there are certain prunes which drop on the ground, others have to be shaken from the trees, and others even actually have to be pulled from the trees by hand. A very careful study of the condition of these different grades should be made to ascertain whether or not there is any standard that we can make, any grading at this time. Can we make grades established on such a basis as difference of specific gravities? This, while sounding impracticable, may prove to be quite practicable. Can we make a standard similar to that which the grape growers of California have adopted, namely, one of sugar content? They have a rule that certain varieties of grapes must not fall below a certain sugar test, a certain sugar content. Is it possible in any way to do a grading in the dryers before our evaporation starts? Or, if these things are impossible, can we make grades as soon as the fruit has been evaporated and before it has been processed? Can we eliminate the use of lye? At least it would seem we should come to some common understanding on this question. What are some of the changes the prune passes through in evaporation? Are our present methods of processing the best? These are some of the questions that we can well ask ourselves, some of the questions that we need to think about very seriously; and some of these questions will need much careful investigation before they can be intelligently answered. I must call your attention to the fact that we are not alone in the investigation of the standardization of the prune. The prune growers of Southern Austria and Servia have started an investigation of this very question, and if they should beat us in the investigation and be able to standardize their product before we can standardize ours, they will crowd us in certain markets.

From the study I have been able to make of this problem, it seems to me that a certain definite program should be laid out and followed. It will be necessary for the experiment station to first conduct a series of investigations before we can answer many of these questions. Second, as fast as the investigations produce results there should be a campaign of education among the people interested in prune production.

Store Your Apples in Spokane

The Natural Storage Center

Take advantage of storage in transit rate and the better market later. Write us for our dry and cold storage rate and information.

**Ryan & Newton
Company**

Spokane, Washington

Things We Are Agents For

Knox Hats

Alfred Benjamin & Co.'s Clothing

Dr. Jaeger Underwear

Dr. Deimel Linen Mesh Underwear

Dent's and Fownes' Gloves

Buffum & Pendleton

311 Morrison Street

PORTLAND, OREGON

Orchardist Supply House

Pruning
Tools



Orchard
Ladders

Picking
Buckets

Box Presses

Warehouse
Trucks

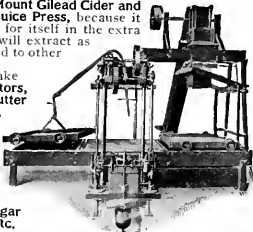
Send for Complete Catalogue

E. A. FRANZ CO., Hood River, Oregon

BIG PROFITS in the Cider Business

with a Mount Gilead Cider and Grape Juice Press, because it will pay for itself in the extra juice it will extract as compared to other makes.

We make Evaporators, Apple Butter Cookers, Vinegar Generators, Spraying Outfits, Cider and Vinegar Filters, etc.



Send for Catalog

THE HYDRAULIC PRESS MFG. CO.
60 Lincoln Avenue Mount Gilead, Ohio

Pacific Coast Representatives:
BERGEN & CARTER CO., 204-206 Mission Street,
San Francisco, California

An inspection of the prune dryers can follow very successfully the campaign of investigation and education. As soon as the people come to realize the importance of this work they will welcome any inspection which will aid us in getting better production. A series of meetings will be necessary before next season before we really accomplish results, such as the meeting at Salem last year.

The part the agricultural experiment station is playing in this program will interest you. The departments of chemistry, plant pathology, entomology and horticulture are all working on problems that will assist the prune men. In the department of horticulture we are starting some plant-breeding work. We are working out the pollination this year of the prune and are hoping as a result to be able to make some selections and crosses which may enable us to secure a better prune than we now have. We are conducting fertilizer experiments on some of our prune orchards to determine whether or not the addition of certain plant foods will be desirable. We have also started our first year's investigations in the possibility of standardization. We do not care to say very much about our first year's work, although we are somewhat encouraged. We feel this work should be checked over carefully for a number of seasons before we can consistently take a definite stand. We have started a study of this problem from the field to the packed box. The fruit has been studied in its different natural groups in the field. We have found that with this fruit there is a great difference in specific gravities between those which drop naturally and those which have to be shaken from the tree. In fact, there is such a difference that there is some promise that by means of a determination of differences in specific gravities we may be able to establish certain grades; and that certain qualities, such as maturity, sugar content, general eating and drying qualities are very closely associated with this difference in specific gravity. We have also come to the conclusion that the use of lye is not only undesirable but unnecessary. There has been a feeling among the American people, and among certain experts of the Department of Agriculture, that the use of such substances as lye and sulphur is unnecessary in connection with the drying of fruits, and the feeling is that the various substances used are not so much for the purpose of simplifying methods of evaporation or to enable the grower to turn out a better product, but on the contrary to allow him to use certain fruits and vegetables which are undesirable for foods, and that the use of such chemicals can cover a multitude of sins. Whether or not this contention is true is not for me to say, or to discuss at this time. The fact remains that many people believe this to be the case, and many people both in this country and abroad are demanding that such substances be not used. This feeling is so widespread that investigations have been started in various ways

Flies Can't Stand It
but it doesn't hurt the milk—use

LILLY'S Fly Killer

freely on your stock—it'll save you money which means making money.

All Dealers, 35c quart,
\$1.00 gallon, \$3.50 for 5 gallons.

THE CHAS. H. LILLY COMPANY, SEATTLE

Established 1893

W.P. KRANER & CO.

Importers and Tailors

2nd Floor Couch Bldg.

109 Fourth Street

Portland, Ore.

GEORGE E. KRAMER — C. W. STONE

YOU CAN EARN \$50.00 PER DAY



with the Gearless Improved Standard Well Drilling Machine.

Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours.

Another record where 70 feet was drilled on 2 1/2 gal. distillate at 9c per gal. Overman can operate. Electrically equipped for running nights. Financing job. Engine ignition. Catalogue W.P. REIERSON MACHINERY CO., Manfrs., Portland, Ore.

Hood River Nurseries

Have for the coming season a very complete line of

Nursery Stock

Newtown and Spitzenberg propagated from selected bearing trees. Make no mistake, but start your orchard right. Plant generation trees. Hood River (Clark Seedling) strawberry plants in quantities to suit.

Send for prices

Rawson & Stanton

Hood River, Oregon

Save \$35 to \$50

Yes sir, I'll save you \$35 to \$50 in the first cost alone on the best, most modern, most sanitary and closest skimming cream separator ever built. When you buy the

New Galloway Sanitary

—you pay just one small profit above actual cost of materials and labor. Why pay any dealer \$85 to \$110 for an inferior machine. Buy direct and save one-half. Get my **Special 101 Offer** and **90 Days FREE TRIAL** test of this machine right on your farm.

The new Galloway Sanitary skims to a trace, gears run, in oil—easy to run—easy to clean. Sold direct. Backed by \$25,000 bond. Write for new catalog and special 101 offer that will bring you your machine partly or entirely without cost in the end. Write today.

WM. GALLOWAY COMPANY
1035 Galloway Station Waterloo, Ia. 463



"PEARSON'S"

(CEMENT COATED)



ARE THE BEST BOX NAILS

J. C. PEARSON COMPANY, Inc.
 Old South Building
 Boston, Mass.
 Sole Manufacturers

A. C. RULOFSON COMPANY
 No. 315 Monadnock Building
 San Francisco, Cal.
 Pacific Coast Sales Managers

and considerable publicity has been given to certain findings or certain opinions. This publicity is generally rather undesirable on the part of the producer. We have found this past year that the use of boiling hot water can be made to take the place of lye, and if anything that the general appearance of the prunes when they are dipped into boiling hot water is superior to that where they are dipped in the lye. As far as the evaporation is concerned, we feel that we can say very little.

We doubt if the ideal evaporator has yet been built. The various types which we have, undoubtedly have much merit, and by close study of these different types we will be able to combine certain characteristics in one dryer which should be superior to anything that we now have. One great fault with the present dryers is that they are not efficient. There is a tendency for the man who runs the dryer to try and utilize all the heat which comes through the tunnels or stacks. He leads this heat so far that he really loses much heat, and in trying to conduct it so far the efficiency of the heat is greatly lowered. We have made a careful study of temperatures, ventilation, etc., and we feel that by another year we will be able to give you something quite definite along these lines. In regard to processing, will say that we have tried this year two different methods of processing and since we have followed the fruit from the tray to the box we will be able to know which of these systems seems to have the most merit.

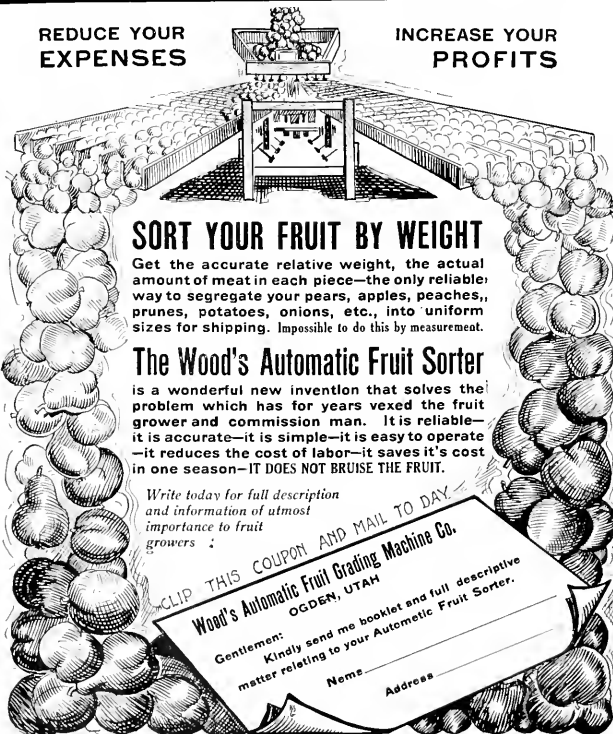
In addition to the work we are doing in the department of horticulture, other departments mentioned are doing some experimental work. The department of chemistry is co-operating with the department of horticulture in this study of prune standardization, making whatever chemical analyses are desired. The department of plant pathology is working on the molds and rots which occur on the prune, and the department of entomology will work on the problem of certain worms and mites which are known to attack the fruit under certain conditions. It is going to take, however, a number of years before we can make much progress and we hope the growers meanwhile will be patient and co-operate in every way possible. It is only by hearty co-operation, by all of us working together, that we can hope in the near future to really standardize the prune.

Almost the whole world knows of Hood River as a place that produces the best fruits, and all of Hood River Valley should know, and could know, that there is one place in Hood River, under the firm name of R. B. Bragg & Co., where the people can depend on getting most reliable dry goods, clothing, shoes and groceries at the most reasonable prices that are possible. Try it.

[Advertisement]

REDUCE YOUR EXPENSES

INCREASE YOUR PROFITS



SORT YOUR FRUIT BY WEIGHT

Get the accurate relative weight, the actual amount of meat in each piece—the only reliable way to segregate your pears, apples, peaches, prunes, potatoes, onions, etc., into uniform sizes for shipping. Impossible to do this by measurement.

The Wood's Automatic Fruit Sorter

is a wonderful new invention that solves the problem which has for years vexed the fruit grower and commission man. It is reliable—it is accurate—it is simple—it is easy to operate—it reduces the cost of labor—it saves its cost in one season—IT DOES NOT BRUISE THE FRUIT.

Write today for full description and information of utmost importance to fruit growers:

CLIP THIS COUPON AND MAIL TO DAY.
Wood's Automatic Fruit Grading Machine Co.
 OGDEN, UTAH

Gentlemen:
 Kindly send me booklet and full descriptive matter relating to your Automatic Fruit Sorter.

Name _____

Address _____

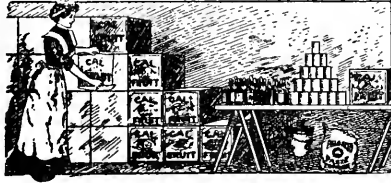
RELIABLE TREES

For British Columbia

We offer for the coming season the most complete and best selected stock of both FRUIT AND ORNAMENTAL TREES in the country. If you want home grown, first-class stock, handled under closest observation of all details which long experience alone can teach, you are the man we want to supply. Write today for prices or see our representative in your section.

LAYRITZ NURSERIES
Victoria, British Columbia

Paste for Labeling—"Palo Alto" Paste Powder



added to cold water, instantly makes a beautiful, smooth, white paste. Ready for immediate use at a cost of ten cents a gallon. No labor. No muss. No spoiled paste.

Paste Specialists
Robinson Chemical Works
349-351 Eighth Street
San Francisco, California

close or wide planting must be taken into consideration, if you do not want to wait long for net returns. As the trees grow older the difference between the close and wide planting will gradually grow less, and possibly would be about the same at twenty-five years. We have no grafted orchards in the Northwest old enough to estimate from, and only a few in California that we can get some idea from. But we have quite a number of topworked large trees that are showing their bearing qualities. Among these trees are the Franquette, Mayette, Meylan, Gladly and Payne. The Franquette, Meylan and Gladly bear about alike in quantity. The Franquette seems to be by far the best on account of the uniformity of its large, fine nuts. The Meylan is a fine looking nut and of excellent quality, but has the fault of having too many small ones when the trees are heavily loaded. The Payne blooms too early in the Northwest. While the Mayette scions were secured from different sources, they are all of true type, but have not yielded up to our expectations.

A seedling Mayette in the orchard of B. N. Sturgis at Vancouver, Washington,

Production of the Walnut in the Northwest

By Ferd Groner, Hillsdale, Oregon

AS the walnut industry is comparatively new in the Northwest, the question has been often asked, "What income can we expect per tree or per acre from orchards at different ages, and what it costs to bring an orchard up to a paying basis?" Last year a paper read before the Oregon State Horticultural Society on the question of cost and production seemed to me so pessimistic that I set myself about to gather figures on cost and actual returns. The question of how many

trees to the acre has been argued considerably, and we find orchards planted all the way from thirty to sixty feet apart, some with fillers of peaches, prunes or cherries and some without.

After years of study I favor planting forty feet square without fillers, if financial returns are to be considered. I will not go into detail in regard to price of land or machinery, as it would vary greatly in different localities, but the cost of first-class trees set in the ground, counting plowing and preparation of the soil, should not exceed \$45 per acre. In my six years of experience in intercropping between the trees I have made careful estimates of what it will cost to bring an orchard up to the bearing age, and have raised kale, corn, rape, potatoes, peas, vetches mixed with oats, and wheat and pumpkins. If the trees are staked, hogs do very little or no damage to the young trees, and I often have a large herd pasturing on the rape or vetches while feeding pumpkins or cull potatoes. By cultivating clean during spring and summer from one-third to one-half of the ground along the trees, according to age, the other one-half or two-thirds can be made to pay the whole cost of cultivation. While I do not wish to take time to go into this question in detail, as it would take too long, I do not hesitate to say that I can show figures leaving a safe net return, above cost of cultivation and training.

In regard to production per acre, much depends on the number of trees that are planted. An orchard planted thirty feet apart might be profitable at ten or eleven years old, while one planted sixty feet apart may be still an expense, as one would have four times as many trees as the other, and this

W. van Diem

Lange Franken Straat 45, 47, 49, 51, 61
ROTTERDAM, HOLLAND

European Receivers of American Fruits
Eldest and First-Class
House in this Branch

Cable Address: W. Vandlem
A B C Code used; 5th Edition

Our Specialties are

Apples, Pears, Navel Oranges

YOU WANT THE BEST SPRAYER



You want to save time, temper, trouble and trees. You want to raise fruit that brings the highest prices. You want to know all about our sprayer before you buy. There is more you ought to know. Do You Want To Know The Price?

Write for Catalogue & REIERSON MACHINERY CO. Manufacturers 182 Morrison St., Portland, Ore.

Vehicles and Agricultural Implements

THE BEST OF ORCHARD AND GARDEN TOOLS A SPECIALTY

Gilbert Implement Co.
HOOD RIVER, OREGON

The Question of the Day

With the fruitgrower is, how can he derive a revenue from his overripe and unsalable fruits?

It can be done. It is being done. How? By the use of the new and up-to-date process of

DEHYDRATING

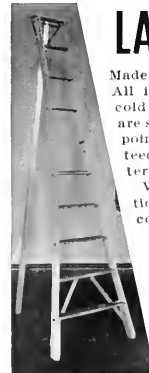
Which is the cheapest, quickest and best process ever devised for preserving fruit without changing the taste or flavor; is clean and sanitary. There is always a market for this product. Can be operated by anyone. Capacity to meet all requirements.

For descriptive booklet address

Luther Vacu-Dehydrator Co.
SPOKANE, WASHINGTON

SCHLEE'S ORCHARD

LADDERS



Made of select vertical grain fir. All iron work made of strong cold bent steel. The Ladders are securely braced in all vital points and absolutely guaranteed against all defects of material and workmanship.

Write for further description and prices. Special discount to the trade.

SCHLEE'S LADDER WORKS
267 Second Street
Portland, Oregon

Manufacturers of Orchard Ladders, Step Ladders, Extension Ladders, Decorating Ladders, Ladder Jacks, Window Cleaning Ladders, Roof Jacks



Mr. W. A. Johnston of The Dalles shipped a car containing 200 Kimball Cultivators to Michigan, which is the first carload of implements ever manufactured in Oregon and shipped East. The Oregon-Washington Railroad & Navigation Company officials had the car spotted and Mr. Johnston had a photograph taken. On the side of the car was tacked a banner which read, "The First Car of Agricultural Implements Made in the West and Shipped East. Kimball Cultivators, Manufactured by W. A. Johnston, The Dalles, Oregon."

The Best Implement for Successful Orcharding is the

KIMBALL CULTIVATOR

The Great Weed Exterminator

It not only preserves the moisture, but destroys the hiding places of insects, such as curculio, which are often serious orchard pests. Apples grown in cultivated orchards ripen later, and consequently keep longer. They are of larger size and are usually smoother.

The cost of cultivation is not excessive if Kimball Cultivators are used.

The Kimball Cultivator is made in all sizes, which enables us to give anyone the size necessary to do his work, whether he needs the 4½-foot size for the small farm or the 17-foot size for the large summer fallow fields. We recommend the 8½-foot size in most cases, as it is the best size for two horses, and better work can be done with it than can be done with other sizes.

Note prices on various sizes quoted below. Send in your order at once, or write by return mail asking for booklets and particulars. All quotations are f.o.b. The Dalles, Oregon, but we will arrange to have a carload in some Eastern city for the spring of 1914, so that shipments may be made direct from that point.

Retail Price Schedule of Kimball Cultivators

	Price
No. 4. 4½ feet, 6 blades, weight complete 70 lbs.....	\$13.50
No. 5. 5½ feet, 7 blades, weight complete 85 lbs.....	15.00
No. 6. 6 feet, 8 blades, weight complete 100 lbs.....	17.50
No. 7. 7 feet, 9 blades, weight complete 115 lbs.....	18.50
No. 8. 8½ feet, 11 blades, weight complete 125 lbs.....	20.00
No. 9. 10 feet, 13 blades, weight complete 140 lbs.....	25.00
No. 10. 12 feet, 16 blades, open center, weight complete 160 lbs.....	22.50
No. 11. 12 feet, 15 blades, weight complete 185 lbs.....	30.00
No. 13. 18½ and 19 feet, 23 blades, gangs fully rigged, weight complete 300 lbs.....	47.50
Extra Frames \$1.00 per foot; weight 10 lbs. per foot.	
Extra Blades \$1.50 each; weight 5 lbs. each.	

You need the Kimball Cultivator in your business. Write at once and arrange to have one of these implements ready for your spring work. Mention "Better Fruit" when you write.

W. A. JOHNSTON, The Dalles, Oregon

planted at five years old seven years ago, bore eighty pounds of true type nuts of fine quality and fair size this season. Quite a number of the larger Franquette trees topworked from four to six years have produced crops of from 50 to 125 pounds. The following returns are gathered from three of about the oldest orchards in the Northwest: Mr. Turpening of Eugene has five acres of seedlings of different varieties sixteen or seventeen years old; there are many blanks in the orchard where trees had been taken out or died and several that were not bearing, but there were many good trees, some producing close to 200 pounds. I visited this orchard last fall and the owner said it had averaged over \$100 net per acre for the last three years and that it would do as well or better this year.

Mr. Thomas Prince of Dundee owns the largest bearing orchard in the Northwest—about 100 acres, I think. I have visited it many times during the last eight years, and have watched its growth and increase in bearing. Some of the trees are forty feet apart, but most of them are thirty-six feet, planted in a prune orchard in the place of every fourth tree. This being a seedling orchard, there is a wide variation in the production of different trees, some not bearing at all, and others only a few nuts, and still others small or poor nuts; yet there are a great many fine trees bearing heavy crops; quite a number this year bearing more than 100 pounds. A few of these trees, I think, are seventeen years old, while some are planted only a few years. Mr. Prince stated to me that as near as he could estimate they would average about thirteen years old. The crop this year, as near as he could estimate, was about thirty pounds per tree, and sold at an average price of 17½ cents. The prune trees are yet growing in a large part of this orchard. The walnut trees are not doing nearly as well in this part, as they are badly crowded, but Mr. Prince says it takes a good deal of nerve to grub out a prune tree with prunes at present prices. Even with all these drawbacks, the gross income from walnuts is not less than \$175 per acre. The total cost of cultivation, harvesting and drying should not be over \$50 per acre, leaving a net income of \$125. If the income from the prunes was added to this it would make an eight per cent dividend on a considerably higher valuation than any of us have estimated at that age.

Mr. B. Norman Sturgis of Vancouver, Washington, has a seedling orchard of fifty-five trees of an average age of seventeen years, the oldest being nineteen years, planted thirty feet apart, making one and one-half acres. The crop last year was gathered and weighed both green and dry. The best tree produced 227 pounds of dry nuts, and they averaged 68½ pounds, making a total of 3,700 pounds. These returns are far better than I ever estimated. This orchard was brought up to this produc-

tion by taking out any tree that did not come up to the owner's ideal and planting another in its place. In some places three trees have been planted.

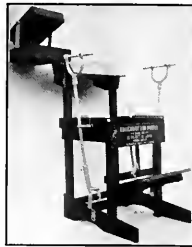
One of three trees in a yard in the suburbs of Brownsville, now twenty-three years old, has produced an average of 150 pounds annually for the last seven years. I have visited the tree many times during the last five years and believe it is the heaviest bearing tree in Oregon. This tree is of unknown origin, it has a very plump kernel and thin shell, but it is not well sealed, and for the latter reason its marketable qualities have been questioned.

Mr. J. F. Bugess, superintendent of the Vrooman orchard at Santa Rosa, California, of about 1,000 trees, states that it is sixteen years old next February, and that it has average forty-five pounds per tree for the last four years. This is the mother orchard of all our Vrooman Franquette.

Mr. George C. Payne, near San Jose, California, has a tree that he topworked about twenty-two years ago, at the age of sixteen years. The last five years it has averaged between 400 and 500 pounds, the highest amount being 714 pounds, that sold for \$99.98. There would be room for about six such trees on an acre.

I have considerable data on production in Southern California, France and Italy, but as we are not interested in those countries it would be a waste of time to give it here. A comparison between seedling and grafted trees of the Santa Barbara soft shell variety near Whittier, California, on the farm of a Mr. Scott, may, however, be worthy of consideration. The seedling orchard at twelve years old produced \$96 gross, the nuts selling at 14 cents per pound, and the grafted orchard at nine years produced \$202 gross, the nuts selling at 16½ cents per pound. While this difference seems too great to believe, it is nevertheless a fact we cannot get away from.

The price of walnuts has nearly tripled in the last twenty years, without any prospect of a decrease in the near future, as the planting is not keeping pace with the increased consumption. The main reason for this seems to be the high price of good reliable trees and the wait of eight or ten years before such returns can be expected. Blight has done more or less damage to the walnut crop, but the net loss to the grower is not as much as is often estimated, for as the crop is reduced, the price is advanced in proportion. In conclusion will say that the production of the orchards here submitted is higher than my most sanguine expectations. These figures would indicate that large areas of Southwestern Washington and Western Oregon, between the Cascade and Coast Range Mountains, will produce as many and as high quality walnuts as any district or country in the world.



You can buy an
Edgemont Lid Press from

WE WISH TO AGAIN CALL THE ATTENTION
OF FRUIT GROWERS TO OUR

Edgemont Lid Press

A press that is strong, durable, convenient
and moderate in price.

That a Lid Press with nail stripper and cleat box, brackets to hold lids where you want them, cleat hooks to hold cleats while nailing and a perfect treadle ratchet is appreciated by the growers is shown by the sale of hundreds of them to growers not only of the Northwest but of nearly every fruit district of the United States.

Send for circulars and prices to

H. PLATT & SONS, Como, Montana

YAKIMA HARDWARE CO., North Yakima, Washington
PLOUGH HARDWARE CO., Wenatchee, Washington
BERGER & CARTER CO., 504 Mission Street, San Francisco
B. G. PRATT CO., 50 Church Street, New York City
INLAND SEED CO., 913 First Avenue, Spokane, Wash.

A Large Fruit Crop

is predicted for 1914. Low cost of producing and gathering your crop should be looked after. Our 1914 Catalog shows many labor saving devices. Write

The Fruit Growers' Supply Co.
Spokane, Washington

F. A. BISHOP, Secretary

HOOD RIVER ABSTRACT COMPANY

HOOD RIVER, OREGON

ABSTRACTS INSURANCE
CONVEYANCING

SHIPPERS OF APPLES PEACHES PEARS PLUMS CHERRIES ETC.

When wishing to use the Cleveland market, or desiring reliable information concerning same, write or wire us. We are among the largest receivers here.

SPECIAL FEATURES:

Absolute responsibility, reliable and prompt service. No house in any market excels us in making prompt remittances when goods are sold. Liberal and consistent advances made on consignments. Ample cold and dry storage facilities.

Myers, Weil & Co.
CLEVELAND, OHIO

D. Crossley & Sons

ESTABLISHED 1878

Apples for New York and Export

CALIFORNIA, OREGON, WASHINGTON, IDAHO AND
FLORIDA FRUITS

Apples handled in all European markets at private sale. Checks mailed from our New York office same day apples are sold on the other side. We are not agents; **WE ARE SELLERS.** We make a specialty of handling **APPLES, PEARS AND PRUNES** on the New York and foreign markets. Correspondence solicited.

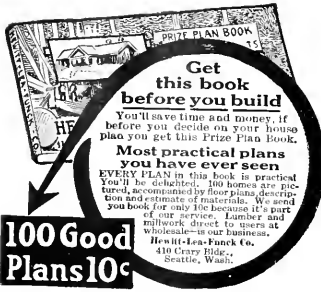
200 to 204 Franklin Street, New York

NEW YORK

LIVERPOOL

LONDON

GLASGOW



Get this book before you build

You'll save time and money, if before you decide on your house plan you get this Prize Plan Book.

Most practical plans you have ever seen

EVERY PLAN in this book is practical tested, accurate, by floor plans, descriptive, amount of materials. We send you book for only five because it's part millwork, direct to users at wholesale in our business.

Herbert Lusk Rank Co., 410 Cray Building, Seattle, Wash.

100 Good Plans 10c

RAISE PIGEONS

They Pay Dollars while Chickens pay cents

The young, 20 to 25 days old, sell for 40 to 60 cents each (according to the season). The city markets are always clamoring for them.

Each pair of Pigeons will raise 18 to 22 young a year.

They will clear you, above all expenses, \$5.00 a year per pair. They breed the entire year. Twenty minutes daily will care for 100 pairs.

Always penned up out of the way Very small space required.

All this is fully explained in this month's issue of our Journal; send for it; price 10 cents.

Reliable Squab Journal, Versailles, Mo.

The Paris Fair

Hood River's Largest and Best Store

RETAILERS OF

EVERYTHING TO WEAR

AGENTS FOR

HAMILTON & BROWN AND THE BROWN SHOES

HART, SCHAFFNER & MARX CLOTHES

MANHATTAN SHIRTS

JOHN B. STETSON HATS

NEMO CORSETS


Strictly Cash—One Price to All

Cider Presses

You can earn money wherever apples grow if you own a Monarch. A Monarch gets all the cider you have satisfied customers. We also make apple butter coolers and evaporators.

A. B. FARQUHAR CO., LTD. Box 106, York, Pa.

Write for FREE Catalog 1914



See California

and her two great Expositions FOR ONE DOLLAR

California will hold next year two great national Expositions, one at San Francisco and the other at San Diego, in celebration of the completion of the Panama Canal and the joining of the Atlantic and Pacific Oceans.

To supply the demand for reliable, authentic information on California and these two Expositions, we have published two guide books; one on San Francisco, the Exposition and Northern California, the other on Los Angeles, San Diego, the Exposition and Southern California, also a lithographed view of San Francisco colors (size 30x45 inches) a picture of the rebuilt city, including the Exposition. Each book is 6x9 inches, contains 150 pages and beautiful illustrations.

These two books and view give a comprehensive, honest history and description of the State, her principal cities, resources and her two great Expositions. Sent postpaid for a one dollar bill, money order, draft or check. North American Press Association, 3129 Hearst Building, San Francisco.

Handling of Fresh Fruit

By Peter M. Behr, Trade Manager Steinhardt & Kelly, New York

ONLY a short time ago traffic departments in connection with commercial interests were practically unknown and both shippers and receivers were at the mercy of the carriers, until the "Act to Regulate Commerce" was enforced. Circumstances, conditions, developments and experiences, which have often been placed on the shoulders of the public, at a great financial loss, have satisfied the individual merchant as well as the directors of our numerous manufacturing concerns and corporations that the services of a traffic manager were imperative in handling the traffic of the particular industry in which they were interested. As a result we find today that all up-to-date and progressive firms have acquired the services of competent men, who by their experience are in position to shoulder all responsibility pertaining to the transportation of their respective commodities, from point of origin to destination, with the utmost dispatch. It is also the duty of these men to keep accurate records of the actual condition of shipments on arrival, to place them in position to substantiate any claims which might be necessary to file account of loss, damage or delay, this being essential under the rulings of the Interstate Commerce Commission, and in the absence of which no carrier is permitted to make an adjustment without making themselves as well as claimants liable to severe punishment, as specified in the act. The necessity of a traffic department for the producers, distributors and receivers of fresh fruits and other perishable commodities is so pronounced as to need no comment.

Once again the Northwest has defended its reputation to be far in advance of the East, when the individual producers of the well-known varieties of Western fruits combined into organizations, realizing that only through such concerted and co-operative action could they obtain the very best results and have their products attain the height of perfection, by carefully studied conditions of their crops and consistent and carefully planned marketing systems employed by the various associations. In this their success has been wonderful, as at the present time you can travel almost any part of the civilized world, land or sea, and at your pleasure have the products of our Northwestern friends brought before you to enjoy to your heart's content. The producers, through the associations, make known their desires to prospective buyers, and after sales have been made the associations take full control of the products until they have obtained a bill lading contract from the carriers to deliver a certain car at a certain point, under certain conditions, all of which are covered by tariff's on file and approved by the Interstate Commerce Commission.

Full routing, icing and other necessary instructions are furnished the

MARVELOUS "K" Hand Power STUMP PULLER



(Hand machine sketched from photo.)

"K" strongest Stump Puller known. Works like rowing boat. Krupp steel frame; hardened forced working parts; weight 171 lbs. Weather-proof English cable (no chain to break). Cash or terms. Year guarantee.

9-ft. cedar stump pulled 12 minutes; 8-ft. fir, two pieces, 20 minutes. With "K" even woman can outpull horse team. Good all sorts of hoisting, pulling. Write today for our Special advertising low price offer.

W. J. FITZPATRICK, Box "S," 1926 Second Ave., Seattle, Wash.

St. Helens Hall

PORTLAND, OREGON

Resident and Day School for Girls

In charge of Sisters of St. John Baptist (Episcopal) Collegiate, Academic and Elementary Departments, Music, Art, Education, Physical, Domestic Science, Gymnasium. For catalog address—

THE SISTER SUPERIOR, St. Helens Hall

YOU CAN SEE NEW YORK CITY IN A DAY

The Green Car automobile trips uptown, downtown, and "Seeing New York after Dark"—a night tour along "The Great White Way," through the Hebrew, Hungarian, Italian Quarters and Chinatown, with the yacht trips around Manhattan Island constitute the most perfect Sight-Seeing Service in the world. A competent lecturer is in charge of every party. Write for beautifully illustrated 48-page historical booklet, printed in colors, with large map and list of theatres, hotels, rates, etc. Address Green Car Sight-Seeing Co., 958 Broadway, New York.

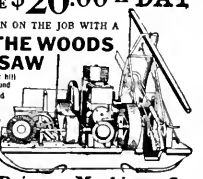
WE TEACH REAL ESTATE FREE

by mail. Under our system of course instruction you will become a proficient real estate dealer, procure ready buyers, close deals quickly and execute instruments without legal aid—all from your home. We assist you to a profitable realty business by co-operating with you on your sales and derive our returns from a percent on your first year's commissions. In addition to our free course instruction we furnish you with a complete office outfit of literature, books, forms, stationery, etc., at the actual cost price of \$9.50 (express prepaid). Start your business and instruction at once. Now is the season for buyers. Over three million acres sold in four years. Address Dept. M25.

HEALTHY EXTENSION SCHOOL
1147 North Hermitage Avenue, Chicago

YOU CAN MAKE \$20.00 A DAY

AND JUST ONE MAN ON THE JOB WITH A KING OF THE WOODS DRAG SAW



Put it up on the stump; hit and over the highest ground. One man, with his sawed off stump, will pull it. Another sawed off stump to 8 ft. Another sawed off stump to 12 ft. Another sawed off stump to 16 ft. Another sawed off stump to 20 ft. Another sawed off stump to 24 ft. Another sawed off stump to 28 ft. Another sawed off stump to 32 ft. Another sawed off stump to 36 ft. Another sawed off stump to 40 ft. Another sawed off stump to 44 ft. Another sawed off stump to 48 ft. Another sawed off stump to 52 ft. Another sawed off stump to 56 ft. Another sawed off stump to 60 ft. Another sawed off stump to 64 ft. Another sawed off stump to 68 ft. Another sawed off stump to 72 ft. Another sawed off stump to 76 ft. Another sawed off stump to 80 ft. Another sawed off stump to 84 ft. Another sawed off stump to 88 ft. Another sawed off stump to 92 ft. Another sawed off stump to 96 ft. Another sawed off stump to 100 ft.

Write for full particulars. FREE IS MORE YOU WILL KNOW. Write for Particulars and Catalog D-3. Manufacturers, PORTLAND, OREGON.

Reierson Machinery Co.

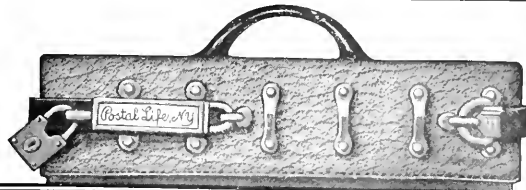
initial carrier by the receiver, if he be an f.o.b. cash purchaser, through the associations, and thus by this endless chain of co-operation the producers, associations, carriers and receivers are brought in very close contact, although actually thousands of miles apart. As Messrs. Steinhardt & Kelly are strictly f.o.b. cash purchasers, the responsibility of delivery at the designated destination of the fruits in good condition within a reasonable time is transferred automatically to the traffic department immediately after the bill-lading contract has been signed by the authorized representative of the initial line. It is needless to say that the men in this department must be wide awake and up to the minute at all times, as many unforeseen and unexpected conditions will arise which require immediate, decisive and definite action. While cars are in transit this department must be in position to tell almost hourly where a certain car is at that time, and must be ready on a second's notice to jump into the breach and be prepared, on account of certain conditions and difficulties, which arise at times without notice, to divert a certain car to another market, another to be lightered to steamship pier for export and still another to cold storage warehouse, there to be held for future needs and to avoid glutting the market, which would result in an enormous financial loss. When cars are finally delivered at their ultimate destinations, whether diverted or held under the storage-in-transit privilege, freight bills must be absolutely correct, whether the amounts specified represent the actual transportation, refrigeration, storage-in-transit, switching, detention, car service or diversion charges, before they can be passed to the accounting department for payment. When this has been accomplished the history of the respective shipments pass into oblivion.

Fruit Growing in Tasmania

I have been reading with great pleasure what you have been telling us about fruit growing in your country, and as I cannot talk in your conferences your people might like to read about fruit growing in these new lands where already fruit is eaten in very much larger quantities than we remember in the old world, and where it is produced so easily and so beautifully. Our long sunny summers, extending from October to the following June, mature fruits which never ripen on the tree in the old world. Your Jonathan apple is looked upon as quite an early apple here and produces mature red fruit early in our season. Maidens Blush and King of Tompkins are even

Elastic Pruning Paint

Saves Girdled Trees, Heals Cuts and Wounds, Prevents Decay, Stops Bleeding in Pruning. A Positive and Effective Remedy for the Treatment of Fruit and Shade Trees when Diminished. Use Any Time of the Year. Catalog—Fruit Growers' Supply Depot 1911
E. G. MENDENHALL
 Box BF Kimmunity, Illinois



The Postal Life Insurance Company pays you the Commissions that other Companies pay their agents

THE POSTAL LIFE is the only Company that opens its doors to the public so that those desiring sound insurance-protection at low cost can deal **directly** for it, either **personally** or **by correspondence**.

Whether you call or write, you make a **guaranteed** saving, corresponding to the agent's commission the **first year**, less a moderate advertising charge. This first-year **Commission Dividend** ranges up to

40% of the Premium on Whole-Life Policies

STRONG POSTAL POINTS

- FIRST:** Standard policy-reserves, now nearly \$10,000,000. Insurance in force nearly \$50,000,000.
- SECOND:** Old-line legal reserve insurance—not fraternal or assessment.
- THIRD:** Standard policy-provisions, approved by the State Insurance Department.
- FOURTH:** Operates under strict State requirements and subject to the United States-postal authorities.
- FIFTH:** High medical standards in the selection of risks.
- SIXTH:** Policyholders' Health Bureau provides one free medical examination each year, if desired.

In subsequent years you get the **Renewal Commission** other companies pay their agents, namely 7 1/2%, and you also receive an Office-Expense Saving of 2%, making up the

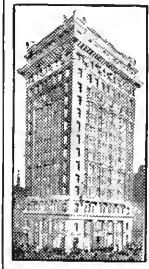
Annual Dividend of 9 1/2% Guaranteed in the Policy

And after the first year the POSTAL pays **contingent dividends besides**, depending on earnings as in the case of other companies.

Such is the POSTAL way; it is open to you. Call at the Company's offices, if convenient, or **write now** and find out the exact sum it will pay you at your age—the **first year and every other**.

POSTAL LIFE INSURANCE COMPANY
 The Only Non-Agency Company in America
 WM. R. MALONE, President
 35 Nassau Street, New York

POSTAL LIFE BUILDING
 35 Nassau St., New York



See How Easy It Is

In writing simply say: *Mail me insurance-particulars for my age as per "Better Fruit" for June.*

- In Your letter be sure to give
1. Your Full Name.
 2. Your occupation.
 3. The Exact Date of your Birth.

No agent will be sent to visit you; the Postal Life employs no agents.

Assets:
 nearly
\$10,000,000

Insurance
 in force
 nearly:
\$50,000,000

HOOD RIVER VALLEY NURSERY COMPANY

Phone 5634

Route No. 3, Box 227

HOOD RIVER, OREGON

Plantation four miles southwest of station, Belmont Road

We will be pleased to show you trees, apple trees that have a heritage, a quality that should be considered by everyone who plants a tree. Our trees are grown in clean hillside virgin red soil with clay subsoil, producing the most vigorous root system. Our buds are selected from the best bearing healthy Hood River trees that make the Hood River apple famous throughout the world. Our trees will give you satisfactory results in vigor, fruit and quality. Ask for catalog. We guarantee our products. Apples, pears, peaches, apricots, almonds and walnuts. A complete line of the best varieties of all kinds of fruit.

H. S. BUTTERFIELD, President

W. J. ENSCHEDÉ, Manager

PORTLAND, OREGON

PORTLAND HOTEL

The hotel which made Portland, Oregon, famous
 Most Desirably Located. In the Center of Shopping and Theatre District
 Covers a City Block

Broadway, Sixth, Morrison and Yamhill Streets

EUROPEAN PLAN—\$1.00 per day and upward

Write for Portland Hotel Booklet

G. J. Kaufmann, Manager



Get Your Canadian Home from the Canadian Pacific

BUY an irrigated farm where you have insurance against drought and where you have just the moisture you need when you need it. You know the value of controlling the watering of your crops. In sunny Southern Alberta you are master of the moisture. The Canadian Pacific's great Irrigation Works insure your yield whenever rainfall is insufficient. Irrigation is not always a necessity—but it is yours at command. It means dependable crops, and wonderful crops every year. The Eastern section of the Canadian Pacific Irrigation Block East of Calgary is now open. Virgin soil of famous fertility—alfalfa, timothy and other fodders—raises all the grain and root crops, fine climate—great cattle country—good markets—unexcelled transportation.

We want the alert enterprising farmers who see this magnificent opportunity. So we make the most liberal terms. Take 20 years to pay. Call on us for long time loan of \$2000 for farm improvements if you want it. Investigate now. This block will soon be the most densely populated and intensely cultivated district in the west.

You Can Have 20 Years to Pay

We will sell you this rich irrigated, Canadian land for \$35 to \$75 an acre. You need pay only one-twentieth down. Think of it—only one-twentieth down, and then the balance in 19 equal annual payments. Long before your final payment comes due, your farm will have paid for itself over and over again. Many good farmers in Western Canada have paid for their farms with one crop. Here are some of the startling features of the most remarkable land offer you have ever read:

We Lend You \$2,000 for Farm Improvements This offer of a loan up to \$2,000 is for farm development only, with no other security than the land itself, and shows our confidence in the fertility of the soil and in your ability to make it produce prosperity for you and traffic for our lines. This loan will help you in providing buildings, fencing, sinking wells and breaking, and you are given twenty years in which to fully repay this loan. While enjoying the use of this money, you pay interest at only 6%.

Advance Live Stock on Loan Basis The Company, in case of the approved land purchaser who is in a position and has the ability to take care of his stock, will advance cattle, sheep and hogs up to the value of \$1,000 on the basis of the settler's note with interest at eight per cent, to enable him to develop more rapidly, on the right basis, of mixed farming.

Farm Made Ready by Experts if Desired If you want a place already established, select one which our Department of Agricultural Experts has developed. Or our improved farms, house and other buildings are up, well as sheep, farm fenced, fields cultivated and in crop. All waiting for those who want an immediate start and quick results—all planned and equipped by men who know our own agricultural experts. Take twenty years to pay if you want to. We give free service—expert service—the valuable assistance of expert demonstration farms, in charge of agricultural specialists employed by the Canadian Pacific for its own farms. This service is yours—free.

Water Rental Will Not Exceed \$1.25 per Acre And each water agreement will have the approval of the Dominion Government. You are doubly protected.

The Canadian Pacific offers you the finest land on earth for grain growing, cattle, hog, sheep and horse raising, dairying, poultry, vegetables and general mixed farming. Irrigated lands for intensive farming. Remember, these lands are located on or near established lines of railways, near established towns. You can start on an irrigated farm, improved or unimproved.

Here is the Last Best West where your opportunity lies. Don't delay. Mail the coupon here at once. The best land will be taken first—so time is precious to you. Write today.

W. T. THORNTON, Colonization Agent
Canadian Pacific Railway
Colonization Department
112 West Adams St., Chicago, Illinois



W. T. THORNTON, Colonization Agent,
Canadian Pacific Railway Co. Colonization
Department, 112 W. Adams St., Chicago

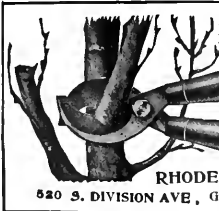
Please send me your book of information on Irrigation Farming in Sunny Alberta.

Name

Address

Town

State



RHODES DOUBLE CUT PRUNING SHEAR

Pat'd June 2, 1903.

RHODES MFG. CO.,

620 S. DIVISION AVE., GRAND RAPIDS, MICH.

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

FRUIT GROWERS, YOUR ATTENTION

Royal Ann, Bing and Lambert cherry trees; Spitzenberg and Newtown apple trees; Bartlett, Anjou and Comice pears, and other varieties of fruit trees.

A. HOLADAY

MONTE VISTA NURSERY

SCAPOOSE, OREGON

earlier. It is not uncommon for us to gather Josephine pears ripe from the tree.

I would like to take you through my orchards of pears and apples just now, before we gather for England. My specialty is pears, of which I grow some seventy varieties on 5,000 trees. I could show you over 1,000 bushels on the measured acre. The trees are 15 feet apart, or 193 to the acre. Last year they turned off an average over three acres of ten bushels a tree, and now they are perhaps as good. The land is light sand with heavy clay sub-soil, and cost me, uncleared, one pound (five dollars) an acre. Cultivation is carried on through a great part of the year and manuring with farmyard and artificial manures, given about every third year. Pruning in winter is necessary to procure large fruit, each branch of the tree being deprived of all its laterals so as to make it like a cordon, and the tree is kept down to about eight or ten feet high. Winter spraying with lime and sulphur and summer spraying for moth and scab cannot be neglected, for which we use power pumps.

I see some of your speakers challenge the world for their Doyenne du Comice pears, but I would like to break a lance with them. Last year mine sold for a shilling (25 cents) per fruit in Covent Garden Market, and some of my Comice trees turned off five or six bushels. I, too, hold a medal from the London Royal Horticultural Society for my pears, although they had to travel 12,000 miles before being placed on exhibition. Anjou, which do so well with you, are not a great success here, but Glou Moreau, the Covent Garden favorite, does splendidly and reaches £2 (\$10.00) a bushel in Covent Garden.

In comparison with your prices orchards are sold here very cheaply—first-class orchards ten or twelve years old are sold for £100 (\$500) an acre, and any amount of the finest fruit-growing land, as bush, can be taken up from the government at 10 shillings (\$2.50) an acre. Southern Tasmania is very mountainous and we like to put our orchards in sheltered valleys, where wind cannot blow down the fruit and where we can irrigate if necessary; but our rainfall is so constant that as a rule irrigation is not necessary. This season is very dry, still I have a Bartlett pear before me as I write which measures twelve inches in circumference and weighs seventeen ounces. This is an exceptionally large Bartlett for us to grow, so much so that those I showed it to thought it was a Beurre Deil, which often grows larger than this with us, whilst Comice grows nearly as large. I think some of your Hood River apples came here about Christmas and were greatly admired for their beauty, but the general verdict on, say a Jonathan, was that ours were superior in flavor. Australia and Tasmania expect to send a million bushel cases to Covent Garden this season. Yours truly, H. Benjafield, Moonah, Tasmania.

MADE IN THE FOLLOWING SIZES:

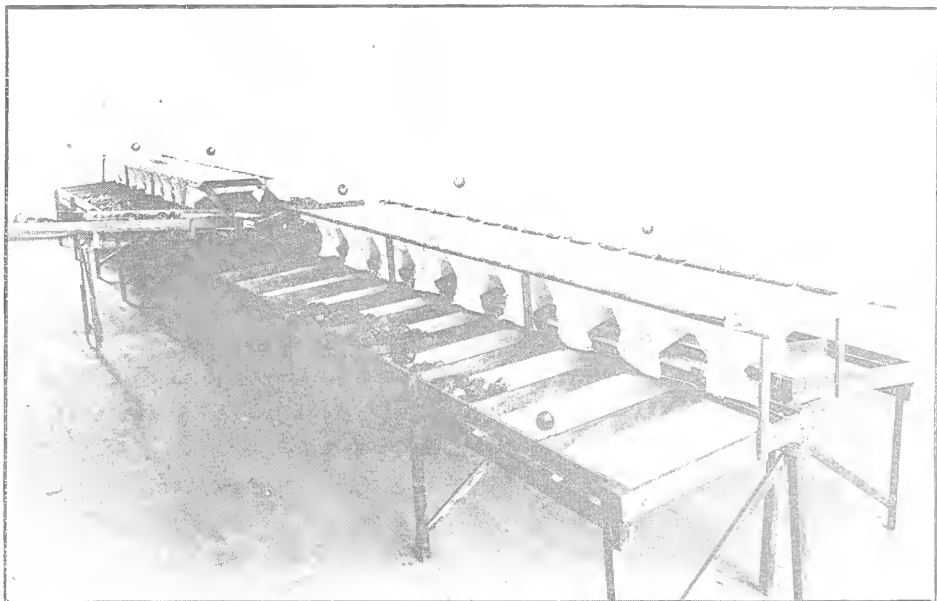
The 1-cup, for the small orchardist, with a capacity of 350 boxes per day and handling one grade only.

The 2-cup, with a capacity of 750 boxes and handling one grade only.

The 4-cup, as shown in illustration, handling two grades, with a capacity of 1,500 boxes in 100 hours.

The 6-cup, which handles three grades in the same operation, with a capacity of over 2,000 boxes in 100 hours.

Mr. W. G. Price, the inventor of this machine, has had over one hundred patents issued to him; he has been with the government corps of expert army engineers and other highly specialized industries for years. He is a mathematician, engineer and scholar. We tell you this so that you may know that this machine is not the product of a dreamer, or of one unskilled.



Our Motto: To reduce the cost of putting fruit in the box, so that even a child could do the work and obtain the perfect pack. This machine will save you from three to five cents on every box of apples that you pack; enable you to get a perfect pack, and have every apple in the box the same size; enable you to get the proper bulge, tightness, and do away with over tight and too loose packs; the only machine on the market that does away entirely with expert packers; enables expert packers to double their output and to do better work. The apples are in full view in the bins, so that you can check up your help as to sorting and grading at all times, which you cannot do when apples are sorted from box to box. The only machine on the market that sizes your apples into the twenty Northwest standard packs, and will handle two grades at the same time, doing away with 80% of your crop at one handling, and has a capacity of 1500 boxes per day. It will handle apples, pears, peaches, oranges, onions, potatoes or any other fruit or vegetable that needs to be sized. It will handle fruit as delicately as a woman's touch. **We are demonstrating with eggs to prove its non-bruising qualities.**

Five thousand boxes will save you the price of the big machine the first season, and give you a better pack than you have ever been able to put up before. Twenty-five hundred boxes will save you the price of the medium machine. This Sizer is made in units, so that they can be added to at any time. Write us for further information, and we will cheerfully send illustrations, testimonials and more detailed explanations, and please mention "Better Fruit."

BETTER FRUIT SIZER

Designers and Manufacturers of Throwing Machines for Sizing and Sorting Apples, other Fruits, Vegetables and Nuts.

Works and General Sales Office, North Yakima, Washington, P.O. Box 934, Office No. 1 North Second Street

W. G. PRICE, President.

W. K. PRICE, Manager Works.

J. W. LAVIGNE, Sales Manager.



THE CHAIN OF EVIDENCE

THROUGH THE NORTH PACIFIC FRUIT DISTRIBUTORS

1. It places at the service of the grower a body of trained and experienced experts, better equipped and better informed than the buyers, it maintains a comprehensive and trustworthy system of gathering crop estimates and daily market reports, at a cost of many thousand dollars, to adequately serve the grower; it thus puts the grower in an advantageous position in his relationship to the trade.
2. It distributes the grower's fruit, by intelligent organization, to all of the markets, so as to neither over-supply nor under-supply any particular markets, and provides an agency large enough to seek and find new markets, as well as develop old ones.
3. It markets the grower's fruit in an extensive but conservative and economical manner and without ruinous competition.
4. It furnishes the grower with personal representatives in every important market center in America and Europe, and, in fact, the world, whose first consideration is the grower's interests,—who examine the fruit in transit, repair damages, and, where necessary, protect the grower against improper demands for allowances, etc.
5. It secures a uniform and dependable grade and pack of the fruit throughout every district,—a thing of great value to the trade and therefore to the grower seeking the trade,—and it is thereby enabled to back the brand of each district with a guarantee that will bring a higher price for the fruit than for other fruit outside of such brand.
6. It properly and scientifically advertises the grower's fruit, and returns the full value of that advertising to the grower.
7. It gives the grower the power, backed by the exclusive service of skilled legal, traffic and claim departments, to secure justice and fair dealing in all instances from buyers, railroads, etc.
8. It removes from the methods and practices of the fruit business the objectionable and obstructive features, the strength and influence of 6,000 united growers being vastly more effective than that of 6,000 individual, disinterested units.
9. It gives the grower control of his own product from orchard to market, thus enabling him to secure the handling of his fruit by the legitimate trade at an equitable cost.
10. It can, by reason of its all-district representation, supply any quantity of any variety of any fruit to meet the most exacting and per-emptory demands of the trade and thus avail the grower of the benefits to be derived from such special service.
11. It determines the price at which the grower's fruit is to be sold, just as every other substantial producing business considers cost, adds a reasonable profit, and thus determines the selling price.
12. It insures a fair price to the grower throughout the season because of its equitable pooling system (each district's fruit being pooled by itself however) and because of certain definite marketing policies.
13. It eliminates, by reason of its magnitude, waste in marketing the grower's fruit, and so reduces the price to the consumer, proportionately increasing the consumption of that fruit.
14. It helps to finance the grower at lower rates of interest through loans from the banks, rather than an advance from some one buyer, thus liberating the fruit to all buyers and all markets, instead of one buyer and one market, as is the case when the grower accepts an advance from a buyer.
15. It builds a permanent selling machine for the grower, in contrast to a one-man selling organization, efficient only while the man of strong capacity at its head lives and retains his position,—big enough to handle tonnage ten times as great as in 1912, when every known marketing agency failed, and one that will always be on the job.
16. It investigates and aids in matters of vital importance to the grower, such as national and state legislation, Panama Canal shipping facilities, freight rates, provisions for refrigeration, storage, warehouses, supplies, etc.
17. It puts the grower in business for himself on a business basis.

North Pacific Fruit Distributors

MAIN OFFICE: SPOKANE, WASHINGTON

BETTER FRUIT

VOLUME IX

AUGUST, 1914

NUMBER 2



A CLUSTER OF HUNGARIAN PRUNES GROWN IN MORROW COUNTY
Prunes are grown extensively in Oregon, Washington and Idaho

BETTER FRUIT PUBLISHING COMPANY, PUBLISHERS, HOOD RIVER, OREGON

Subscription \$1.00 per Year in the United States; Canada and Foreign, Including Postage, \$1.50

Single Copy 10 Cents



Mr. W. A. Johnson of The Dalles shipped a car containing 200 Kimball Cultivators to Multnomah, which is the first carload of implements ever manufactured in Oregon and shipped East. The Oregon-Washington Railroad & Navigation Company officials had the car loaded and Mr. Johnson had a photograph taken. On the side of the car was tacked a banner which read, "First Car of Agricultural Implements Made in the West and Shipped East. Kimball Cultivators, Manufactured by W. A. Johnson, The Dalles, Oregon."

The Best Implement for Successful Orcharding is the

The Great Weed Exterminator

It not only preserves the moisture, but destroys the hiding places of insects, such as curculio, which are often serious orchard pests. Apples grown in cultivated orchards ripen later, and consequently keep longer. They are of larger size and are usually smoother.

The cost of cultivation is not excessive if Kimball Cultivators are used.

The Kimball Cultivator is made in all sizes, which enables us to give anyone the size necessary to do his work, whether he needs the 4 1/2-foot size for the small farm or the 17-foot size for the large summer fallow fields. We recommend the 8 1/2-foot size in most cases, as it is the best size for two horses, and better work can be done with it than can be done with other sizes.

Note prices on various sizes quoted here. Send in your order at once, or write by return mail asking for leaflets and particulars. All quotations are f.o.b. The Dalles, Oregon, but we will arrange to have a carload of same Eastern city for the spring of 1916, so that shipments may be made direct from that point.

RETAIL PRICE SCHEDULE OF KIMBALL CULTIVATORS

No. 1.	4 1/2 feet, 4 blades, weight complete 70 lbs.	Price	\$12.50
No. 5.	5 1/2 feet, 7 blades, weight complete 85 lbs.		15.00
No. 6.	6 feet, 8 blades, weight complete 100 lbs.		17.50
No. 7.	7 feet, 9 blades, weight complete 115 lbs.		18.50
No. 8.	8 1/2 feet, 11 blades, weight complete 125 lbs.		20.00
No. 9.	10 feet, 12 blades, weight complete 140 lbs.		25.00
No. 10.	12 feet, 16 blades, open center, weight complete 160 lbs.		22.50
No. 11.	12 feet, 16 blades, weight complete 185 lbs.		30.00
No. 13.	18 1/2 and 19 feet, 25 blades, range fully spread, weight complete 200 lbs.		47.50

Extra Frames \$1.00 per foot; weight 10 lbs. per foot.

Extra Blades \$1.50 each; weight 5 lbs. each.

You need the Kimball Cultivator in your business. Write at once and arrange to have one of these implements ready for your spring work. Mention "Better Fruit" when you write.

W. A. JOHNSON, The Dalles, Oregon

FRUIT SUPPLIES

Full Size and 1/2 Size Bags,

Box Presses

Washing Machines

Grain Drills

Boxing Machines

Boxing Machines

Boxing Machines

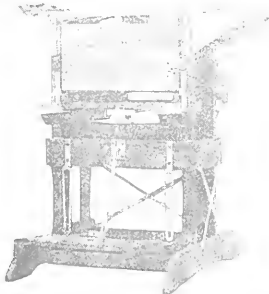
Boxing Machines

Boxing Machines

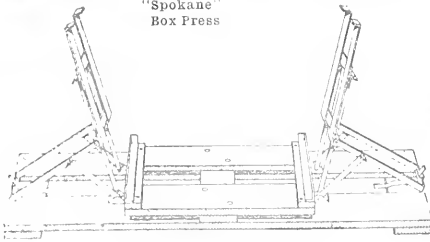
Boxing Machines

Boxing Machines

Boxing Machines



"Spokane" Box Press



"Perfection" Box Press



"Ideal" Picking Bag

Write for particulars and catalogue.

The Hardie Manufacturing Company

PORTLAND, OREGON

JOBBERS

or

Fruit Growers' Supply Company, Spokane, Wash.

THE WORLD

OUR ORCHARD

STEINHARDT & KELLY

101 PARK PLACE

NEW YORK

Unquestionably the most
important factors in the
Fruit Industry of
the United
States



OUR MARKET

THE WORLD

SIMONS, SHUTTLEWORTH & CO., Liverpool and Manchester
 SIMONS, JACOBS & CO., Glasgow GARCIA, JACOBS & CO., London
 J. H. LUTTEN & SON, Hamburg
 Agencies and Representatives in Every Important European Market

European Receivers of American Fruits

FOR MARKET INFORMATION ADDRESS

Simons, Shuttleworth & French Co.
 204 Franklin Street, New York

Ira B. Solomon
 Canning, N. S.

Simons Fruit Co.
 Toronto and Montreal

Simons, Shuttleworth & Webling Co.
 46 Clinton Street, Boston

OUR SPECIALTIES ARE APPLES AND PEARS

IF YOU WANT TO MARKET
 YOUR

FRUIT

RIGHT

ALWAYS SHIP TO

W. B. Glafke Co.

WHOLESALE FRUITS
 AND PRODUCE

108-110 Front Street
 PORTLAND, OREGON

W. H. DRYER

W. W. BOLLAM

DRYER, BOLLAM & CO.

GENERAL
 COMMISSION MERCHANTS

128 FRONT STREET

PHONES: MAIN 2348
 A 2348

PORTLAND, OREGON

LEVY & SPIEGL

WHOLESALE

FRUITS AND PRODUCE
 Commission Merchants

SOLICIT YOUR CONSIGNMENTS
 Top Prices and Prompt Returns
 PORTLAND, OREGON

STORAGE

Ship your Furniture
 to us to be stored
 until you are located

TRANSFER & LIVERY CO.
 Hood River, Oregon

The Old Reliable

BELL & CO.

Incorporated

WHOLESALE

Fruits and Produce

112-114 Front Street
 PORTLAND, OREGON

Richey & Gilbert Co.

H. M. GILBERT, *President and Manager*

Growers and Shippers of

YAKIMA VALLEY FRUITS
 AND PRODUCE

Specialties: Apples, Peaches,
 Pears and Cantaloupes

TOPPENISH, WASHINGTON



Stop at "The Oregon," Hood River
 Clean Rooms—Excellent Meals—One block from depot

Mark Levy & Co.

COMMISSION
 MERCHANTS

Wholesale Fruits

121-123 FRONT AND
 200 WASHINGTON ST.

PORTLAND, OREGON

A PANORAMIC VIEW

of the
 Famous Hood River Valley
 showing

13,000 acres of apple orchards,
 Mount Hood, Mount Adams and
 the Columbia River Gorge.
 40 inches long Price \$1.00

SLOCUM & CANFIELD'S BOOK AND ART STORE
 Hood River, Oregon

W. F. LARAWAY

DOCTOR OF OPHTHALMOLOGY

EYES TESTED  LENSES GRIND

Over 30 Years' Experience

Telescopes, Field Glasses
 Magnifiers to examine scale

Hood River Oregon and Glenwood lowe

**"WE STARTED RIGHT
AND WE ARE RIGHT"**

6458 Acres
IN OUR ENTERPRISE
4178 Acres
ALL IN APPLES

Nine miles continuous rows of trees, the largest apple orchard ever planted. All are one, two and three years old; the two and three year old all sold, amounting to over 3,000 acres.

We are now offering our one year at terms to suit you.

We give five years', from date of planting, free care. Our company is unlike others in the feature of staying with our purchasers after the free care period. Our plans make our interests mutual; we all work together for the interest of all.

Our Booklet will give you a simple statement of our dealings and methods. Write us for information.

DUFUR ORCHARD COMPANY
Northwestern Bank Building
Portland, Oregon

**The
First
National
Bank**

Hood River, Oregon

F. S. STANLEY, *President*
J. W. HINRICH, *Vice President*
E. O. BLANCHARD, *Cashier*
V. C. BROCK, *Assistant Cashier*
C. D. HINRICH, *Assistant Cashier*

Savings Department
Safe-Deposit Boxes
Interest on Time Deposits

Careful attention given to business of non-resident clients

Capital and Surplus \$134,000
Total Assets over \$600,000

Selling Daily June 1 to September 15

**Excursion
Tickets**

To the East and Return from the Pacific Northwest via

**Northern
Pacific
Railway**

Minneapolis	\$60.00
St. Paul	60.00
Duluth	60.00
Superior	60.00
Chicago	72.50
Milwaukee	72.50
Winnipeg	60.00
St. Louis	70.00
Kansas City	60.00
Omaha	60.00
New York	108.50
Philadelphia	108.50
Boston	110.00
Washington	107.50
Pittsburgh	91.50

And relatively low fares to all other Eastern points.

Advise what points you wish to reach and we will advise you rates. A letter or postal will receive our best attention.

Yellowstone National Park

June 15 to September 15.

Take the side trip to the Park from Livingston.



A. D. CHARLTON, A. G. P. A.
Portland, Oregon

LESLIE BUTLER, *President*
TRUMAN BUTLER, *Vice President*
C. H. VAUGHAN, *Cashier*

Established 1900

Butler Banking Company

HOOD RIVER, OREGON

Capital fully paid \$100,000.00

INTEREST PAID ON TIME DEPOSITS

We give special attention to good Farm Loans

If you have money to loan we will find you good real estate security, or if you want to borrow we can place your application in good hands, and we make no charge for this service.

THE OLDEST BANK IN HOOD RIVER VALLEY

LADD & TILTON BANK

Established 1859

Oldest Bank on the Pacific Coast

PORTLAND, OREGON

Capital \$1,000,000.00
Surplus 1,000,000.00

Officers

W. M. Ladd, *President*
Edward Cookingham, *Vice President*
W. H. Dunkley, *Cashier*

R. S. Howard, Jr., *Assistant Cashier*
J. W. Ladd, *Assistant Cashier*
Walter M. Cook, *Assistant Cashier*

INTEREST PAID ON TIME DEPOSITS AND SAVINGS ACCOUNTS

Accounts of banks, firms, corporations and individuals solicited. Travelers' checks for sale, and drafts issued available in all countries of Europe.

Denney & Company

DISTRIBUTORS

Apples, Peaches, Pears, Plums, Prunes

Before making arrangements for this season's business get acquainted with our record and manner of handling Northwestern Fruits. Several successful seasons make it worth your time to investigate our methods. We are no experimenters and have shown our ability to dispose of our shipments on f.o.b. orders.

Represented In All Leading Markets
Main Office, Chicago, Illinois

HOOD RIVER VALLEY NURSERY COMPANY

Phone 5634

Route No. 3, Box 227

HOOD RIVER, OREGON

Plantation four miles southwest of station, Belmont Road

We will be pleased to show you trees, apple trees that have a heritage, a quality that should be considered by everyone who plants a tree. Our trees are grown in clean hillside virgin red shot soil with clay subsoil, producing the most vigorous root system. Our buds are selected from the best bearing healthy Hood River trees that make the Hood River apple famous throughout the world. Our trees will give you satisfactory results in vigor, fruit and quality. Ask for catalog. We guarantee our products. Apples, pears, peaches, apricots, almonds and walnuts. A complete line of the best varieties of all kinds of fruits.

H. S. BUTTERFIELD, President

W. J. ENSCHEDE, Manager

Arcadia Irrigated Orchards

The largest and most successful orchard project
in the entire West

7,000 acres planted to winter apples. Gravity irrigation. Located 22 miles north of Spokane, Washington, directly on the railroad. We plant and give four years' care to every orchard tract sold. \$125, first payment, secures 5 acres; \$250, first payment, secures 10 acres; balance monthly.

Send for booklet

Arcadia Orchards Company
Deer Park, Washington



When you get to Hood River
stop at the

Mt. Hood Hotel

Occupying one-half block
With a new brick annex

ROOMS SINGLE OR EN SUITE
TWENTY ROOMS WITH BATH
SPECIAL RATES TO FAMILIES

Trains stop daily in front of the Hotel
Bus meets all boats

NOT AN EXPERIMENT

The Cutler Fruit Grader

Simple, durable, accurate and tested by experience

Built in five sizes. Each size may be enlarged later as your crop increases



A double capacity CUTLER GRADER as it now stands in the packing house of the Hood River Apple and Storage Company, after handling over 40,000 boxes last season. Read what they say below.

We ask you as businesslike fruit growers to read and weigh well every word of this advertisement. We not only think the CUTLER GRADER will save you money, but we know it will, because the records of growers using this machine last year prove that this saving ranges between 5 and 7 cents per box. Many of our customers saved the cost of their machines several times over the first season. We not only think it will run successfully without breakdown, but we know it will, because of the experience behind us. A small wrench and a screwdriver are all the tools you need. There are no complicated parts to be repaired while your men stand idle, no springs to weaken, no vibrating parts to jar loose.

Our principle is correct for flat, round or long varieties. Every apple is measured cheek to cheek. The accurate sizing almost doubles the output of the packer as proved by a season's averages. Again no guess about this. The fruit is handled gently, no violent action with liability of stem punctures or breakage of stems when handling pears. The CUTLER GRADER will handle a large output in a small space, and two grades at once, even with the smallest model. The carrier of this machine could size and deliver over 1500 boxes a day, but the working capacity of any machine is limited to the volume that can be packed at the bins. This machine has a greater working capacity, size for size, than any other machine on the market. This is chiefly because of the ability to control the delivery of the fruit into the bins, allowing all the packers to get to the fruit even when the variety runs principally to two or three sizes. A machine without this delivery control runs a variety of this kind into a few bins, leaving the other bins useless, cutting down the number of packers that can be used. It takes but a moment's adjustment of the CUTLER GRADER to spread these crowding sizes into adjacent bins. Our small model is admirably suited for the individual grower. It handles two grades (a very necessary feature), is only 16 feet by 7 feet, requires less than $\frac{1}{2}$ horse-power, and can be enlarged later by addition of sections.

RESULTS—NOT THEORIES

Note what a few of our many satisfied customers write us
AFTER A FULL SEASON'S TRIAL

Hood River, June 29, 1914.
Cutler Fruit Grading Machine Co., Hood River, Oregon.

Gentlemen: Replying to your further inquiry in regard to the grading machine which we bought from you last year, we are pleased to state that it was a splendid success. We experienced no trouble in operating the machine and the exact records of costs which we have kept for several years show your machine saved 5 cents per box. We handled nearly 10,000 boxes in a 30x40 tent, and realize that without your machine to move the fruit quickly we undoubtedly would have lost heavily from bad picking weather. Your method of sorting the fruit, where the sorter inspects each apple as he places it in the carrier, proved very satisfactory to us, and we believe it to be one of the strongest features of your machine where accurate sorting is desired. The machine, we believe, paid for itself several times over the first season and we wish you every success. Yours truly, DICKERSON & PECK, (signed) W. B. Dickerson.

Demand is active and our output is limited,
so write before it is too late to

Hood River, Oregon, May 28, 1914.

Cutler Fruit Grading Machine Co., Hood River, Oregon.

Dear Sirs: Replying to your inquiry, I am pleased to state that the machine which you installed in my packing house last fall saved me from 6 to 7 cents per box, and made it possible to handle a much greater quantity of fruit in the packing room than we could in previous years. The two regular packers whom I employed averaged 121 boxes each in 10 hours through the entire season. These same packers, working for me the previous year, did not average over 65 boxes each per day. The machine paid for itself several times over in the one season. Very truly yours, (signed) W. E. SHERMAN, Hood River, Oregon.

May 28, 1914.

Cutler Fruit Grading Machine Co., Hood River, Oregon.

Dear Sirs: We used one of your double capacity Grading Machines last season from October 1st to January 4th, without any loss of time, due to the machine, and packed out over 10,000 boxes. We found that eight men sorting and loading into the machine brought our daily output up to an average of 800 boxes per day, when running full crew. We believe your machine to be superior to the other makes that we have seen or used. Yours very truly, (signed) THE HOOD RIVER APPLE & STORAGE CO., Per M. M. Hill.

The Cutler Fruit Grading Machine Co., Hood River Oregon



One-Third More for Tires

16 makes of tires now sell for more than Goodyear prices. Half of them cost about one-third more. As compared with them, Goodyears save you 25 per cent in original cost alone.

Don't Pay It

Don't pay those extra prices. The evidence is that Goodyear tires are the best tires built today. They outsell any other, and they won that place by millions of mileage tests.

No man knows how to build a tire to give you lower cost per mile. No other maker combats tire troubles as we do in Goodyear tires.

Any higher price means added cost of upkeep without any compensation. In most cases, that higher price is due to limited production.

Save This 25%

We used to charge you extra prices for Goodyear No-Rim-Cut tires. That was because of exclusive, costly features.

Those tires are built the same today. They have the same exclusive features. But we now build ten tires where we then built one. We have modern equipment, new factory efficiency. Our prices came down as our costs came down. They are half what they used to be.

Accept this saving. It is one of our greatest

accomplishments. The price of the leading tire of the world is all that you should pay.

Exclusive Features

These four features of No-Rim-Cut tires are found in no others at any price:

Our No-Rim-Cut feature, which wipes out rim-cutting completely.

Our "On-Air" cure, which saves all the countless blow-outs due to wrinkled fabric. This one exclusive feature adds to our tire cost \$1,500 daily.

Our patent method for combating tread separation. It reduces this danger by 60 per cent.

Our All-Weather tread—our double-thick, resistless anti-skid which, because of its flatness, runs as smoothly as a plain tread.

Note that these are all exclusive Goodyear features. No other tire offers one of them. Every year they are saving our tire users many millions of dollars.

You will get them all, at the Goodyear price, if you ask your dealer for No-Rim-Cut tires. Any dealer can get them quickly if your size is not in stock.



The Goodyear Tire & Rubber Company, Akron, Ohio

Toronto, Canada

London, England

Mexico City, Mexico

Branches and Agencies in 103 Principal Cities. Dealers Everywhere.

Write Us on Anything you Want in Rubber.

(1688)

BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

The Compatibility of Insecticides

Mr. George P. Gray, before the State Fruit Growers' Convention, Davis, California, June 1-6, 1914

THE cost of crop-pest insurance by means of spraying is no small burden to most producers, who are often confronted with the necessity of making frequent applications of various remedies to insure their products against the ravages of insect and fungus parasites. At times it must almost seem that if the necessary thought and time were given to the proper application of the appropriate treatment at the right time little energy would be left for cultivation, harvesting or other necessary operations. The cost of spray materials is no small item, but is usually insignificant as compared to the cost of application. One way of reducing the latter expense is by combination spraying, that is, by mixing two or more spray materials and applying them together. In mixtures of this sort grave chemical changes may take place

of combination sprays and the results have been published in the bulletins of the United States Department of Agriculture, the state experiment stations and in agricultural journals. These reports are scattered through so many publications and the conclusions are at times so conflicting that no inconsiderable amount of time must be spent in a search of the literature to arrive at a definite conclusion as to the suitability of applying some particular remedy in combination with another. In order to bring this information into more available form and of more easy access, it has been condensed into tabular form and a compatibility table is presented for your consideration with the hope that it will be of some assistance in warning you of obscure dangers that may lurk in apparently harmless mixtures.

"Incompatibility" is a phrase often seen in the newspapers, and its meaning may be described as a state of affairs in which trouble is precipitated whenever two opposing tempers come in contact. Incompatibility is the state of being incompatible. In pharmacy the terms are often used, and usually a whole chapter is devoted to the subject in works on the practice of pharmacy. As applied to medicines, incompatibility is of three different types and may be defined as follows: Incompatible: (1) Chemically—Not capable of being united in solution without liability to decomposition or other chemical change. (2) Therapeutically—Not suitable to be prescribed together because of opposing medicinal qualities. (3) Physically—Not suitable to mixed on account of liability to produce undesirable physical change. In a broad sense, it seems that the word may be applied to insecticides and fungicides. The distinctions made between the different sorts of incompatibilities as applied to pharmacy might also be applied in a general way to spray mixtures. To avoid technicalities, however, it seems best to divide mixtures of insecticides and fungicides into five classes designated by letters.

COMPATIBILITY TABLE—INSECTICIDES AND FUNGICIDES

	Fungicides			Contact Insecticides						
	Bordeaux	Lime-Sulphur	Iron Sulphid	Cyanid Fumigation	Tobacco	Soaps	Emulsions	Alkalies	Acids	
Stomach Poisons (Arsenicals)	Paris Green.....	A-1	D	A-1	D	?	D	D	D	D
	Calcium Arsenite	A	D	A	A	D	D	D	D	D
	Lead Arsenate (Acid)	A-1	?	A-1	A	D	D	D	D	C
	Lead Arsenate (Neutral)	A	B	A	A	A	A	A	D	D
	Zinc Arsenite.....	?	D	A-1	A	D	D	D	D	D
Contact Insecticides	Lime-Sulphur.....	?	—	—	A	A	C	D	C	C
	Emulsions.....	?	D	C	A-1	A	—	D	D	
	Soaps.....	{ A-1 } { 1 or B }	{ C }	{ C }	A	—	—	A	C	
	Tobacco.....	{ C } { D }	{ A }	{ A }	A	—	—	—	B	A
	Cyanid Fumigat'n	D	A							
Acids.....		D	C	D					C	
Alkalies.....		B	C	D						

Class

A-1—Better results by mixing Compatible

A—Properties not changed by mixing

B—Efficient, non-injurious

C—Inefficient, non-injurious

D—DANGEROUS MIXTURE

Incompatible, chemically

[Arranged by Geo. P. Gray]

which render the mixture wholly unfit for use. On the other hand, the original ingredients may remain unchanged or may be improved by their new associates. Numerous experiments have been made to determine the advisability

The word "compatibility" or its opposite, "incompatibility," may seem odd as used in this connection, but it seemed to be the best word that presented itself, applied in the sense to be later described. "Incompatibility of tem-

Classification of Mixtures

The key to classification is briefly given at the bottom of the table for convenient reference. A little fuller statement is desirable and is as follows:

Class A-1, compatible mixtures in which the chief constituents remain practically unchanged but are less liable to decomposition after application, or in which an undesirable constituent has been neutralized or rendered less soluble. Mixtures in which the spreading or adhesive qualities are improved are also included in this class.

Class A, compatible mixtures in which no important chemical or physical changes occur.

Class B, incompatible chemically, but compatible in respect to use ("therapeutically" and "physically"). Efficient, non-injurious. Mixtures in which important chemical changes occur but the original killing or preventive properties and physical properties are not impaired, and no injurious new compound is formed.

Class C, incompatible chemically and also incompatible in respect to use ("therapeutically" or "physically" or both). Inefficient, non-injurious. Mixtures in which important chemical or physical changes occur and render a part or all of the original ingredients

inert, or less active, or physically unsuitable for use, but not necessarily injurious to the host of the parasite.

Class D, incompatible chemically and also incompatible on account of injurious properties ("therapeutically" or "physically" or both). Dangerous mixtures. Mixtures in which important chemical changes occur and render all or a part of the original constituents injurious to the host of the parasite. It so happens that D stands for dangerous and the table has been so arranged that dangerous mixtures are thus easily recognized by associating the letter which designates the class with the word.

Interpretation of the Table

The point must be brought out and strongly emphasized that it is not intended to recommend any particular mixture shown in the table in preference to any other. That is not the purpose of the table. For example, an A-1 mixture is not necessarily a better mixture to use than an A mixture. The comparison is not between the mixtures themselves but is intended to be made solely between the mixture and the original ingredients of the mixture; the classification is intended to show the effect of mixing only. It is seen by looking at the table that a paris green-bordeaux combination is classed as A-1 and a neutral lead arsenate-bordeaux combination is classed as A. This classification is not intended to mean that the first combination is safer to use than the latter, but that the paris green-bordeaux combination is safer to use than paris green alone and that neither benefit nor harm results from the mixing of neutral lead arsenate and bordeaux.

Arsenical-Fungicide Combinations

Bordeaux.—Again referring to the table, it is seen that both paris green and acid lead arsenate are improved by mixing with bordeaux. This is on account of the excess of lime in the bordeaux as now commonly used. The lime forms a fairly insoluble compound with the soluble arsenic in paris green and acts in the same capacity after spraying if any soluble arsenic is formed by the action of the weather upon paris green or acid lead arsenate. Calcium arsenite cannot be improved in this way, as this arsenical is made with an excess of lime and the additional lime of the bordeaux could not make it more safe to use. No safer arsenical is known than neutral lead arsenate; therefore no added safety would result by admixture with bordeaux. Insufficient data is at hand to warrant the classification of the zinc arsenite-bordeaux combination.

Lime-Sulphur.—Lime-sulphur is now coming to be a very formidable rival to bordeaux mixture and the other copper fungicides, and is also extensively used as a contact insecticide. Hence it is often desirable to mix this valuable remedy with an arsenical. For this purpose the choice of arsenicals is limited to lead arsenate, and very likely should be entirely restricted to the

neutral type. Lime-sulphur is a very unstable compound and is easily decomposed by slight influences, and is especially susceptible to change when mixed with other spray materials. This fact is evident when it is noticed that only two of its combinations are in class A. Its own decomposition products are quite harmless, but its effect on its associates is very frequently of a serious nature. Particularly is this true of its effect upon the arsenites (paris green, calcium arsenite and zinc arsenite). The arsenites in general are less stable compounds than the arsenates and are prone to yield soluble arsenic in either alkaline or acidic solutions. The acid lead arsenate is also unstable in alkaline solutions. Lime-sulphur is of an alkaline nature, and therefore the various arsenical-lime-sulphur mixtures must all be placed in the dangerous class, with the exception of the neutral lead arsenate, and possibly with the exception of the acid lead arsenate under certain favorable conditions. Instances are known in which acid lead arsenate and even paris green have been sprayed in combination with lime-sulphur without apparent injury to foliage, but it is thought that cases of this kind are very rare and must have been done under unusually favorable climatic conditions. The acid lead arsenate-lime-sulphur combination is given a question mark in the table for the reason that many of the reports of experiments make no mention of the type of lead arsenate used. Where the distinction is made, however, the neutral type is favored.

Iron Sulfid.—The so-called iron-sulfid fungicide is prepared by mixing a solution of iron sulphate with an excess of lime-sulphur solution. There results a mixed precipitate of insoluble iron sulfid (black), free sulphur (yellowish) and calcium sulphate (white). The excess of lime-sulphur is washed out and there is left a paste of the three precipitates which are quite insoluble and inert toward most ordinary reagents. The iron sulfid is black and is present in sufficient quantity to mask the presence of the other precipitates. The free sulphur is believed to be the only constituent of fungicidal value, the others being merely incidental to this economical manner of precipitating free sulphur in a finely divided form. The iron sulfid and calcium sulphate also serve to prevent the minute particles of sulphur from flocculating (i. e., uniting to form coarser grains). From the above description, the iron sulfid being composed of fairly insoluble and inert substances, it may be inferred that this material may be mixed with any of the arsenicals without fear of materially affecting their composition. In some cases the liability of arsenical foliage injury is reported to be lessened by the presence of the fungicide in question.

Other Free Sulphur-Paste Preparations.—Recently there have come into the market other forms of finely divided free sulphur mixed with deflocculating agents, notably "atomic sul-

phur" and "milled sulphur." These two preparations are composed of free sulphur ground to an impalpable powder in the presence of a small quantity of some material to prevent the flocculation of the particles and enough water to form a paste. Sulphur in its elementary form (free sulphur) is insoluble in most liquids except the alkalies and is indifferent to the influence of most of the substances present in the various sprays. The deflocculating agents are in small quantity and are believed to have no detrimental effect. Being of so recent origin and of the nature of proprietary preparations, these are not included in the table. So far as shown in printed reports and from personal observation, it is thought that "atomic sulphur" and "milled sulphur" may be used with safety in combination with the different arsenicals.

Potassium and Sodium Sulfids (Liver of Sulphur, Sulphide of Potash, Soda, etc).—Solutions or fusions of sulphur, in soda or potash lyes, have long been known as efficient fungicides and have been more or less used as dormant sprays. Their causticity has prevented their very wide application as a foliage spray and few attempts are reported to combine materials of this nature with the arsenicals. As noted in the reports that are at hand, however, the results of such combinations have been disastrous, as might be expected, considering the susceptibility of most arsenicals to the influence of alkalies. Interest in fungicides of this class has recently been somewhat revived through the introduction into the state of a proprietary preparation known as "Soluble Sulphur," offered as a substitute for lime-sulphur. This preparation is very similar in composition to liver of sulphur, the chief difference being that the former is combined with a sodium base, while the latter is combined with a potassium base. From a consideration of the nature of the materials in question (potassium and sodium sulfids, variously known as liver of sulphur or sulphide of potash and sulphide of soda, and "soluble sulphur") a combination spray composed of any of these sulfids and any arsenical except the neutral lead arsenate would be very injurious when applied to foliage. It is thought that the only possible arsenical to use with these alkali sulfids is the neutral lead arsenate, and even this opinion is not given with absolute certainty in the absence of definite data.

Arsenical-Contact Insecticide Combinations

Tobacco.—So far as known the various forms of tobacco preparations are compatible with the arsenicals, paris green being a possible exception. (See Tobacco-Bordeaux.)

Soaps.—As previously noted in the discussion of arsenicals-lime-sulphur, the arsenites and the acid lead arsenate are all unstable in the presence of alkalies. The alkalies of soaps, therefore, prohibit their use with the ar-

Grade Rules North Pacific Fruit Distributors, Season 1914

RECOMMENDATIONS of Grade and Pack Conference, composed of accredited representatives and experts from all sub-central districts, acting in concert with chief inspectors, sales managers, district managers and branch office managers. Unanimously approved and adopted by the board of trustees of the North Pacific Fruit Distributors, in regular session, May 18, 1914.

APPLES

The grades to be used will be designated as Extra Fancy, Fancy, and "C" grade, and defined as follows:

Extra Fancy—This grade shall consist of sound, smooth, matured, clean, hand-picked, well-formed apples only; free from all insect pests, disease, blemishes, bruises and other physical injuries, scald, scab, scale, sun scald, dry or bitter rot, worms, worm stings, worm holes, spray burn, limb rub, visible water core, skin puncture or skin broken at stem. All apples must be of good matured color, shape and condition characteristic of the variety.

The following varieties defined as to color shall be admitted to this grade: **Solid Red Varieties**—Aiken Red, Arkansas Black, Baldwin, Black Ben Davis, Gano, Jonathan, King David, McIntosh Red, Mammoth Black Twig, Missouri Pippin, Spitzenberg (Esopus), Vanderpool, Winesap. **Striped or Partial Red Varieties**—Ben Davis, Delicious, Gravenstein, Hubbardston Nonsuch, Jefferis, Jeniton, Kaighn Spitz, King of Tompkins County, Northern Spy, Rainier, Rome Beauty, Staymen, Snow, Wealthy, Wagener, York Imperial.

Color requirements of Extra Fancy are as follows: Solid red varieties to have not less than three-fourths good red color. Sizes 175 and smaller, when admitted to this grade, must have 90 per cent good red color. Striped or partial red varieties, as designated above, to have not less than one-half good red color. Sizes 175 and smaller, when admitted to this grade, must have at least 75 per cent good red color, except that Gravenstein, Jefferis and King

of Tompkins County in all sizes must be at least one-fourth good red color, and McIntosh Red in all sizes must have at least two-thirds good red color. Red checked or blushed varieties, such as Hydes King, Red Cheek Pippin, Maiden Blush and Winter Banana, must have a blushed cheek. Ortley must be white, yellow or waxen. Yellow or green varieties, such as Grimes Golden, White Winter Pearmain, Yellow Newtown and Cox's Orange Pippin, must have the characteristic color of the variety.

No sizes admitted to this grade smaller than as follows: Aiken Red, 200; Arkansas Black, 200; Baldwin, 200; Ben Davis, 163; Black Ben Davis, 163; Cox's Orange Pippin, 163; Delicious, 150; Gano, 163; Grimes Golden, 200; Gravenstein, 200; Hubbardston Nonsuch, 150; Hydes King, 150; Jeniton, 200; Jonathan, 200; Jefferis, 200; King of Tompkins County, 163; King David, 200; Maiden Blush, 163; McIntosh Red, 200; Missouri Pippin, 200; Mammoth Black Twig, 150; Northern Spy, 163; Ortley, 163; Rainier, 163; Rome Beauty, 163; Red Cheek Pippin, 163; Spitzenberg (Esopus), 200; Staymen, 163; Snow, 200; Vanderpool, 163; Winesap, 200; Wagener, 200; Winter Banana, 150; White Winter Pearmain, 200; Wealthy, 200; Yellow Newtown, 200; York Imperial, 163.

All boxes to be lined and carboard used top and bottom. No carboard to be used between layers in sizes smaller than 88s. No apples will be accepted in boxes showing infection of worms or cocoons. All apples to be wrapped.

Fancy Grade—In this grade all apples must be matured, hand picked, clean and sound, free from all insect pests, diseases, stings, scald, scale, sunscald, dry or bitter rot, worm, worm stings or worm holes, spray burn, visible water core, skin puncture or skin broken at stem. Slight leaf rubs, scratches or russeting will be permitted up to a total of one inch in diameter in sizes 125 and larger; three-fourths inch diameter in sizes 138 to 163 inclusive; one-half inch in diam-

eter in sizes 175 and smaller. Limb rubs will be permitted showing an aggregate area in the various sizes of one-half the above. No apple shall show total blemishes aggregating more than one inch in diameter in sizes 125 and larger; three-fourths inch in diameter in sizes 138 to 163 inclusive, and one-half inch in diameter in sizes 175 and smaller. Fruit clearly misshapen, bruised or bearing evidence of rough handling shall not be permitted in this grade. The varieties admitted to this grade are the same as in the Extra Fancy.

Color requirements are as follows: The solid red varieties must have fully 40 per cent good red color, except McIntosh, which must have fully 30 per cent good red color. Sizes 175 and smaller, when admitted to this grade, must have at least 75 per cent good red color, except McIntosh, which must have at least 60 per cent good red color. Striped or partial red varieties must have at least one-fourth good red color. Sizes 175 and smaller, when admitted to this grade, must have at least 50 per cent good red color, except that Gravenstein, Jefferis and King of Tompkins County must have at least 10 per cent good red color. Sizes 175 and smaller, when admitted to this grade, must have at least 20 per cent good red color. Red checked or blushed varieties must have correct physical qualities with tinge of color. All apples of green or yellow variety shall be of a characteristic color.

No size shall be admitted to this grade smaller than as follows: Aiken Red, 200; Arkansas Black, 163; Baldwin, 163; Ben Davis, 163; Black Ben Davis, 163; Cox's Orange Pippin, 150; Delicious, 150; Gano, 163; Grimes Golden, 200; Gravenstein, 200; Hubbardston Nonsuch, 150; Hydes King, 150; Jeniton, 200; Jonathan, 200; Jefferis, 200; Kaighn Spitz, 200; King of Tompkins County, 163; King David, 200; McIntosh Red, 200; Maiden Blush, 163; Mammoth Black Twig, 150; Missouri Pippin, 200; Northern Spy, 163; Ortley, 163; Rainier, 163; Rome Beauty, 163; Red Cheek Pippin, 150; Spitzenberg (Esopus), 200; Staymen, 150; Snow, 200; Vanderpool, 150; Winesap, 200; Wagener, 200; Winter Banana, 150; White Winter Pearmain, 200; Wealthy, 200; Yellow Newtown, 200; York Imperial, 163.

All boxes to be lined and carboard to be used top and bottom, but no carboard to be used between layers in sizes smaller than 88s. No apples will be accepted in boxes showing infection of worms or cocoons. All apples to be wrapped.

Combination (Extra Fancy and Fancy Grades Packed Together)—The following apples to be packed in one grade, combining the Extra Fancy and Fancy grades, as provided by these grading rules covering Fancy grade, except that no size to be smaller than 163 count. This pack to be marked or

PEARS—SIZES (INCHES) BY GRADES AND WEIGHTS OF PACKAGES

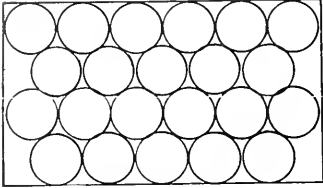
Variety	Extra Fancy				Fancy				C Grade		Weight
	1st Picking		2nd and 3rd Picking		1st Picking		2d-3d Picking		For Season		
	Young Trees	Old Trees	Young Trees	Old Trees	Young Trees	Old Trees	All Trees	All Trees	All Trees		
Bartlett					2 1/2	2 1/4	2	2 1/4	2 1/4	2 1/4	50-53
Beurre d'Anjou	2 1/2	2 1/4	2 1/4	2	2 1/2	2 1/4	2	2 1/4	2 1/4	2 1/4	47-50
Beurre Bosc	2 1/2	2 1/4	2 1/4	2	2 1/2	2 1/4	2	2 1/4	2 1/4	2 1/4	47-50
Beurre d'Easter					2 1/2	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	48-52
Beurre Clairge					2 1/2	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	48-52
Clapp's Favorite					2 1/2	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	48-52
Comice	2 1/2	2 1/4	2 1/4	2	2 1/2	2 1/4	2	2 1/4	2 1/4	2 1/4	47-50
Duchess					2 1/2	2 1/4	2	2 1/4	2 1/4	2 1/4	48-52
Flemish					2 1/2	2 1/4	2	2 1/4	2 1/4	2 1/4	48-52
Fall Butter					2 1/2	2 1/4	1 3/4	2 1/4	2 1/4	2 1/4	48-52
Garber					2 1/2	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	48-52
Howell					2 1/2	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	48-52
Ithaco					2 1/2	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	48-52
Jersey					2 1/4	1 3/4	1 3/4	2 1/4	2 1/4	2 1/4	48-52
Kieffer					2 1/4	2 1/4	2	2 1/4	2 1/4	2 1/4	48-52
La Comte					2 1/2	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	48-52
Miscellaneous large					2 1/2	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	48-52
Miscellaneous small					2 1/2	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	48-52
Seckel	(1)				(1)			(1)	(1)	(1)	48-52
Vicar of Wakefield					2 1/2	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	48-52
Winter Nelis					2	1 3/4	1 3/4	2 1/4	2 1/4	2 1/4	48-52
Winter Bartlett					2 1/2	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	48-52
Walla Walla Seedling					2 1/4	2	2	2 1/4	2 1/4	2 1/4	48-52

† Face in 4 1/2-inch peach box.

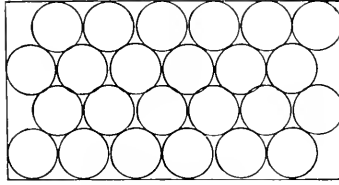
‡ No C grade.

Wrap—Do Not Line—Face Bottom. All Grades.

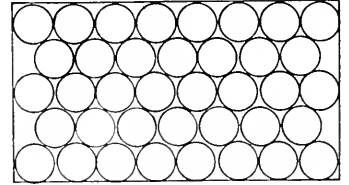
Illustrations for Apple Packs in the Standard Apple Box 10½x11½x18 Inches, Inside Measurements



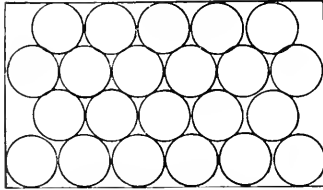
First and Third Layers



First and Third Layers

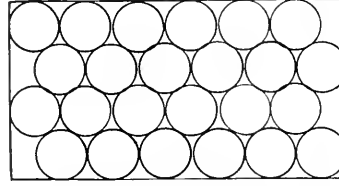


First, Third and Fifth Layers



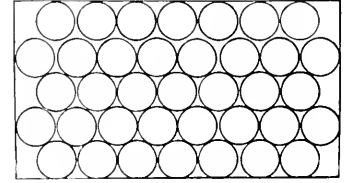
Second and Fourth Layers

Diagonal 2 2 pack, 4 layers, 88 apples



Second and Fourth Layers

Showing diagonal 2 2 pack, 4 layers, 96 apples



Second and Fourth Layers

3 2 pack, 4½ tiers, 5 layers, 188 apples
If layers are reversed there will be 187 apples

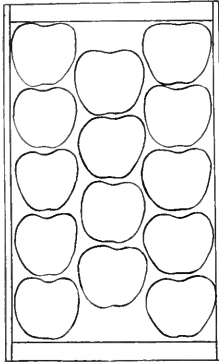


Figure 1—41 Apples
Northwest Standard Box

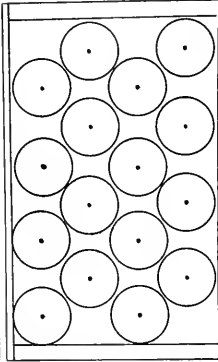


Figure 7—64 Apples
Northwest Standard Box

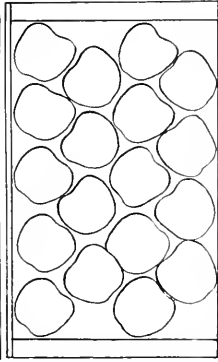


Figure 8—72 Apples
Northwest Standard Box

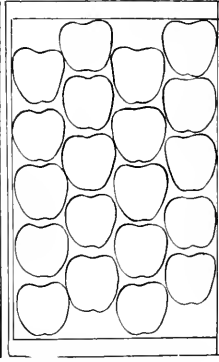


Figure 10—80 Apples
Northwest Standard Box

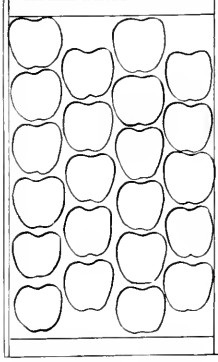


Figure 12—88 Apples
Northwest Standard Box

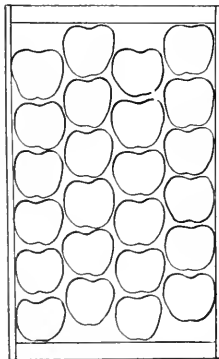


Figure 13—96 Apples
Northwest Standard Box

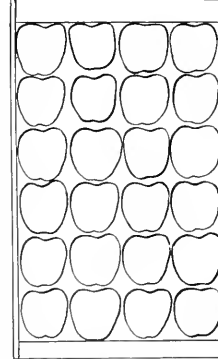


Figure 11—96 Apples
Northwest Standard Box

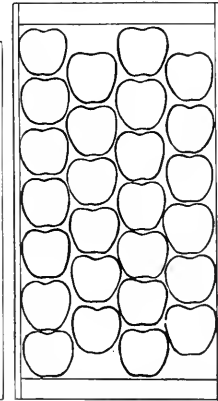


Figure 16—104 Apples
Northwest Standard Box

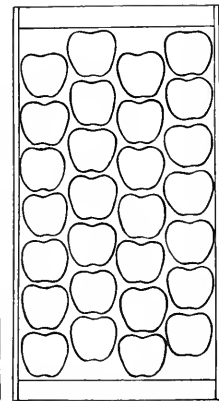


Figure 18—112 Apples
Northwest Standard Box

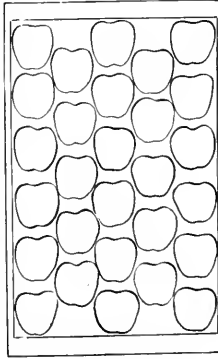


Figure 24—138 Apples
Northwest Standard Box

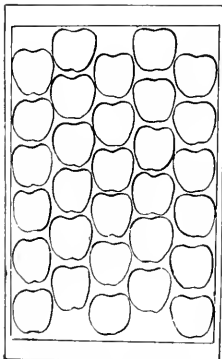


Figure 26—150 Apples Northwest Standard Box

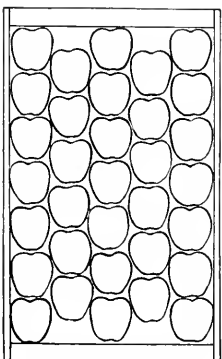


Figure 28—163 Apples Northwest Standard Box

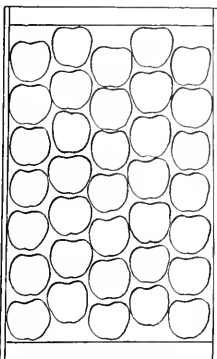


Figure 29—175 Apples Northwest Standard Box

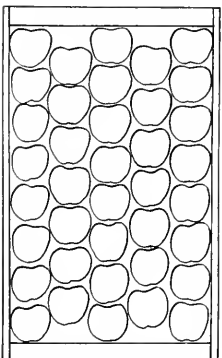


Figure 31—188 Apples Northwest Standard Box

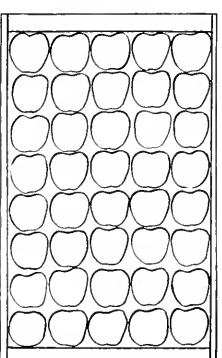


Figure 32—200 Apples Northwest Standard Box

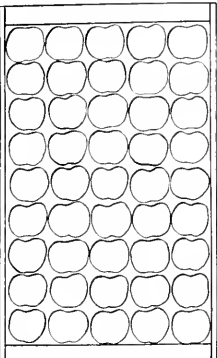
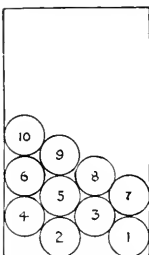
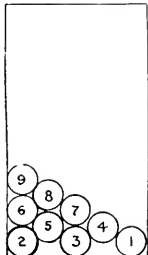


Figure 33—225 Apples Northwest Standard Box



How to Start a 2 2 2 Diagonal Pack



How to Start a 3 2 Diagonal Pack

NOTE: It being impossible to get cuts made of the 113 and 125 packs, we trust the following explanation will be sufficiently clear. The 113 pack is made similar to 138 pack, consisting of five layers and five rows, the rows having five apples in the long rows and four apples in the short rows, respectively. The 125 pack is packed similar to the 138, consisting of five layers, with five apples long.

Interest of the Railroads in the Fruit Industry

Mr. R. M. Roberts, before State Fruit Growers' Convention, Davis, California, June 1-6, 1914

THE discussion this evening is relative to the interest, one with the other, of the fruitgrower and the railroad. With your permission I desire to broaden this somewhat, that it may include the farmer and not alone the fruitgrower. The principles applicable to a part are applicable to the whole. It is to overwork a platitude to say that the interests of the railroad and the farmer are identical. They are identical and always will be. The great problem is to determine what procedure will best conserve the interests of both.

All of the larger railway systems are feeling their way in an endeavor to solve the problem, and it is in relation to the methods adopted by the Santa Fe system that I wish to speak.

Now let us see just what the problem is. The railroads above all things desire settlers to build up and develop unoccupied territory. In addition, they naturally desire the best possible prosperity in sections already developed, as the prosperity of the railroad is relative to that of the farmer. In years past the moving of the farmer from one

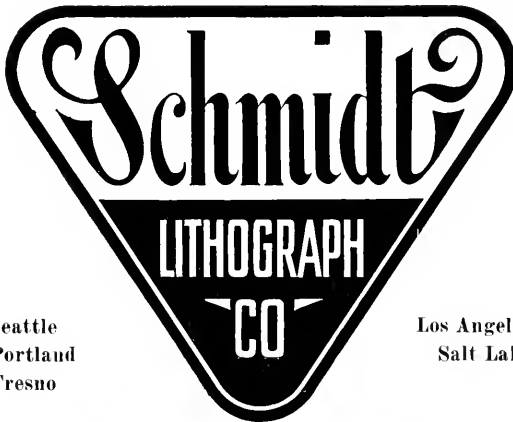
part of the country to another was not an exceedingly difficult matter. A few well-chosen words, a little waving of the great American flag and the lure of that which was "out yonder and over the hill" accomplished the desired result. They moved by thousands to the land of promise, often to find that they had not yet quite reached the end of the rainbow. Other countries looked on and copied. Canada in the past few years has taken from the Middle West 100,000 good American farmers and probably one hundred million of good American dollars. Both have been absorbed in the upbuilding of the lands of our northern friends. Few of these farmers have returned. They have found it almost impossible. The way of this does not concern us here tonight, but I simply use it to illustrate the increasing difficulty in the way of the American general colonization agent. Middle-Western farmers are increasingly prosperous and correspondingly harder to move. The cream of the Middle West has been skimmed. The real farmer, the man who is needed, he with some little capital, is, I say, difficult to move and this fact must be faced.

The great body of successful settlers from now on will be the plain man, with rather too little capital and probably not well equipped by way of agricultural knowledge to cope with California conditions and methods. That other hope of the man with a country to develop, the man from the city, is a problem of another sort. To pass over him quickly, I can only say that in the main, unless he is well protected by way of capital or income, he is possibly best advised when told to go slow and perhaps advised to remain where he is and practice plain, old-fashioned thrift as a method of "get rich quick." Our one great hope is the real farmer, with some capital, a strong back and not too weak mind. It is with this man that we are vitally concerned, and the corporation which I have the honor to represent is blazing a trail in California which we hope will prove a worthy path to follow. In this work, so far as conducted in California, we have the hearty support of this increasingly great and serviceable agricultural college of the State of California.

Now we are in the business of securing settlers, in developing a great country and also,—and to me this is the most important thing,—we are aiding them to become, as rapidly as possible, self-supporting and prosperous. Certainly the requirements of colonization and settlement are not being ignored. Let us mention briefly these requirements. The first is that the prospective settler be not encouraged, nor allowed if possible, to take up land when he is ill equipped by way of capital and skill in farming to successfully fight the battle. To this end we endeavor to find out, before the man and his family leaves his Eastern home, whether or not he is likely to become a successful settler. He is informed

Apple Labels

You get the most for your money by being in touch with and dealing with headquarters. If you are not already using labels better get in line. Let us tell you why you'd better.



Seattle
Portland
Fresno

Los Angeles
Salt Lake

Main Office and Works: San Francisco
2nd and Bryant Streets

truthfully as to the conditions he must face and advised as well as possible of his chances of success. To avoid paternalism, he is encouraged to use his own judgment and take full advantage of all avenues of information, such as the college of agriculture and the farm advisers. He is further urged not to buy "unsight and unseen," but make a personal investigation of the country before purchasing. Should he decide to make the venture, he is offered the services of the agricultural demonstrator in gaining the knowledge of that country best adapted to the kind of farming he wishes to pursue.

I find that there is a tendency on the part of the settler to over-buy, to load up with too much land and too much responsibility. The result of this is to discourage this new man, both physically and financially, and we take great pains to advise these new citizens of California as to what they may expect and what can be done with a given area of ground. Once he has selected his land, it is the business of the demonstrator to call as often as seems advisable and consult with this "new beginner," if I may call him such, as to the layout of his farm, what crops, how, when and where to plant, proper farming implements, and help him to apply the principles of agriculture to California conditions. We hope the time will come when this man can obtain additional help, especially by way of agricultural credits. This latter is a most important feature, and it is encouraging to note the progress being made in this direction.

I have now given a very general view of what may be considered the most important feature of the work which we are trying to do. In addition to this, service work along the lines of the farm advisory idea is performed with a view to helping established farmers better their output, fight pests and increase their efficiency. A ramification of the work includes having accurate knowledge of all land for sale in the territory of the railroad, that inquiries may in turn be accurately answered. The proof of this work is in the result obtained. Thus far, after one year of effort in California, we are greatly encouraged. We are further encouraged to take a hopeful view in considering the successful work done by six of our agricultural men in Texas, Southwestern Kansas and New Mexico, where these men have labored for five or six years, the result showing increased efficiency on the part of the farmer and the railroad. Here in California farmers and prospective settlers have taken advantage of the service, Californians have supported it and we have some pride in pointing to a considerable evidence of concrete results. It is slow work, but this is expected, and in the end I think we will all find that the rebuilding of California in an agricultural sense is going to be most rapid by not going too fast and in building on the prosperity of the individual.

53rd Annual Oregon State Fair

Salem, September 28—October 3, 1914

\$20,000 Offered in Premiums

A generous portion for Agricultural and Horticultural Products.

The new \$60,000 pavillion will be occupied for the first time. Come and bring your products. Send for Premium List and Entry Blanks. For particulars address

FRANK MEREDITH, Secretary, Salem, Oregon



C. E. Virden, General Manager of the California Fruit Distributors of Sacramento
Which handled eight thousand cars of fruit in 1913.

California Fruit Distributors

Mr. Charles E. Virden, before Fruit Growers' Convention, Davis, California

TWENTY years ago the State of California sent out 1,293 cars of deciduous fruit, consisting of 162 cars apricots, 180 cars cherries, 1,010 cars grapes, 1,289 cars peaches, 465 plums, 1,187 cars pears. Last year there were shipped from this state 13,313 cars of deciduous fruit, consisting of 158 cars apricots, 231 cars cherries, 6,363 cars grapes, 2,359 cars peaches, 1,706 cars plums, 2,496 cars

pears. It is estimated that the total movement out of the state this year will be even greater than in 1913.

Twenty years ago the tonnage sent out was distributed in less than 100 markets of the country and to a very great extent the cars were distributed on a consignment basis. Prior to 1902, even with a comparatively small tonnage, the results obtained in the shipment of deciduous fruit proved very

unsatisfactory to the growers and they realized but very little for their fruit, and it was found necessary to form some sort of a distributing organization, and in 1902 the California Fruit Distributors was incorporated with the sole object of acting as a central marketing agency for the growers, packers and shippers. The capital of the corporation is nominal. No stock dividends are paid or profits undertaken. The organization maintains its general headquarters at Sacramento, and at this time consists of twelve shipping companies who operate in the state. A number of these companies are composed solely of growers. The board of directors consists of one member from each company and at this time eight of the number are actively engaged in the growing of fruit. The board of managers, consisting of six members, are selected by the board of directors. The board of directors hold monthly meetings. The board of managers meet weekly during the operating season. The business of the organization is in the hands of a general manager, subject to the direction of the board of managers and board of directors. Each and every member of the board of directors has an equal voice and an equal vote, no matter what their tonnage may be.

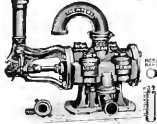
The operation of the California Fruit Distributors is a direct benefit to the grower and in no way is it a tax upon the grower, as the revenue necessary to maintain the organization is derived from the shipper, who makes the usual charge of seven per cent for the handling of the grower's business, which commission charge was not changed with the advent of the organization, and out of this certain percentage the California Fruit Distributors must be paid by the shipper. Such shipper pays the organization only the actual cost of operation in proportion to the tonnage that the organization handles for him. The organization has been steadily engaged in creating f.o.b. markets, and today the fruit of California is shipped into approximately 250 markets of the country, and this distribution is constantly being widened. The organization maintains selling agents in all of these markets, maintains general traveling salesmen who are assisting dealers to establish and create a demand for California fruit.

Since 1902 much has been done by this organization in bringing about much better transportation and facilities for the handling of delicious fresh fruit shipments to the distant markets. We have succeeded in securing a more regular and dependable service. Prior to 1902 the service to Chicago was approximately ten to fifteen days. Today we are securing regular service that enables us to sell fruit in the Chicago market on the morning of the seventh day, and in New York market on the tenth day. We have better icing facilities. We have a better tracing system, so well perfected that we are in direct touch with the movement of each and

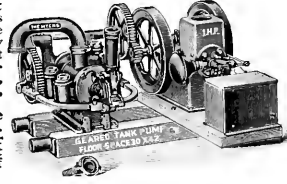
MYERS LOW DOWN TANK PUMPS

For Operation by Hand or Gasoline Engine.

There is nothing quite as handy about the farm for general pumping service as a MYERS TANK PUMP. Easy to move from place to place, a tank pump is not only practicable for filling thresher tanks but adaptable to many pumping jobs—draining cellars and barnyards, watering stock, irrigating, washing vehicles, FIGHTING FIRES, etc.



Your gasoline engine will operate a MYERS. Write us for circular showing different styles and name of nearest dealer.



F. E. MYERS & BRO. 120 Orange Street, ASHLAND, OHIO

Fruit Graders

Our sizing machines at \$50.00 and \$75.00 are accurate, have large capacity and will not bruise your fruit. No better graders built.

Send for our catalogue.

Western Fruit Grader and Mfg. Co.

GRAND JUNCTION, COLORADO



every car, enabling us to make immediate diversions. Diversion rules are broader. Refrigeration charges have been materially reduced. Where we formerly paid as high as \$90 per car, today we have a flat rate, for example, to Chicago of \$75 for pre-iced cars from most all points. We were formerly penalized for the melting of ice during time of loading. This we succeeded in having eliminated. The freight rate to New York a few years ago was \$1.50 per hundred pounds and to Chicago \$1.25. Through our efforts we obtained a reduction to \$1.15 to practically all Eastern points. We obtained a consolidation rate which has proved of great benefit to the industry in the assembling of cars. We have obtained from the express companies a one-stop-in-transit privilege for the purpose of loading and a one-stop-in-transit privilege for the purpose of selling. We have been and are now engaged in urging upon the railroad companies the adoption of a one-stop-in-transit privilege for partial unloading. This, if granted, will enable us to develop a lot of smaller markets. We are continuously seeking the co-operation of the railroads of the country for the general betterment in the handling of the fruit tonnage.

Since the formation of the organization in 1902 the California Fruit Distributors have handled 79,320 cars of fruit, which is a little in excess of 60 per cent of the total tonnage moved during that period, and through the efforts of the organization the deciduous fruit business of California has been placed on a far more safe and stable basis than it occupied prior to 1902. Our members are at all times performing the most efficient service possible for the growers by working

for standardization, improving the pack, quality and loading facilities, etc. As soon as the cars are loaded the fruit passes under the control of the California Fruit Distributors, which acts as a neutral central selling agency, treating the fruit of all growers alike, whether they are large or small; performing the same functions for each and every one and having in mind but one thought and effort, and that to obtain the very widest distribution on a safe and sane basis, keeping every conceivable market fully supplied—not oversupplied, not undersupplied.

Potato Convention

The potato emergency convention will convene at Stockton, California, on the 8th and 9th of September. This change is made at the suggestion of the United States Department of Agriculture and will bring to us Dr. Appel, a very noted potato pathologist from Europe, and Dr. Orton and Professor Stuart, experts from the United States Department of Agriculture, none of whom could be present at the earlier dates.

The tuber moth is a damaging pest of the potato. The caterpillar not only ruins the infested tuber but may be carried in it wherever the tuber may go, and so is a menace ever and always. It is clear then that a state or region free of the pest is warranted in taking stringent measures to remain free. This necessitates action to restrain all importation of affected tubers. There are only two ways to insure this imperative necessity: Either the shipper must inspect so carefully and weed out so rigorously that no infested potatoes are shipped or else all growers in moth-free sections must declare and

enforce a strict quarantine. As we have not exercised the needed caution in making shipments, British Columbia, Idaho and Colorado, actually, and Oregon and Washington, practically, have resorted to the quarantine. Other states are likely to follow if we are not aroused to immediate and effective action. The magnitude of our potato interest is large, and the injury to our growers and shippers from this embargo is great.

Unfortunately this moth is very widely distributed throughout California, though many sections, possibly whole counties, are free of attack. This fact gains wide publicity through "Farmers' Bulletin 557" of the United States Department of Agriculture. We quote: "For many years the potato tuber moth has been the worst potato pest in California. It has now reached the State of Washington and Southern Texas and menaces adjacent states." It is also reported from Colorado and doubtfully from North Dakota. In all but California its distribution is quite limited. This, of course, works doubly to make our danger the more imminent. What adds to the gravity of the situation is the fact that the moth has been in California for years and in the other localities but a brief period, and all the other localities are large consumers of California-grown potatoes.

We see then that our only escape must come through wide and quick education of all potato growers that the moth may be held in check by all growers, Orientals as well as Americans, and that inspection be so rigid that no infested potatoes are shipped from our state. This convention is called to take steps to secure this education of all growers that they may eradicate the moth, and to arouse all to the absolute necessity of the most rigorous inspection that not a single infested tuber shall be shipped to any other state or any tuber moth-free section. There should be a large delegation present at Stockton from British Columbia and all the states contiguous to California, also from any moth-infested region of our own state.—A. J. Cook, State Commissioner of Horticulture, Sacramento, California.

The Panama Canal is going to be an important factor in the movement of the apple crop of the Northwest. Without question, when proper traffic arrangements are made, fruit can be shipped direct through the canal without transfer to many export cities at much less expense than in the past by rail to New York City and there held in cold storage, with extra charges for transferring. The Panama Canal should certainly reduce the price to European consumers and result in a large increase in the consumption of fruit in those countries.

Mr. C. M. Furry, who for many years was assistant manager of the Wenatchee Fruit Growers' Association, has accepted a position with the Northwest Fruit Exchange in the Yakima district.

The Palmer Fruit Grader and Sizer

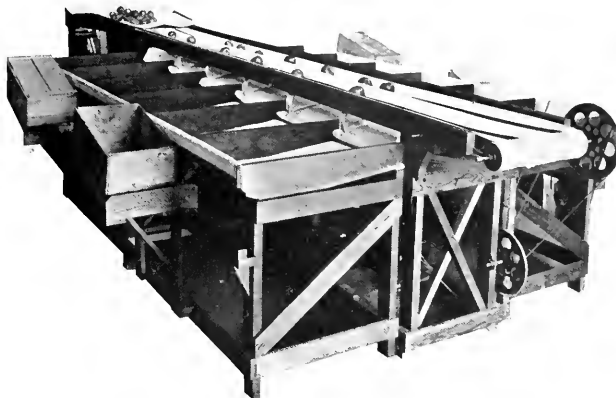
Price \$125, f.o.b. Hood River

Including packing tables, all complete, except Electric Motor,
which will be furnished for \$15.00 extra

Makes two grades at the same time. Makes six divisions in sizes, which has been found by experienced orchardists and packers handling large crops to be absolutely the most practical number in division of sizes for efficient, rapid and economical packing.

Grades and sizes all kinds of fruit of all shapes and sizes—

Apples Pears Peaches, Etc.



Grades and sizes, absolutely eliminating bruising. Can be adjusted at two points, so the bins will fill evenly, whether fruit runs to large or small sizes. The Palmer Grader and Sizer is the only machine so far as we know having this extremely important feature.

The construction is simple; a boy can operate it and keep it in order.

Small and compact. The Grader and Sizer, with packing tables set up ready for operation, including space for graders and packers, occupies floor space 12x18 feet. Can be easily moved through a door 2½ feet wide.

Sorts to sizes, so packers of limited experience can do good work. Increases the efficiency of packers 30% to 50%.

Will save in grading, sizing and packing from 3 to 10 cents per box. A grower with 2,000 boxes of fruit can more than save the cost of a Palmer Grader and Sizer in one season by using one, and do his work quicker and better.

Capacity 1,000 boxes per day

Send for further particulars and descriptive literature.

Will make arrangements for exclusive territory with dealers or agents.

Address

PALMER BUCKET CO., Hood River, Oregon

A Money and Fruit Saver



Ready to Empty

A Higher Standard Better Fruit

Successful orchardists of the Northwest are using the Palmer Bucket, because it prevents the bruising and saves time and money in emptying the buckets in field boxes.

Ask your dealer to show you how the bucket is operated—or send \$1.00 and we will forward one by express.

Special prices on quantities of one dozen or more.

Will make arrangements for exclusive territory with dealers or agents.

Address



Emptying

PALMER BUCKET CO., Hood River, Oregon

EXCLUSIVE TERRITORY

BETTER FRUIT

HOOD RIVER, OREGON

Official Organ of The Northwest Fruit Growers' Association
A Monthly Illustrated Magazine Published in the
Interest of Modern Fruit Growing and Marketing
All Communications Should Be Addressed and Remittances
Made Payable to

Better Fruit Publishing Company

E. H. SHEPARD, Editor and Publisher
H. E. VAN DEMAN, Contributing Editor

STATE ASSOCIATE EDITORS

OREGON

C. I. Lewis, Horticulturist.....Corvallis
H. S. Jackson, Pathologist.....Corvallis
H. F. Wilson, Entomologist.....Corvallis

WASHINGTON

A. L. Melander, Entomologist.....Pullman
O. M. Morris, Horticulturist.....Pullman

COLORADO

C. P. Gillette, Director and Entomologist.....Fort Collins
E. B. House, Chief of Department of Civil and Irrigation
Engineering, State Agricultural College.....Fort Collins
E. F. Taylor, Horticulturist.....Grand Junction

IDAHO

W. H. Weeks, Horticulturist.....Lewiston
S. Thornber, Horticulturist.....Moscov

UTAH

Dr. E. D. Ball, Director and Entomologist.....Logan
Leon D. Batchelor, Horticulturist.....Logan

MONTANA

O. B. Whipple, Horticulturist.....Bozeman

CALIFORNIA

C. W. Woodworth, Entomologist.....Berkeley
W. H. Voth, Entomologist.....Watsonville

BRITISH COLUMBIA

R. M. Winslow, Provincial Horticulturist.....Victoria

SCRIPTION PRICE:

In the United States, \$1.00 per year in advance

Canada and foreign, including postage, \$1.50

ADVERTISING RATES ON APPLICATION

Entered as second-class matter December 27, 1906, at the
Postoffice at Hood River, Oregon, under Act
of Congress of March 3, 1879.

The Northwest Apple Crop.—An estimate is more or less a matter of guess this early in the season in the apple business. Very few associations or shipping concerns have called for estimates from the individual growers. Until this is done estimating is really a matter of guess on the part of those who are pretty generally informed about the quantity grown in previous years and the set this year, in a comparative way. While the editor does not assume to do any estimating he ventures to make a guess based upon the quantity shipped in previous years and the setting this year.

He makes the following guess: Wenatchee, 4,300 cars; Yakima, 5,800 cars; Eastern Washington, 500 cars; total for the State of Washington, 10,600 cars. Hood River, 1,200 cars; Rogue River, 500 cars; Willamette and Umpqua, 250 cars; Mosier, 50 cars; Eastern Oregon, 800 cars; total for the State of Oregon, 2,800 cars. Montana will ship 500 cars and Idaho 1,500, making a grand total for the Northwest of 15,400 cars.

No place in the Northwest was the setting very heavy. The shedding during the blossoming time and the June drop were extensive. Many clusters shed completely. Most of the others shed to one in a cluster. While no grower seems to have a large crop, all growers have a fair crop. This year's crop might be put down as somewhere from 65 to 75 per cent of what would be a normal, good sized yield. A splendid growing season during the remainder of the year may increase this quantity. On the other hand, a lack of favorable growing conditions may reduce the quantity. Marketing conditions will be a factor in the quantity of apples that are boxed and shipped.

It is expected this year that the grading rules will eliminate and send many apples to the vinegar factory and cider mill that were shipped in 1912. While it is reasonable to assume the crop may be somewhere near the 1912 crop, still on the other hand the grading rules may make the crop shipped considerably less than the 1912. Prices will be a large factor in determining how extensively the C grade or cooking apples will be packed.

The Compatibility of Insecticides and Fungicides.—There is no problem which is more complicated to the fruit-grower than the mixing of sprays. Naturally the fruit-grower, not being a chemist, has no knowledge of what sprays can be combined and what cannot be combined. Certain sprays cannot be combined without impairing the efficiency and without damaging the fruit or foliage. Other sprays can be combined where the efficiency is slightly reduced without damage to the fruit. In previous years the fruit-grower found out that sprays were injurious or inefficient in combination by practical experience, consequently much damage has resulted in the loss of many hundred dollars to individual orchardists. Professor G. P. Gray has given this matter very careful study and has prepared an article with a table, which appears in this issue of "Better Fruit." Chemistry has been taken into consideration as well as actual results, and therefore we believe the table and the article will present some valuable information that has never been published in any fruit journal before and therefore is entirely original. In fact nothing along this line, so far as we know, has ever been given out by anyone previous to this article by Professor Gray. Every fruit-grower who sprays, and every fruit-grower should spray, should read this article. It may prevent the loss of hundreds, even thousands of dollars.

The Grade and Pack.—Grade and pack has been a matter of development and evolution. The editor of "Better Fruit" wrote the first set of grading rules that were ever written in the Northwest, perhaps anywhere, in reference to packing apples, in the year 1904. Since then each year the Hood River Apple Growers' Union has made slight changes and improvements in these rules. Other districts began to adopt rules for grading and packing, also to improve them from year to year. This spring fruitgrowers, inspectors and men engaged in handling fruit met in Spokane in conference, and the result was the adoption of a set of rules for packing and grading. They are similar to the rules used in 1913, but improved in various ways, and will result in a better understanding of the requirements. It is hoped and believed that these rules will meet with general satisfaction. If all the marketing associations, shipping concerns and private concerns as well as the individual shippers would adopt this set of rules

it would be a step in the right direction, because it would result in one set of packing and grading rules for the entire Northwest. If this year's experience indicates an improvement in any way it is to be hoped that people interested in the fruit industry will all get together next year and improve these in such a way as to meet with the approval of every fruitgrower and shopper of the Northwest.

The Crop Estimate for 1914.—The July government report gave the estimate of apples at about ten per cent above the ten-year average. It seems at the present time that estimates are more or less indefinite and actual yields will depend largely upon growth and cleanliness and freedom from insect pests during the remainder of the season. So much has been done to improve the grade of apples that undoubtedly a large per cent will be sent to the vinegar factories and cider presses this year than ever before. This is particularly true in reference to the Northwest. Only the best grades of the Northwest will justify freight shipment East. The estimates at the present time refer generally to the quantity on the trees and include what must be eliminated as culls later in the season. The improvement in marketing organizations will do much through wider distribution to assist in marketing the crop in an intelligent way at satisfactory prices. The immense amount of advertising and publicity that has been given the apple during the last season certainly should be a factor in stimulating a greater consumption, which ought to help the marketing conditions for both the dealer and the grower.

The Raker Bill.—The latest advice reports that the Raker bill was placed on the House calendar with Congress for July 20th. This bill has received the universal support of all the apple-growing sections of the Northwest and the Pacific Coast. In fact the support is almost unanimous. There is every reason to hope at the present time that Congress, although rushed with other matters, will pass this law. It is to be hoped it will be passed because already a bill has been passed for the standardization of apples packed in barrels, and there is nothing more important at the present time for the apple growers than a law standardizing the apples packed in boxes.

Packing Apples in Small Boxes.—Many people interested in the apple industry of the Northwest have at various times discussed the advisability of packing apples in small boxes. A short, interesting article from the Northwest Fruit Exchange, appearing elsewhere in this issue, gives some interesting data on this subject well worth the attention of the growers who have had in mind the packing of apples in smaller boxes than are being used at the present time.

Prosperity Must Come Soon.—Factories, owing to the uncertainty of conditions, have laid in no supply. Jobbing and retail houses have put off purchasing until their stocks have been reduced to a minimum. In fact merchandise stocks generally throughout the country have been so depleted that frequently it is impossible to get what you want. The surplus has been consumed and there is not enough raw product or manufactured merchandise on hand to take care of the present business. Confidence apparently is returning rapidly. The banks are full of money; reserves far above required amount. The crops are large all over the entire United States. The harvesting of crops will start money in circulation and the public will have to buy on account of the depleted supply. Any good factory or any good going concern with a good financial standing and moral credit can secure all the money it needs for purchasing supplies, which will mean cash to the farmers for their products.

Setting and Dropping of Fruit

Continued from last issue

Those who do not find pruning a sufficiently drastic method of checking wood growth to augment fruitfulness may resort to the removal of a ring of bark from the trunk of the tree. In rather extensive experience on the grounds of this Station we have found ringing the bark of some use with the apple. Our practice is to remove a ring of bark from one-half to one inch wide from young apple trees at the period when the trees are making the greatest growth, usually about the middle of June. If the ringing is done earlier in the season or later in the season than June, injury is certain to result. Should it be done when the growth is being checked by drouth injury would also result. The theory upon which ringing is based is simple. Crude sap passes from the roots to the leaves through the outer layer of wood. In the leaves this crude material is acted upon by various agencies and transformed into food substances. This accumulated material passes downway through the inner bark to be distributed throughout the plant where needed. When trees are ringed the flow of sap upward through the wood continues as before the operation, but the newly made food substance cannot pass below the girdle, and therefore accumulates above and is used for the formation of fruit buds, though at the expense of other parts of the plant.

Is heredity a factor in bud formation? Can the fruit-bearing habit be passed down from one tree generation to another? Can the habit be augmented and intensified by selection? Individuals in an orchard vary as to time of coming into bearing, regularity of bearing and number of buds formed in any season. But it has not been proved that buds chosen from the trees best in these respects would produce trees that are early bearers, or more

Buy A Good Ladder

IT COSTS BUT
LITTLE MORE.

The Mitchell Ladder

WILL OUTLAST TWO
ORDINARY LADDERS

Every step is metal reinforced with galvanized pressed steel — riveted, not bolted.

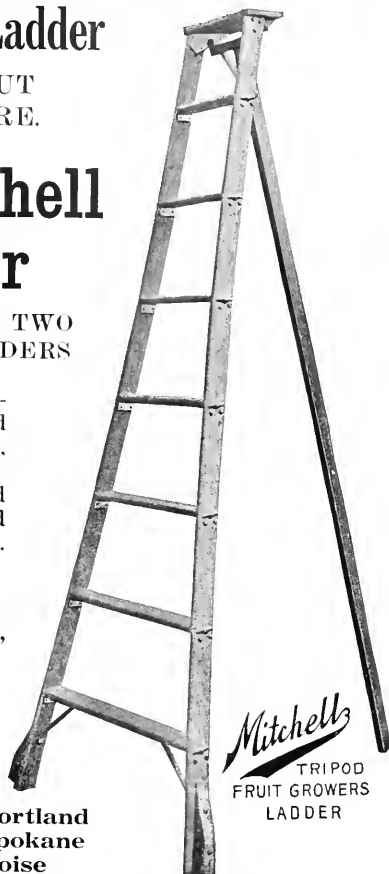
The head and tripod are heavily reinforced and will not break down.

Write us for
Circular and Prices

Implements, Water Systems,
Pumps, Engines, Etc.
for the Fruit Grower

Mitchell
LEWIS & STAYER CO.

Portland
Spokane
Boise



regular in bearing or more fruitful. The present trend of science is against such a possibility. Even were it possible, there are a number of practical drawbacks. Thus, from tree generation to tree generation constitutes a period of time too long for most men to bend their efforts, especially with that clear conception of exactly what is wanted that is required in the intricate problem of plant selection. The variations at best are but slight and hundreds of trees would have to be examined to find one or two from which to start a new race. One would have to make sure, too, that the selected plants would not fall behind their fellows in other characters. The variations mentioned are almost certainly the result of environment and are not passed on from one tree generation to another, so that even were the obstacles not so great in practicing selection that few men would be able to or would take the pains to surmount them, heredity could not be counted as a factor in causing the formation of buds.

Another phase of the subject of fruit-bud control is the biennial bearing habit of some varieties of the several fruits and especially of the apple. So marked is this habit in apples that we can ascribe it as one of the characters of that fruit. A good deal of attention has been given by orchardists and experimenters to biennial bearing in apples, but as yet no one has been able greatly to change nature's way. It is maintained by some that the biennial bearing habit is due to the heavy crop, which exhausts the tree's energies, and that a light crop follows because of such exhaustion. This can be but partly true; for all can call to mind two, three or four heavy crops of some varieties, after which the trees settle down to bearing in alternate years. Nor does thinning, often proposed as a remedy for over-bearing, prove of much value. Pruning seems to alter the condition but little. We have on record several experiments in which blossoms were stripped from the trees during the bearing year to cause the setting of

BALTIMORE THE SOUTHERN GATEWAY

Our location and facilities are in the 4A class.

We have also reservations in a new Cold Storage House for a number of cars of Box Apples—on which a liberal cash advance will be made.

"The Pioneer Box Apple House" **F. BORDER'S SON CO.**

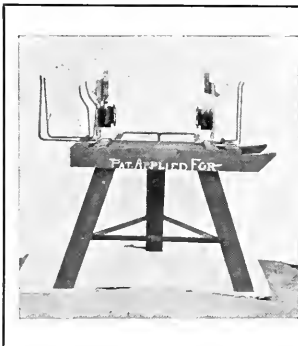
fruit during the off year. The trees so treated usually bear some fruit the off year, but seldom a satisfactory crop. Nor is the matter one of food supply. Orchards amply supplied with food are not always annual bearers. Peculiarities of the season have something to do with alternate bearing, but do not wholly account for it. Eliminating all the above conditions—admitting, however, that all have some influence on the bearing habit—we must conclude that the biennial bearing habit of apples is a peculiarity of the species. Good cultivation, an ample supply of food at all times, careful attention to pruning and training, proper control of pests and systematic thinning are all means which can be used to some extent to circumvent nature.

Leaving now the formation of fruit buds, let us see what can be done to control the development of fruit buds. Blooming, the prelude of fruiting, had little significance to the fruit grower until the discovery was made that many varieties of several fruits were unable to fertilize themselves and that failures of fruit crops were often due to the planting of infertile varieties. The knowledge obtained by experimenters in this field has to some degree modified the planting of all orchard fruits. Pollination and fertilization are events which take place in blossoms that must be reckoned with by fruit growers.

It is necessary to distinguish between pollination and fertilization, terms supposed by many to have the same mean-

ing. Pollination is the dusting of the stigma, the female organ of a flower, with pollen, the male element. Fertilization is the process in which the male cell unites with the female cell. Fertilization takes place only after pollination, but a flower may, of course, be pollinated and fertilization not take place, a fact always to be remembered. Fruits set and develop, for most part, only after fertilization. The young fruits when first formed have but a slight hold upon life. Unfavorable influences, no matter how slight, may cause them to perish. Fertilization gives the tiny fruit life, and enables it to hold upon the parent plant through nourishment drawn to supply the embryo which has been formed in the seeds. Thus fertilization usually, not always, determines whether a fruit is to develop or to drop. Shortly after blooming time we have the fruit "drop," resulting for most part from a lack of fertilization.

Fertilization, however, does not insure the complete development of fruit. Even after a perfect union of male and female cells, so far as it can be determined, much fruit drops in every orchard and without regard to whether the trees bear few or many blossoms. Crops of many varieties of several fruits do not set because of the infertility of the blossoms—that is, with many fruits pollen may be produced in abundance, seemingly perfect in appearance, and potent on the pistils of other varieties, but which may wholly fail to fertilize the ovaries of the variety from which it came. There is a great difference in the quantity of pollen produced by the varieties of the several fruits, but it is doubtful if insufficiency of pollen is a factor of much importance in the failure of trees to set fruits. Varieties that do not set fruits often have abnormal or abortive pistils or stamens. A high percentage of abnormal flowers nearly always indicates a weakness in fruit setting. Another cause of the failure to set fruits is the difference in time of maturity of stamens and pistils. When these organs do not mature at nearly the same time, fruits do not set unless pollen is supplied from some other source. The female organs of fruits are receptive, however, for several days, and the pollen is not shed at once from all anthers



FOR THE PRACTICAL ORCHARDIST

The Tosch Nailing Bench

For accuracy and speed and a well finished, durable box, its use is recommended by the leading orchardists of the Northwest.

Price, \$15.00, Complete
f.o.b. Cashmere or North Yakima, Wash.

AGENTS WANTED

Detailed information from

Tosch Manufacturing Co.
CASHMERE, WASH.

The Biggest Apple Dealers in California

WRITE OR WIRE US FOR DETAILED MARKET INFORMATION

A. LEVY & J. ZENTNER CO.

Davis Street (from Washington to Oregon Sts.) San Francisco, California

COYNE BROTHERS

CHICAGO

Distributors High Grade Box Apples

We have the cream of the finest orchards in the Wenatchee Valley under contract, consisting mainly of Winesaps and Jonathans.

We are short on High Grade Spitzenbergs. If you have not disposed of this variety, get in touch at once, learn our method—absolutely safe for the grower. Write or wire us or address

G. B. LANHAM, Pacific Coast Representative, Wenatchee, Wash.

and is produced with such prodigality as in most cases to insure the pollination of late-maturing stigmas. The solution of the problem of self-sterility in the main, then, is to so plant that varieties will be cross-fertilized. It is obvious, if cross-pollination is to play an important part in fruit growing, in planting to secure it varieties must be chosen which come into blossom at the same time as those that they are expected to fertilize.

There are several causes of dropping other than lack of fertilization that need the attention of fruit growers. Weather conditions have much to do with the dropping of fruit. Prolonged cold saps the vitality of young fruits

and causes many of the more tender ones to perish and let go their hold upon the tree. Rain, whether a dashing shower or a prolonged drizzle at a low temperature, or even an extremely moist atmosphere without a fall of rain, weakens the chances of full development of fruits if such conditions prevail soon after fruit formation. Sometimes a lack of light causes fruit to drop, and thus we may explain the greater number of fruits at the tops of trees, on well-pruned trees, in open-centered trees and in orchards not thickly planted. The "June drop," especially of the peach, may be explained in part as follows: When fruits reach a certain size the food stored in the tree the

previous year is exhausted. Now if the leaves of such trees are not fully expanded and if they are not able to furnish a new supply of food, the young fruits often drop. The June drop is especially liable to take place if there be one or more of the unfavorable conditions mentioned in the previous paragraphs. With some fruits there is a tendency to drop in late summer when seeds are making great demands for food. In such cases the trees become exhausted and cast a part of their load. If at this time there be a drouth, or, on the other hand, too much rain, as is often the case, fruit not infrequently drops in considerable quantities.

We make a specialty of

Catalogs Booklets Circulars

*for Nurserymen, Fruit
Growers, Manufacturers
and Selling Agents*

Write us for specifications and information. Quality and Service

F. W. BALTES AND COMPANY
FINE PRINTING Portland, Oregon

**ACID BLAST
ETCHED PLATES**

*We have installed
the only etching
machines in the
State of Oregon*

*Blast etched cuts
have a printing
quality which has
never before been
obtainable with
process engraved
plates*

THEY COST THE SAME
AS THE OTHER KIND

**WE MAKE
CUTS
THAT PRINT**

HICKS - CHATTEN
ENGRAVING CO.
607 BLAKE-McFALL BLDG., PORTLAND, OREGON

Light Draft

**THIS
disk harrow
saves 25 to
50% in power**

Which means it saves one horse at the very least. It also saves one man. And, furthermore, this

Cutaway

(CLARK)

Double Action Disk Harrow

pulverizes the soil finer than any single harrow working in "half-lap." And more—it pulverizes finer than any two single harrows attached in tandem. Its rigid main frame holds the rear disks so that they cut just midway between where the fore disks cut. All soil is pulverized to the full depth to which the disks are run. Ask your dealer to show you a CUTAWAY (CLARK) Double Action. If he doesn't sell CUTAWAY (CLARK) harrows, write us. Don't accept a substitute. We ship direct where we have no agent. Ask for free catalog. "The Soil and Intensive Tillage."

The Cutaway Harrow Company
Makers of the original CLARK disk harrows and plows
940 Main Street Higganum, Conn.

Tarred Orchard Yarn

But little time remains for tying orchard trees. The demand for tying this season has been unusually large and distributed over much larger territory than in former seasons, thus proving the efficiency of supporting trees by this method. Former users have repeated its use and many new ones are testing it.

It is now about time for cutting out old running berry vines and tying the new growth. One-Ply Orchard Yarn is just right for this purpose. It is not expensive, is easily tied, durable and saves the vines from being broken down by snow or sleet. Vines can be distributed over supports much better when properly tied, thus increasing the yield because less vines need to be cut away.

Sold by all dealers handling Orchard Supplies.

MADE BY

Portland Cordage Company
PORTLAND, OREGON

Fruit Boxes

OF ALL KINDS

APPLE BOXES

OUR SPECIALTY

Bridal Veil Lumbering Co.
Hood River, Oregon

It seems worth while with trees which habitually drop their crop to try to direct the food to the fruit-bearing branches by pruning out surplus wood, cutting out water-sprouts and stimulating the growth of fruit buds the previous season. All factors which are conducive to the best nutrition of the tree influence its capacity to retain the crop. Fruits often fall because of insect or fungus injury to tree or fruit. The effects of serious injury to the foliage or the puncturing of the fruit by any one of the innumerable insect

pests are too well known to demand attention, though insect injury must by no means be thought to be a sure cause of the dropping of a crop. Some insects, as codling moth, curculio and the berry worms, may remain until the fruit is fully developed. Lastly, it may be of distinct advantage for a tree to drop a part of its load if it have more fruit than it can bring to the best maturity. If it does not do so naturally, the fruit grower should take the matter in hand and thin the crop.

The weather, as we have previously indicated, has much to do with the setting and dropping of fruit. A study of the weather as it affects the formation and development of fruit buds was made at this station several years ago, covering a period of twenty-five years beginning in 1881. Since the report of this study can no longer be had, the main conclusions are again published here. During this twenty-five-year period late frosts ruined the fruit crops in Western New York in four years, seriously lessened the yield in five years, and did much damage to pears, peaches and plums in three other seasons. That is to say, in more than half of the twenty-five years "unseasonable" frosts caused serious loss to fruit growers over the section as a whole. The years of frosts appeared in cycles, as there was but one harmful frost during the first eight years of the twenty-five, then for six years in succession the crops were damaged seriously, while during the latter half of the period the frosts were more evenly distributed. During seven years when frosts did little or no harm, cold, wet weather played almost as disastrous a part and reduced the crops to unprofitable proportions; while in five of the years of frost the damage was increased by the effects of cold storms. These storm years, like the frost years, came in cycles. A first short period of three years, beginning in 1881, was marked by storms, as was a longer period of seven years beginning in 1888. During the first period, wind strong enough to harm the blossoms, even without the accompanying rain, was a feature of each season, as was also the case in 1905; while in another year, without injurious rain storms, the wind alone did considerable harm to blossoms. Sunshine at blooming time, with warm, dry weather, marked five years only of the twenty-five; and in each of these years the crops were excellent. In three of them the records were broken for one or another of the fruits and enormous yields were secured from practically all fruits. From these facts, and more detailed data given in the original bulletin, we must conclude that rain and the cold and wind that usually accompany it in mid-May cause the loss of more fruit than any other agency. Killing frosts take second place as destructive forces, though the sudden, plainly evident harm they do attracts more attention and causes more complaint than the slowly developing, more concealed damage from a long, cold storm without freezing temperature.



The Campanile

Mills College

Suburbs of Oakland, California
The only Woman's College on the Pacific Coast. Chartered 1885. Near two great universities. Ideal climate throughout the year. Entrance and graduation requirements equivalent to those of Stanford University and University of California. Laboratories for science with modern equipment. Excellent opportunities for home economics, library study, music and art. Modern gymnasium. Special care for health of students and for life, Christian influences, undenominational.

For catalogue address Registrar, Mills College P. O., California.

Frosts usually blacken and destroy immediately the reproductive organs of the flowers, giving very plain evidence of harm; but such evidence is often given undue weight, so that the injury from light frosts is frequently over-estimated. Cold storms, or even very cool days without frost, at blooming time lessen or destroy the crop in several ways. The rains wash off the tiny grains of pollen from the delicate anthers of the flowers and thus prevent their journey on the body of some insect, so that they fail to perform their fertilizing office. Even if a pollen grain chance to reach the pistil it may fail to adhere and grow, since the rain also washes off and dilutes the adhesive, stimulating secretion upon the stigmas. Provided neither of these causes prevents the journey and proper placing of the pollen, the cold of such storms often so lessens the vitality of the grains that they germinate very slow or not at all. The cold and the rain also check the activities of bees and other insects, and as these are the effective carriers of pollen grains, the possibility of successful pollination is still further lessened. Dampness is favorable to the growth of most fungi—which cause our leading leaf and fruit diseases—and such fungi frequently attack and ruin flowers during the May storms. Winds alone do comparatively slight harm to fruits early in the season, but occasionally are strong enough to whip blossoms from the trees and to prevent the flight or active work of insects. If they are drying and long continued they may evaporate the secretion from the stigmas and thereby prevent the retention and germination of the pollen; while cold, dry winds at blooming time chill vegetation and retard all plant activities. On the other hand, light breezes on nights when frosts would otherwise occur may sweep away the settling chill and prevent damage; or, in favorable localities beside large bodies of water, may bring in clouds or fogs to check heat radiation and prevent freezing.

Unfortunately, at least in a narrow sense, man cannot control the weather to any great extent. Orchard heaters are now used to warm the temperature of an orchard and prevent frosts. By small fires, especially of damp, smouldering, smoke-producing materials, orchards and vineyards may occasionally be protected from light frosts. By the proper placing of windbreaks—not so

simple a matter as it may at first appear—some advantage may be given tender fruits. By whitewashing the trees in early spring blossoming may be retarded a few days. A definite amount of heat is necessary to bring buds to maturity, and since white objects absorb less heat than dark ones, such whitening of the trees may occasionally carry the buds unopened safely through a frost that would destroy the flowers. Aside from these comparatively unimportant exceptions, we can do nothing, after the orchard is established, to protect fruit trees from weather stresses. But we can do much to protect future fruit crops by careful study, before we locate the plantation, of weather conditions and crop adaptations. It would be most unwise to set apricots, plums and peaches, which are relatively tender at blossoming, in any locality where the average date for the last killing frost is as late as May 10; yet some late-blooming or cold-resistant varieties of even these fruits, on some hillside rightly located or beside a favoring lake, might escape frosts often enough to make their culture highly profitable, since they could be sold in near markets never glutted with such fruits because of general unfavorable conditions.

In choosing a location for an orchard we must consider latitude, altitude, and general topographic conditions, especially proximity to large bodies of water, since these all affect general climatic conditions. Perhaps fully as important as general location, however, is the choice of a particular field on which to plant fruit trees or grape vines. Omitting all discussion of soil, markets, roads and other surroundings, the lay of the land may frequently determine its value for an orchard or vineyard. Every fruit plantation has a local climate varying in the different parts of the tract in accordance with the lay of the land. Low-lying spots show the greatest extremes—lowest temperature in cold weather and highest temperature in hot weather. Conversely, on the elevated portions of a tract the temperature is most equable—less cold in low temperatures, less hot in high temperatures. The direction of the slope of the ground causes variation in the temperature probably because of the greater amount of heat absorbed from the sun by southerly slopes and because of the different exposures to prevailing winds. A slope also gives better air drainage than a level. The difference between high land and valley, slope and plain, is often amply sufficient to account for the idiosyncrasies in frost injuries so often noted. Some fruit growers claim to obtain a certain degree of immunity from frost through good air drainage secured by planting at a sufficient distance so that tops do not touch and by keeping the heads within bounds by pruning.

Quite as essential as location in doing the little that can be done to avert frost injury is the selection of varieties. Some varieties of each of the several fruits blossom later than others, and

O. E. SPOONER

Fruit and Produce

Brokerage and Commission

94 South Market Street
1-3-5-7 Mercantile Street

BOSTON

Located on this corner since 1897

Direct Telegraph Wires
All Codes

Up-to-Date
Facilities
FOR
AUCTION
AND
Private Sale
DISTRIBUTION

MOST SCENIC TRIP IN OREGON
TO

**Tillamook County Beaches
and Fishing Streams**

100 miles of wonderful scenery—every minute something new. Picturesque fertile valleys; wild, trackless virgin forests; tumbling trout streams, inviting camp grounds and peaceful bays; glorious stretches of sandy beaches and the old, old ocean. Ample hotel accommodations.

Low Round Trip Fares

Round Trip Season \$4.00 Week End Round Trip \$3.00

Portland to Garibaldi Beach points,
with proportionate low fares to other points.


Two Fine Trains Daily

Leave Portland 8:55 A. M. and 1:30 P. M. Parlor Buffet
Observation Car on Seashore Special in the afternoon.

Call for our new folder
"Tillamook County Beaches"

Tickets, folders and full information from any S. P. Agent

**John M. Scott, General Passenger Agent,
Portland, Oregon**

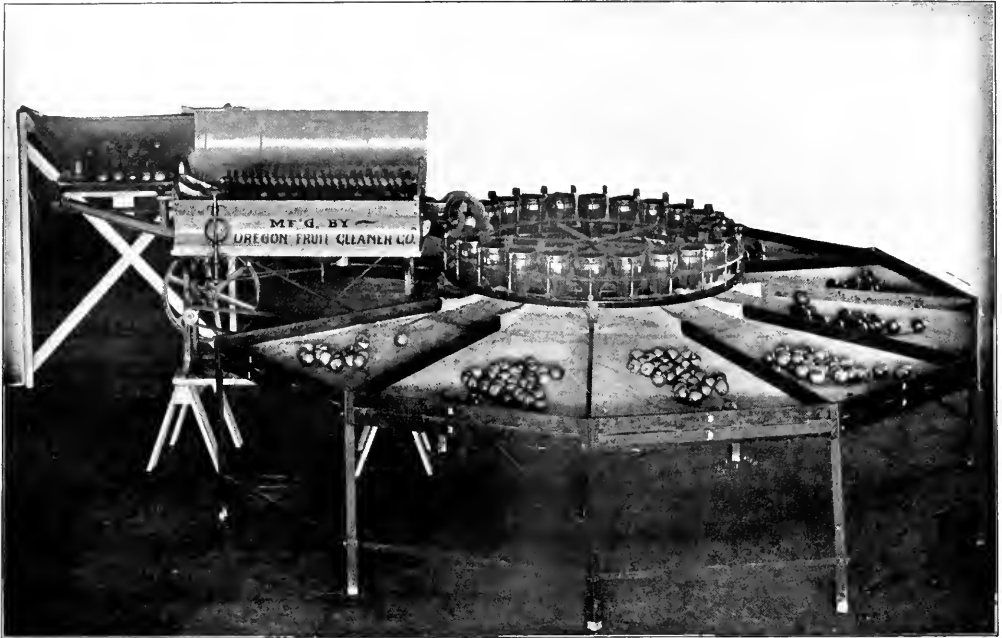


these are usually in least danger from frosts. The length of time during which different varieties are in blossom is worth considering, though it varies considerably in accordance with the fruit, the variety, and, most of all, the weather. The average length of the period of bloom for the different species of fruits is: For apples, about nine days; for pears, seven days; for peaches, eight days; for plums, seven days; for cherries, seven days, and for grapes, ten days. The time from first blossoms until all have dropped may vary greatly, as the blossoms of some fruits do not last longer than forty-eight hours in very hot, dry weather. Blossoms of tree fruits, after opening, do not close night or day, though pollination probably takes place during the day only. Other things being equal, of course it would be in the fruit grower's favor, in a locality where late frosts are liable to occur, to select late-blooming varieties. Such varieties cannot be selected by knowing only their time of ripening, for some early fall apples blossom late, like Williams, and some late winter apples blossom early, like

King and Wagener. That is, there is no correlation between the time of blooming and the time of ripening of fruits. Early varieties do not necessarily, though some may, blossom earlier than late varieties. It is not possible, therefore, by a selection of late varieties to escape danger from late frosts.

Commission houses in Sweden have heretofore purchased their apples from Oregon and Washington through German and English importers. They are now seeking arrangements to secure shipments direct, believing that the same can be secured in this way, and making a considerable saving, which will enable the Swedish commission merchants to sell a much larger quantity than heretofore.

The policy of the Canadian Government with reference to fruit inspection this year will be very strict. Consequently it is up to the shippers to see that fruit is free from all diseases or pests, thereby saving themselves extra trouble and unnecessary expense.



OREGON COMBINATION FRUIT CLEANER AND GRADER

The machine that puts the profit into the fruit business. For descriptive matter and testimonials address
OREGON FRUIT CLEANER CO., THE DALLES, ORE., U.S.A.

The Oak Fungus of Fruit Trees

By Professor W. T. Horne, University of California

THE oak fungus disease or fungous root rot, caused by the fungus *Armillaria mollea*, is a very common and serious disease of orchard trees in California. Its most striking characteristics are its marked localization and slow progress. The fungus which causes it probably existed in the roots of wild trees, attacking living roots, but working so slowly that vigorous trees were not killed, and also persisting in the dead wood, causing the roots to decay. It appears that many wild trees are infected in nature, and I do not have sufficient evidence to say that oaks are more subject to infection naturally than other trees. Not all roots in the soil are infected, so that we cannot say that because an oak tree grew in a given place oak fungus will appear there. When the roots of a fruit tree come sufficiently near to infected wood in the soil the fungus grows over and attacks the living roots. We must believe that this may happen long after the original clearing, because the fungus will not die out of the soil until the root in which it lives is completely decayed. It is probable that new infections have appeared ten years after planting an orchard.

The course of the disease is now well understood by fruitgrowers. Often several trees have died before particu-

lar attention is given to the trouble. It is then found that two or three trees nearest to those which have died are dying or diseased. The trouble can be recognized with certainty only by an examination of the roots. Usually two or three years will elapse after the first signs of weakening have appeared before the tree dies, and after the first collapse some part of the tree may start up and continue to grow for an indefinite time, finally to be blown over by the wind or to die completely if it does not first exhaust the grower's patience and get pulled out. Two or three or more years may pass before the disease spreads to the next tree. It is thus seen that the rate of spread is slow, but we have maps of spots in citrus orchards fifteen years old where 25 to 30 trees have been lost. In some cases practically whole orchards have been swept over. Some have not been replanted. Others have been replanted, part of the replants living and others dying, so that the result is very discouraging. After the disease has become well established occasional new centers of infection appear. It is believed that probably such new infections arise from a diseased root being carried along and, before it dies, plowed under near a healthy root. I have picked up from the moist cover crop a piece of dis-

cased root which had fallen from the cart in which a dead tree was being hauled from the orchard. If this root had been plowed under so as to come near a healthy root the fungus would almost certainly have grown over into the healthy root and in a few years another tree would have died and a new center of infection would have been established.

Toadstools or mushrooms appear during early winter about most of the sick and dead trees. These toadstools may continue to come up on some stumps for at least five years. They are light-tan color and are found in large clumps. They arise directly from the diseased roots and are the fruiting bodies of the fungus. White spores are found on them in immense numbers, but probably these spores do not cause new infections in living trees, although we have repeatedly grown them artificially. They might easily infect a decaying stump.

If we examine carefully a root newly killed by this fungus we see that its bark is somewhat puffed and when cut into is soft and moist. By care we can separate it into layers, exposing white plaques of fungus which are soft fetty and tend to radiate out in fan-shaped bodies. The appearance will vary somewhat according to the kind

of tree. The odor is a sharp, sweet mushroom odor and not putrid or sour. Precisely such bodies are found in artificial cultures. Sometimes the bark is cracked and fungus bodies pushed out into prominent ridges, which are black on the surface but white below. Roots which have been attacked for some time will be found to have the wood with a white decay working in from the surface. After a time the wood becomes very soft and moist and finally almost completely disappears.

Dark brown to black shining root-like structures coming out of the diseased bark and running along its surface are often found. These are the rhizomorphs; they resemble roots but have a different structure, the center being composed of soft white fibers. They give the fungus the power to go several inches from one root to another. When the tip of the rhizomorph comes to a healthy root the very small microscopic threads of which it is composed seem to loosen like the cut end of a rope and the individual threads penetrate into the bark and start a new infection.

It is often recommended to take great pains to get out all roots from new land before planting. Evidently the fewer roots left in the soil the less chance there will be of infection. However, it is not within the limits of practicability to get out all roots from wooded land. A good practice would be to clear the land, cultivate thoroughly, then keep it several years in alfalfa before planting the orchard. However, in view of the scattered nature of infections and the impatience of planters, it does not seem worth while to insist on such a program. Treatment of individual trees may have a certain value, but usually will be disappointing and it is doubtful if it is worth while for orchard trees. If the crown of an affected tree is uncovered and by a generous amount of digging all diseased roots are removed or the diseased bark scraped off and the wood treated, as recommended in my paper on wood decays, and the place allowed to dry out well, the remaining roots will grow freely, provided the tree has not been girdled by the fungus. By repeating such treatment and by keeping the crown as dry as practicable it is entirely possible that a tree may be kept alive for many years.

We have insisted that two problems are involved: First, checking the outward advance of the fungus so that new trees will not become affected and, second, treatment of area already infected. Treating the margin of the spot has been practiced, I understand, in German forests by digging a ditch about the affected area so as to enclose all the fungus. The fungus travels along the roots and a ditch makes a space which it has no way to pass. We have some experiments under way to test this method. Our orchardists object to an open ditch so we allowed the ditches to be refilled. One spot ditched was in an orange orchard in good mellow soil, trees good and more than ten

years old. There were two dead trees and two infected at the root, but with the tops still fine. The ditch was made three to three and one-half feet deep, no wider than necessary for digging. It seemed to have cut all the roots. Infected roots could be readily recognized. As finished it was believed that no diseased orange roots crossed outside the ditch. A layer of tarred building paper of good quality was put against one side of the ditch to prevent new roots from crossing back into the diseased area. After a little more than two years the ditch was reopened. The building paper was worthless for stopping the roots, as they grew through it very readily. The rest of the experiment was highly encouraging. In repeated cases a root from which a piece had been cut out could be recognized unmistakably on the two sides of the ditch. The piece within the diseased area would be in an advanced condition of decay with the fungus, while the end toward the unaffected tree and outside the diseased area would be entirely unattacked and putting out numerous new roots. There is no doubt that if the ditch had not been made the fungus would surely have followed the root and there would have been no hope of saving the tree. Around this area, which included four diseased trees, no less than five good trees were saved from infection. If once opening the ditch will save the sound trees from infection for two years there is no reason why the thing cannot be done again in the same place and the spot permanently restrained to its present area. Several points in the work should be noted. In one case, unintentionally, a diseased piece of root was thrown back into the ditch. The new roots which had grown out from the healthy side had come in contact with this and were already diseased, but this infection had not gone far back toward the good tree. I believe we succeeded in removing all of this infection. It should be pointed out that many new roots were getting close to the infected areas and would soon have become infected, so that if the ditch is made once and not reopened the trouble will be only slightly delayed and the work will hardly be worth while. Some orange roots which were cut off in working the ditch remained alive in the soil for more than two years and were pushing out growth from the cut end, which might have become a leafy shoot. This is an important matter because it shows that a long time must elapse before roots will be entirely decayed in the soil.

Treating the Diseased Area.—It would not seem to be a difficult matter to find some substance which could be put into the soil and entirely kill everything. Carbon bisulfid is the most promising material thus far suggested. If used properly and in sufficient quantity I feel sure it will do the work. It is simply a matter of studying out the method and counting the cost. I feel rather doubtful if it will be possible to kill the fungus and not kill good roots lying in the soil, because the fungus

To Apple Growers

Our cold storage buildings are equal in all respects to the best, and are superior to most. They have wide halls, are thoroughly ventilated throughout, are provided with electric elevators and are lighted by electricity. The insulation and refrigeration are as nearly perfect as can be made.

Three switches, extending on our own grounds to the doors of the storage houses, connect them by the Union Track with all railroads entering Evansville; wide platforms stretch along the switches, enabling cars to be unloaded and loaded rapidly—an important matter.

In advantages for handling consignments our cold storage buildings are superior to any others in the Middle West or South. The buildings are protected by an automatic sprinkling plant, securing a low rate of insurance.

Evansville, a city of over \$8,000 inhabitants, is one of the best points in the United States for the storage, distribution and sale of apples; its central location and shipping facilities insure low rates of freight and quick delivery to the best markets, North and South. Evansville is not only a good distributing center, but is a good home market.

We offer for the coming season space for 150,000 boxes of apples, including 37 rooms holding from 600 to 3,500 barrels.

Particulars given on application.

Evansville Ice and Storage Company

EVANSVILLE, INDIANA

J. & H. Goodwin, Ltd. APPLE IMPORTERS

Commercial Sale Room, Deansgate,
Manchester, England.

Floral Street, Covent Garden Market,
London, England.

Fruit Exchange, Victoria Street,
Liverpool, England.

Humber Dock Street,
Hull, England.

AMERICAN ADDRESSES:

97 Warren Street, New York, N. Y.
Youngs Hotel, Boston, Mass.

Consignments and Correspondence Solicited

QUALITY BOXES

FOR

QUALITY APPLES

Stanley Smith Lumber Co.
Hood River, Oregon

WESTERN SOFT PINE
Apple Boxes
Pear Boxes
Peach Boxes

Crates—any and all kinds.
 Large Output: Quick Service:
 Good Stock. J. U. S. T.
 WHAT YOU want if you
 will tell us.

Western Pine Box Sales Co.

Spokane, Washington
 Mention "Better Fruit"

6%—MONEY—6%

Loans may be obtained for any purpose
 on acceptable Real Estate security; liberal
 privileges; correspondence solicited

A. C. Agency Company

767 Gas-Electric Bldg. 440 Phelan Bldg.
 Denver, Colo. San Francisco

FOR SALE

Apple Evaporating Machinery
 at half price.
 Used one season.

Capps Nursery, Prosser, Wash.

The Paris Fair

Hood River's Largest and Best Store

RETAILERS OF

EVERYTHING TO WEAR

AGENTS FOR

HAMILTON & BROWN AND
 THE BROWN SHOES

HART, SCHAFNER & MARX
 CLOTHES

MANHATTAN SHIRTS

JOHN B. STETSON HATS

NEMO CORSETS

Strictly Cash—One Price to All

The J. B. Holt
Fruit Picking Sack

(Patented)

I invented this picking sack and have used it in
 my orchard, handling from five to ten thousand
 boxes, during the last four years.

I am convinced it is the most practical and convenient
 picking receptacle on the market. It does not
 bruise the apples. It is not in the way of the picker,
 like a bucket. The picker can reach the highest
 limbs without inconvenience. It empties into the
 bucket slowly and carefully, without bruising. It
 has wide shoulder straps like suspenders, and does
 not have to be hung on the limb with a hook.

You can buy these of

OSCAR HILL, North Yakima, Washington.
 C. H. ROSS, Wenatchee, Washington.
 S. B. SHIMTON (address, Hood River, Oregon).
 Hood River, Mosier, White Salmon and Underwood.

New agents' names will appear in September issue of
 "Better Fruit."

Price f.o.b. Pullman, Washington, \$1.75.

Special prices quoted on large quantities.

For further particulars and illustrated descriptive
 literature, write

J. B. HOLT
 PULLMAN, WASHINGTON

penetrates into the wood and part of it is deeply buried, while the living part of roots is the cambium layer just between the bark and wood. The way carbon bisulfid spreads and works in the soil may be illustrated by one experiment. A row of holes were bored with a small soil auger one foot apart and about fourteen inches deep. One ounce of carbon bisulfid was poured into each hole and it was filled and tamped with the heel at once. This row of holes passed just at the edge of the branches of a good orange tree. After a little more than two months part of this row of holes was dug out. Roots near the surface of the ground were found dead a little more than a foot on each side of the holes, while the deepest roots (less than three feet) were killed nearly three feet from the holes. There was no way to guess how deeply the material was effective, but evidently it would be for a good way. Wetting or covering the soil after injecting the carbon bisulfid will probably be more important than the amount used. We have taken a treatment of injecting one and one-half ounces at one and one-half feet each way as a sort of standard for experimental purposes. I am convinced that the treatment is worthless if the material is injected into dry, loose soil. I do not yet have a precise method worked out which can be depended on, but there is much hope of getting such a treatment in the future.

Ways of utilizing the infected areas are by planting annual crops or resistant trees if they can be found. Such areas have sometimes been used by well-meaning growers for nurseries. The nursery would probably grow very well so far as could be observed, but it will be clear that such planting is highly undesirable. I have found spring replants badly infected the following fall. Of resistant trees the pear is decidedly the favorite in California and I have no definite data to oppose to this view. However, I understand that the pear is not entirely immune in the states north of us nor east of the Rocky Mountains. Black walnut, cherry, apple and fig probably all possess decided resistance. I can only advise caution in replanting diseased areas with supposedly resistant trees. The strain of heavy fruit bearing and occasional bad seasons may reduce resistance in some cases. I would urge at least that a large hole should be dug and the soil not used to fill the hole, but spread out to dry around it and all roots gathered up. The best quality of soil, free from pieces of sticks or wood, should be used to fill the hole in which to plant the trees. The fine roots, I believe, are less liable to infection than the larger ones, so that in this way resistant roots will be given the best chance to escape infection.

I cannot close this article without calling to your attention that here has been suggested, on the basis of experimentation, one definite way, the ditch method, for stopping the spread of oak fungus disease. The work suggested

is not unduly difficult nor expensive and should be practicable under some conditions. We hope in the next few years to be able to suggest treatments more adaptable for large trees, such as walnuts. In starting in to treat an oak fungus area, first make sure that the oak fungus is present and that you can recognize it on the roots. A piece of suspected root may be sent to the university if there is any uncertainty. Next, make a map of the area and locate every tree which has the disease and indicate these on the map. Condition of the trees should also be indicated. Then the map can be studied and it can be decided exactly what should be done. I advise deliberation. The problem is one which may take years to solve, but if worked at consistently I believe may be solved in time and without extraordinary expense.

[Editor's Note.—The article referred to in this paper on "The Importance and Prevention of Wood Decay in Fruit Trees" will appear in September issue of "Better Fruit." Oak fungus, in the Northwest and some other sections, is known as mushroom fungus.]

Arsenite of Zinc vs. Arsenate of Lead

Arsenite of zinc has frequently been used as a substitute for arsenate of lead in spraying for the codling moth because it is cheaper to use, being a stronger-acting poison and said to be as effective as arsenate of lead.

Some fruitgrowers report injury to the foliage, while others report no injury and good success. The same contradictory results from the use of this insecticide have been secured by agricultural experiment stations and suggest that this poison as manufactured is not a stable or uniform product. The occasional injury to foliage from the use of arsenite of zinc may also be due to soluble arsenic being formed when it comes in contact with the carbonated waters always present on leaves of trees after rains and dews. At any rate arsenite of zinc is not as safe to use as arsenate of lead for spraying for the codling moth, and when used should be combined with bordeaux or lime to prevent burning of the foliage. It should never be combined with soap or lime-sulphur.

Arsenite of zinc can be recommended for leaf-feeding insects on shade trees and for potato beetles and cabbage worms, as it has better adhesive qualities than paris green and will not injure the foliage of potatoes and cabbage.—T. H. Parks, Field Entomologist, Idaho Experiment Station, Boise.

The Hayes Fruit Company of North Yakima is endeavoring to secure a suitable warehouse at Zillah to handle this year's crop in that district.

Wanted Position as manager or foreman on fruit ranch; 27 years' experience hard and soft fruits and cob nuts. Used to handling labor. Six years manager of fruit orchard and teaching practical fruit growing, pruning, grafting, etc., at high class college. Excellent references. Aged 49. Address J. G., care "Better Fruit."

Fairs, Apple Shows and Conventions

The Spokane Interstate Fair will be held in Spokane, September 12th to 14th, 1914. This is one of the large fairs of the Inland Empire. The program this year is exceedingly attractive, with a splendid list of premiums in addition to the large cash premiums. This is a fair that every farmer and fruitgrower of the Northwest should be interested in. The program this year is very attractive.

The Pacific Coast nurserymen held their twelfth annual meeting at Vancouver, B. C., June 16-18. The meeting was extremely interesting and valuable to all engaged in the nursery business. Many subjects in the nursery business were discussed. Some of the principal subjects were: "The Inspection Laws, Bonding System for Nurserymen, How to Encourage a Greater Use of Ornamentals, Maintaining the Fertility of Nursery Land; the Pruning Questions Concerning Both Nurserymen and Fruitgrowers, Market Problems in Relation to the Nursery Business, and the Panama Pacific Exposition in Relation to the Nursery interests."

The Fair Hesperades.—Wenatchee is one of the most thrifty and enterprising cities in the Northwest. In a few years it has grown from a village to a beautiful little city. Wenatchee apples have become known throughout the world through their quality and through the enterprise of the progressive fruitgrowers. This city is the shipping point for a very large territory lying along the Columbia River; the fruit from up-river points is brought down on boats and shipped out by rail. The Fair Hesperades is held for the purpose of exploiting the products of North-Central Washington. The first show was held last year and met with wonderful success, with a very large attendance. This year the show will be greater than last year and far more attractive in every way. The Fair Hesperades is a show which is worth any man's time and money to attend.

Every year the City of Salem, Oregon, holds an Annual Cherry Show. This year the show was a greater success than ever before, with a very large attendance. The displays were magnificent and very attractive. The cherry growers deserve great credit for their very attractive exhibits, including all the principal varieties that are grown in Oregon. Among the principal varieties of commercial importance to the Northwest are the Royal Anns, Bings, Lamberts and Black Republicans, which made up the greater part of the exhibit. It is justly befitting that Salem should hold this show, as the Bing and Lambert, which are the two best eating cherries in the world, the largest and the best for commercial purposes, originated in the Willamette

Valley, the Lambert being named after one of our pioneer fruitgrowers and the Bing being named after a Chinaman named Bing, who had served his master for many years. These are the two largest cherries grown anywhere in the world and the two best shippers. The Willamette Valley is the natural home of the cherry, as the trees thrive and bear heavily. Cherries are a good paying crop. The Royal Ann always brings good money because it sells readily to the cannery at a good profit. Even when the fresh-fruit market is glutted the cannery will take all they can get of Royal Anns.

The Associated Advertising Club of America held one of the most interesting conventions ever held at Toronto, Ontario, June 21st to 25th. The meeting was largely attended and many very able and interesting addresses were delivered. The object and aim of the club is to show the advertiser how and when to advertise, to make advertising clean and to produce better results. Advertising is becoming a scientific business, so to speak. It is very evident from the list of addresses that the object of the association is to improve advertising in every way possible; to educate the advertiser how to prepare copy to bring the greatest results; to create more confidence in advertising by eliminating all objectionable advertising; to protect the purchaser by eliminating fake advertisers; to protect the advertiser by urging definite circulation statements from all publications, so the advertiser will know just what he is paying for—all of which will result in raising the standard of publications.

The International Apple Shippers' Association will hold its Twentieth Annual Convention at Boston, Massachusetts, August 5th to 7th inclusive, at the Copley-Plaza Hotel. The meetings of this association are extremely interesting, as the editor of "Better Fruit" knows, having had the pleasure of visiting one in 1910 at Niagara Falls, at which meeting he made an address. There are over 500 members in this association. They get together for the purpose of discussing the apple situation for the coming year and exchanging views and giving each other the benefit of their own experiences in increasing the trade. Mr. R. G. Phillips is secretary of the association, with an office at 612 Mercantile Building, Rochester, New York. He secures estimates from every section of the country so the apple dealers will know what the size of the crop is going to be for the coming year. Fruitgrowers who are able to get away to attend this meeting should certainly do so, because they will find it very instructive and interesting. From the dealers they will learn much about the trials and tribulations of marketing the apple crop. If every grower could meet a large number of the dealers and discuss the marketing business with them it would certainly result in the growers being

Invigorate Your Orchards

Better size, color and flavor assured. Acts quickly upon growing fruit. Positively removes all cherry gumosis. Will apply for 5 cents for four-year-olds, others 10 cents.

Write me quick.

W. D. MOREHOUSE
The Dalles, Oregon

H. HARRIS & CO.

Fruit Auctioneers

227 State Street
Boston, Massachusetts

Established 1847

Frank Moseley
Frank L. Ripley
Cutler B. Downer

better able to understand what the consuming public wants in the way of apples, when they want them and how they should be put up.

History of the North Pacific Fruit Distributors

Incorporated at Spokane, Wash., December 17, 1912.

Organized temporarily at North Yakima, Wash., March 21, 1913, and organized finally at Hood River, Ore., May 13, 1913.

Opened permanent offices at Spokane, Wash., June 10, 1913.

Affiliated with by eight sub-central (fruit) organizations, with a total of 98 locals, one more sub-central being in prospect and another contemplated.

Shipped first carload July 8, 1913. Made total shipment of 5,083 cars during season.

Sold eighty-three per cent of fruit on f.o.b. basis.

Received total price of \$3,069,935.51.

Operated at a total selling cost, including cost of maintaining central office, of brokerage and exchange, expense of legal, claim and traffic department, expense of extension and organization, of only a fraction over five per cent of the net returns to the central and approximately only four per cent of the gross returns to the central.

Realized average price per box for apples, all varieties, all districts, all grades and all sizes of \$1.26 f.o.b. shipping point.

Returned final settlement money to sub-centrals on 2,000 cars in average time of 26 days.

Distributed fruit to 243 cities in 38 states in the United States, 33 cities in six Canadian provinces and 16 cities in ten European countries and to South America, South Africa, Australia and the Philippines.

Why 7,000* Growers

CO-OPERATE THROUGH THE North Pacific Fruit Distributors

Seventeen Reasons

1. It places at the service of the grower a body of trained and experienced experts, better equipped and better informed than the buyers; it maintains a comprehensive and trustworthy system of gathering crop estimates and daily market reports, at a cost of many thousand dollars, to adequately serve the grower; it thus puts the grower in an advantageous position in his relationship to the trade.
2. It distributes the grower's fruit, by intelligent organization, to all of the markets, so as to neither over-supply nor under-supply any particular markets, and provides an agency large enough to seek and find new markets, as well as develop old ones.
3. It markets the grower's fruit in an extensive but conservative and economical manner and without ruinous competition.
4. It furnishes the grower with personal representatives in every important market center in America and Europe, and, in fact, the world, whose first consideration is the grower's interests,—who examine the fruit in transit, repair damages, and, where necessary, protect the grower against improper demands for allowances, etc.
5. It secures a uniform and dependable grade and pack of the fruit throughout every district,—a thing of great value to the trade and therefore to the grower seeking the trade,—and it is thereby enabled to back the brand of each district with a guarantee that will bring a higher price for the fruit than for other fruit outside of such brand.
6. It properly and scientifically advertises the grower's fruit, and returns the full value of that advertising to the grower.
7. It gives the grower the power, hatched by the exclusive service of skilled legal, traffic and claim departments, to secure justice and fair dealing in all instances from buyers, railroads, etc.
8. It removes from the methods and practices of the fruit business the objectionable and obstructive features, the strength and influence of 6,000 united growers being vastly more effective than that of 6,000 individual, disinterested units.
9. It gives the grower control of his own product from orchard to market, thus enabling him to secure the handling of his fruit by the legitimate trade at an equitable cost.
10. It can, by reason of its all-district representation, supply any quantity of any variety of any fruit to meet the most exacting and peremptory demands of the trade and thus avail the grower of the benefits to be derived from such special service.
11. It determines the price at which the grower's fruit is to be sold, just as every other substantial producing business considers cost, adds a reasonable profit, and thus determines the selling price.
12. It insures a fair price to the grower throughout the season because of its equitable pooling system (each district's fruit being pooled by itself however) and because of certain definite marketing policies.
13. It eliminates, by reason of its magnitude, waste in marketing the grower's fruit, and so reduces the price to the consumer, proportionately increasing the consumption of that fruit.
14. It helps to finance the grower at lower rates of interest through loans from the banks, rather than an advance from some one buyer, thus liberating the fruit to all buyers and all markets, instead of one buyer and one market, as is the case when the grower accepts an advance from a buyer.
15. It builds a permanent selling machine for the grower, in contrast to a one-man selling organization, efficient only while the man of strong capacity at its head lives and retains his position,—big enough to handle tonnage ten times as great as in 1912, when every known marketing agency failed, and one that will always be on the job.
16. It investigates and aids in matters of vital importance to the grower, such as national and state legislation, Panama Canal shipping facilities, freight rates, provisions for refrigeration, storage, warehouses, supplies, etc.
17. It puts the grower in business for himself on a business basis.

These are only seventeen reasons—there are more
ARE YOU ONE OF THE 7,000

North Pacific Fruit Distributors

MAIN OFFICE: SPOKANE, WASHINGTON

*Since the publication of this advertisement last month the affiliated membership has increased from 6,000 to 7,000.

Grade Rules, Etc.

Continued from page 11

labeled as Fancy. This grade shall include the following varieties: Apple of Commerce, Ben Hur, Bismarck, Canada Red, Chicago, Champion, Delaware Red, Fall Wine, Golden Russet, Hoover, Ingram, Kentish, Kinnard, Mann, McMahon, Mother, Northwestern Greening, Palouse, Pewaukee, Pryor Red, Rambo, Rhode Island Greening, Roxbury Russet, Russian Red, Salome, Shackleford, Senator, Stark, Steel Red, Swaar, Wall-bridge, Westfield, Willow Twig, Yellow Belleleur and other varieties not included in these grading rules.

All boxes to be lined and cardboard to be used top and bottom, but no cardboard to be used between layers in sizes smaller than 88s. No apples will be accepted in boxes showing infection of worms or cocoons. All apples to be wrapped.

Exceptions—Summer varieties, such as Anstrachan, Baileys Sweet, Bietigheimer, Duchess, Early Harvest, Red June, Strawberry, Twenty Ounce Pippin, Yellow Transparent and kindred

St. Helens Hall

PORTLAND, OREGON

Resident and Day School for Girls

In charge of Sisters of St. John Baptist (Episcopal) Collegiate, Academic and Elementary Departments, Music, Art, Elocution, Domestic Art, Domestic Science, Gymnasium. For catalog address -

THE SISTER SUPERIOR, St. Helens Hall

*Bishop Scott School for Boys
Yamhill Oregon*

Under auspices Episcopal Diocese of Oregon. Fall term starts September 23, 1914. Grammar school and college preparatory courses. Complete instruction in all branches. Send for booklet "Where Boys are Trained to Think." Address Bishop Scott School, Yamhill, Oregon

THE LIFE CAREER

"Schooling in youth should invariably be directed to prepare a person in the best way for the best permanent occupation for which he is capable."—President C. W. Eliot

This is the Mission of the
OREGON AGRICULTURAL COLLEGE

Forty-sixth School Year Opens

SEPTEMBER 18th, 1914

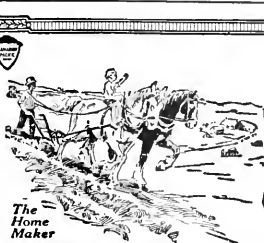
Write for illustrated 100-page Booklet, "THE LIFE CAREER," and for Catalog containing full information.

Degree Courses—AGRICULTURE: Agronomy, Animal Husbandry, Dairy Husbandry, Poultry Husbandry, Horticulture, Agriculture for Teachers. **FORESTRY**, **LOGGING ENGINEERING**, **HOME ECONOMICS**: Domestic Science, Domestic Art, **ENGINEERING**: Electrical, Irrigation, Highway, Mechanical, Chemical, Mining, Ceramics. **COMMERCE**. **PHARMACY**. **INDUSTRIAL ARTS**.

Vocational Courses—Agriculture, Dairying, Home Makers' Course, Industrial Arts, Forestry, Business Short Course.

School of Music—Piano, String, Band, Voice Culture.

Farmers Business Course by Mail Free
Address THE REGISTRAR,
(W-7.15 to 9.9) Corvallis, Oregon



Get Your Canadian Home from the Canadian Pacific

BUY an irrigated farm where you have insurance against drought and where you have just the moisture you need when you need it. You know the value of controlling the watering of your crops. In sunny Southern Alberta you are master of the moisture. The Canadian Pacific's great Irrigation Works insure your yield whenever rainfall is insufficient. Irrigation is not always a necessity—but it is yours at command. It means dependable crops, and wonderful crops every year. The Eastern section of the Canadian Pacific Irrigation Block East of Calgary is now open. Virgin soil of famous fertility—alfalfa, timothy and other fodders—the grain and root crops, fine climate—great cattle country—good markets—unexcelled transportation.

We want the alert enterprising farmers who see this magnificent opportunity. So we make the most liberal terms. Take 20 years to pay. Call on us for long time loan of \$2000 for farm improvements if you want it. Investigate now. This block will soon be the most densely populated and intensely cultivated district in the west.

You Can Have 20 Years to Pay

We will sell you this rich irrigated, Canadian land for \$35 to \$75 an acre. You need pay only one-twentieth down. The risk of it—only one-twentieth down, and then the balance in 19 equal annual payments—before your final payment comes due, your farm will have paid for itself! Over and over again. Many good farmers in Western Canada have paid for their farms with one crop. Here are some of the startling features of the most remarkable land offer you have ever seen.

We Lend You \$2,000 for Farm Improvements is for farm development only, with no other security than the land itself, and shows our confidence in the fertility of the soil and in your ability to make it produce prosperity for you and traffic for our lines. This loan will help you in providing buildings, fencing, sinking wells and breaking, and you are given twenty years in which to fully repay this loan. While enjoying the use of this money, you pay interest at only 6%.

Advance Live Stock on Loan Basis The Company, in case of the approved land purchaser who is in a position and has the ability to take care of a live stock, will advance cattle, sheep and hogs up to the value of \$1,000 on the basis of the settler's note with it forest at eight per cent, to enable him to develop more rapidly, on the right basis of mixed farming.

Farm Made Ready by Experts if Desired If you want a place already established, select one which our Department of Agricultural Experts has developed. On our improved farms, houses and other buildings are up, well dug, farm fended, fields cultivated and in crop. All waiting for those who want an immediate start and quick results—all planned and completed by men who know our own agricultural experts. Take twenty years to pay if you want to. We give free service—expert service—the valuable assistance of great demonstration farms, in charge of agricultural specialists employed by the Canadian Pacific for its own farms. This service is yours—free.

Water Rental Will Not Exceed \$1.25 per Acre Each water agreement will have approval of Dominion Government. Lands are located on or near established lines of railway. First payment of irrigated land is 20th of purchase price. At end of first year no payment is due on principal or water rental, only percent of interest is required. At end of second year, no payment of principal is required, but purchaser will be required to pay interest and water rental. At end of third year, the second payment of principal, interest and water rental will be required.

Here is where your opportunity lies. Don't delay. Mail coupon here at once. Best land will be taken first—time is precious to you. Write today.

W. T. THORNTON, Colonization Agent
Canadian Pacific Railway
Colonization Department
112 West Adams St., Chicago, Illinois



W. T. THORNTON, Colonization Agent,
Canadian Pacific Railway Colonization
Department, 112 W. Adams St., Chicago

Please send me your book of information on Irrigation Farming in Sunny Alberta.

Name.....
Address.....
Town.....
State.....

varieties not otherwise specified in these grading rules, together with early fall varieties, such as Alexander, Blue Pearmain, Wolf River, Spokane Beauty, Fall Pippin, Waxen, Talman Sweet, Sweet Bough and other varieties not provided for in these grading rules, as grown in sections of early maturity, shall be packed in accordance with the grading rules covering Fancy grade, as to defects, but regardless of color rules. Sizes not smaller than 163 count for the larger-growing varieties and 200 count the smaller-growing varieties.

All boxes to be lined and cardboard to be used top and bottom, but no cardboard to be used between layers in sizes smaller than 88s. No apples will be accepted in boxes showing infection of worms or cocoons. Apples smaller than allowed in the standard grades,

but otherwise conforming to the requirements of the Extra Fancy or Fancy grades, may be packed if desired by the grower and reported to his district manager. Such apples will be sold as market conditions warrant.

"C" Grade—This grade shall consist of apples not smaller than 163 count and shall be made up of all apples not included in the Extra Fancy or Fancy grades. Apples must be free from all insect pests, worms, worm holes and infectious diseases. Serious physical injuries, skin puncture, bruised or broken skin will not be permitted. Slightly misshapen fruit, slight sunscald and not exceeding two stings, thoroughly healed, and such blemishes as are provided for under the grading rules for Fancy grade, shall be permitted. There are no requirements as to

LILLY'S
BEST GRADE
GRASS AND CLOVER SEEDS
99 PER CENT PURE
FOR FALL SOWING
THE CHAS. H. LILLY COMPANY, SEATTLE

W. van Diem
Lange Franken Straat 45, 47, 49, 51, 61
ROTTERDAM, HOLLAND
European Receivers of American Fruits
Eldest and First-Class House in this Branch
Cable Address: W. Vandiem
A B C Code used; 5th Edition
Our Specialties are
Apples, Pears, Navel Oranges

FIX YOUR ROOF
Send for this **FREE BOOKLET**
TELLS HOW TO DO IT EASILY AT SMALL EXPENSE
"KOTE-IT" a rubber-like paint for roofs, tin, paper or shingle, new or old, iron work, silos, tanks, posts, implements, etc.
APPLIED WITH A BRUSH
50 A GALLON DELIVERED IN QUANTITIES
Guaranteed for 5 years
A.W. SMITH CHEMICAL CO.
OAKLAND—BOX 393 A—CAL.

STOP THE LEAK!

PROTECT YOUR STOCK!!
From the Torture of Flies

CHILD'S SO-BOS-SO TRADE KILFLY MARK

In Sealed GALLON CANS \$1.25

Cows Give 1/3 More Milk — Horses Do More Work on Less Feed when Protected by SO-BOS-SO.

Applied in a few seconds at a cost of less than 1/2 cent per day per head.

PORTLAND SEED COMPANY
Portland Oregon

Ask for Catalog No. 206

color except that the fruit must be matured. All apples to be wrapped. No apples will be accepted in boxes showing infection of worms or cocoons.

Recommendation — Your executive board advises the use of the regular Northwestern standard apple box, inside measurements 10 1/2 x 11 1/2 x 18, with solid ends. Inasmuch as the laws, as well as the trade requirements, will force us to sell our apples by numerical count, we abolish the system of designating or manifesting fruit by tiers and will employ the numerical count exclusively hereafter. The recognized and endorsed counts for the Northwestern standard apple pack are as follows: 3 tier, 36, 45, 48, 56; 3 1/2 tier, 64, 72, 80, 88; 4 tier, 96, 104, 112, 113, 125; 4 1/2 tier, 138, 150, 163; 5 tier, 175, 188, 200, 213, 225.

Crabapples should be carefully assorted to varieties, making one grade only, keeping out all insect pests, worm holes, sting, scale, misshapen and blemished fruit. Put up in apple boxes; paper line the box; fill in gently so as to prevent bruising.

Lady Apples—These should be packed in half boxes, boxes lined, remembering that the more attractive the better the sale. Make only one grade, keeping out all insect pests, worm holes, sting, scale, misshapen and blemished fruit.

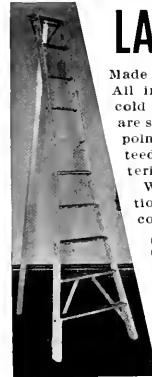
On all packages of fruit other than those of standard and specified weights, and those packed in full standard, dry-measure packages, the grower is warned to stamp on each package the minimum net weight or numerical contents thereof.

CHERRIES

10-lb. Boxes—All marketable varieties must be in perfect condition, of the right degree of ripeness, free from all insect pests and blemishes. Stemless cherries to be kept out. In packing the 10-lb. boxes care must be taken by the packer to have the cherries as near uniform in size as possible all the way through the box. Boxes should be marked according to the number of rows across the end, as in 9 row, 10 row and 11 row. In making the box, top should be nailed on and cleated, bottom left off, box should be placed before packer with open bottom up. Carefully pack the bottom tier, which will be the top when pack is completed. In packing the first tier care should be taken by the packer to place the flattest side of the cherry next to the board. Use only the square pack, never a broken one. Both ends of box should be packed alike. Keep all stems up on first two layers and all stems down on the bottom, which will be the top of the box to the packer. See that the corners are well filled. After box is nailed up there should be no stems showing. Edges of box where cherries are exposed should present a neat appearance. Nailers should be very careful when lidding up not to cut or mash any of the fruit; all such cherries should be removed and replaced with good fruit.

20-lb. or 25-lb. Boxes—Follow same instructions when packing either 20-lb.

SCHLEE'S ORCHARD LADDERS



Made of select vertical grain fir. All iron work made of strong cold bent steel. The Ladders are securely braced in all vital points and absolutely guaranteed against all defects of material and workmanship.

Write for further description and prices. Special discount to the trade.

SCHLEE'S LADDER WORKS
267 Second Street
Portland, Oregon

Manufacturers of Orchard Ladders, Step Ladders, Extension Ladders, Decorating Trestles, Ladder Jacks, Window Cleaning Ladders, Roof Jacks

F. A. BISHOP, Secretary
HOOD RIVER ABSTRACT COMPANY
HOOD RIVER, OREGON
ABSTRACTS INSURANCE
CONVEYANCING

It Produces Clean and Sanitary Milk in Ordinary Barns

If you are milking fifteen or more cows, don't do it by hand. It's unsanitary, takes unnecessary time and hard work. With 2 B-L-K Milking Machines, one man can milk 30 cows per hour and not get tired. It protects the milk from dirt and contamination, no matter where in operation. Machines last for years. Cost of operation small. Send for details and list of names of users.

Milker Booklet No. 28 Free.

Monroe & Crisell

HEADQUARTERS FOR DAIRY SUPPLIES
THE SIMPLEX LINE
OREGON SILOS
STAR BARN EQUIPMENT
BABCOCK TESTERS

126 Front Street Portland, Oregon

or 25-lb. boxes as those given for 10-lb. boxes.

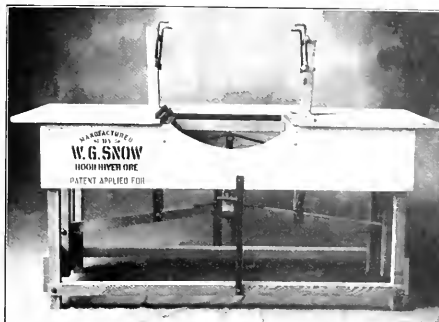
Strawberry Crates—It is recommended that for all cherries that are packed in strawberry crates use the deep-quart hallock, packed sixteen to the crate. Where strawberry crates of four-hallock carriers are used for packing cherries, hallocks should be well filled, shaken down and lopped or faced so they will be rounding full. There should be no stems showing. Use square pack.

APRICOTS, YAKIMINES AND NECTARINES

Should be hard ripe for picking. Should be matured enough so they will continue ripening and have a good flavor. Districts using the special folding four-basket hallocks that are straight up and down should pack all large Moorpark, Yakimines and Nectarines in this style package and the pack should be two-tier deep. By use of this package the same sized fruit can be packed in the bottom and top tiers. Crates are to be marked with actual number of fruit in each crate. Size of crate, $3\frac{3}{4} \times 14\frac{1}{4} \times 14\frac{1}{4}$, inside measurement. Size of basket, $3\frac{1}{4} \times 7\frac{1}{4} \times 7\frac{1}{4}$, outside measurement. Box specifications: slats, S. and B., $\frac{1}{2} \times 1\frac{1}{2} \times 16\frac{1}{2}$ —eight pieces; tops, $\frac{3}{16} \times 7\frac{3}{4} \times 16\frac{1}{2}$ —two pieces; ends, $\frac{3}{4} \times 3\frac{3}{4} \times 14\frac{1}{4}$ —two pieces; cleats, $\frac{3}{8} \times \frac{3}{4} \times 14\frac{1}{4}$ —two pieces; size of paper, $7\frac{1}{2} \times 25$. Use 5d cement-coated nails in making all prune crates. The following packs are to be used: Straight pack, 4x4, 2-tier deep, 128 count; diagonal pack, 4x3, 2-tier deep, 112 count; diagonal pack, 3x3, 2-tier deep, 96 count; diagonal pack, 3x2, 2-tier deep, 80 count; diagonal pack, 2x2, 2-tier deep, 64 count. All insect pests, scale, scab, blemishes and physical injuries are to be excluded. Whenever possible use square pack, with stem-end down. Pack top tier with creased side of fruit up and all the same way. Districts not using the special straight crate are to use the regular four-basket prune crate for sizes 6x6 and larger, top tier of fruit to be creased. Same grade requirements as given in special crate.

PRUNES AND PLUMS

Pick as large a percentage as possible with stems on. Throw out all stemless fruit when skins are broken or torn. Pickers should be very careful in picking not to brush off the bloom. Gloves should never be used in handling prunes and plums. Prunes and plums should be hard ripe for picking. Fruit should contain some sugar and be matured enough so it will continue ripening and have a good flavor. Fruit should be free from all insect pests, scale, scab, blemishes and physical injuries. Prunes and plums and all such fruit should be packed in four-basket prune crates unless special order is given by the central office to put them up otherwise. Fruit too small to pack 6x6 should never be packed in prune crates and should only be shipped in $3\frac{1}{2}$ -inch peach boxes, paper lined. Whenever possible use a square pack. Pack all Tragedies and Italians



THE IMPROVED HOOD RIVER BOX NAILING PRESS

Is the best device of its kind for the money on the market.

The fact that Hood River growers by the hundreds use them, is our best testimonial. And those who have had experience with the press are satisfied; for by the elimination of box bruises it has aided in making the Hood River apple famous.

If you are in the market for a Nailing Press, it is to your advantage to investigate the HOOD RIVER PRESS and get our prices.

W. G. SNOW
Hood River, Oregon

SHIPPERS OF APPLES PEACHES PEARS PLUMS CHERRIES ETC.

When wishing to use the Cleveland market, or desiring reliable information concerning same, write or wire us. We are among the largest receivers here.

SPECIAL FEATURES:

Absolute responsibility, reliable and prompt service. No house in any market excels us in making prompt remittances when goods are sold. Liberal and consistent advances made on consignments. Ample cold and dry storage facilities.

Myers, Weil & Co.
CLEVELAND, OHIO

KINGMAN & HEARTY, Inc.

E. W. J. HEARTY, President

Commission Merchants

Box Apples a Specialty

20 Faneuil Hall Market (North Side)

BOSTON, MASSACHUSETTS



Wanted?

If you want a connection with **Practical Distributors and Marketers** whose experience covers the entire producing period of the Pacific slope, and who are

Specialists in the Products of Washington and Oregon

Make your wants known to

G. M. H. WAGNER & SONS

123 W. So. Water Street, CHICAGO

Yakima County Horticultural Union

E. E. SAMSON, Manager
North Yakima, Washington

INDEPENDENT SHIPPERS

OF

Straight and Mixed Cars Yakima Fruits

CONSISTING OF

Peaches, Pears, Apples, Plums and Prunes

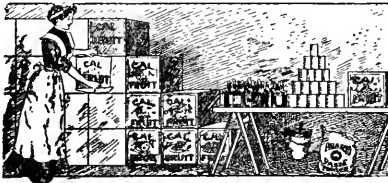
WRITE OR WIRE US TODAY

3-tier deep, stem-end down; pack top tier with creased side up and all the same way. Hungarians, Bradshaws, Peach Plums and similar varieties that pack smaller than 5x5 in prune crates should not be packed.

PEACHES

Peaches should be picked for packing only when fully developed, but firm or hard ripe. Yellow-meated varieties should show some yellow color. The fruit should be picked and laid, not dropped, in the baskets or pails, and should be taken from the vessel only at packing table. All possible care should be used to avoid bruises. Use standard peach boxes, cleats on top only; use 4d special orange-box cement nails for bottoms and sides. Drive nails one inch from corner, four nails to each piece. Use three 4d cement box nails for each cleat, one in the center and one driven two inches from the end of the cleat. The cover should hold the fruit firmly in the box, but should not bulge more than three-eighths of an inch. Use 4½-inch boxes only for Elberta peaches, running 50 to 84, both inclusive, avoiding the use of extra cleats except in extreme cases. Peaches that are too large to be laid five wide in the box should be packed two and three in 4½-inch boxes. If the peaches are roundish, as in the case of Crawfords, it will be necessary to use some 4-inch boxes with this pack. Peaches that will go five across the box or smaller should be packed three and three in 4-inch boxes. The excellence of the pack depends upon uniform grading. The peaches in a box should not vary more than one-eighth of an inch in diameter. All peaches must be carefully wrapped in suitable paper. Peaches that run less than 96 to the box must not be packed for shipment. Eighty-four count must be the minimum for Elbertas. In packing the box should set on an incline with the lower end of the box to the packer. Both tiers should be carried forward together. The peaches should be placed in the box stem-end down, those in the top tier resting in the spaces between those in the lower tier so that no peach will rest squarely on top of another. Pack all peaches with the loose end of the wrapper down. No overripe, under-sized, immature, bruised, misshapen,

Paste for Labeling—"Palo Alto" Paste Powder



added to cold water, instantly makes a beautiful, smooth, white paste. Ready for immediate use at a cost of ten cents a gallon. No labor. No muss. No spoiled paste.

Paste Specialists

Robinson Chemical Works
349-351 Eighth Street
San Francisco, California

GO EAST NOW

TO	
Denver	\$ 55.00
Omaha	60.00
Kansas City	60.00
Chicago	72.50
New York City	108.50

Equally reduced fares to other Eastern cities. Rates to any point furnished on application.

Oregon-Washington Railroad & Navigation Co.
O. S. L.—U. P.

LOW ROUND TRIP FARES

Tickets on sale every day to September 30. Final return limit, October 31, 1914. Liberal stop-over privileges.

Superior service, unexcelled dining and sleeping car accommodations, through trains, direct routes, automatic block signals, every requisite for safety and comfort.

Visit Yellowstone National Park on your way East. Through sleeping car service to and from Southern entrance to the park.

For full information, fares, routes, train schedules, etc., call upon any agent of the

O-W. R. & N.



Store Your Apples in Spokane

The Natural Storage Center

Take advantage of storage in transit rate and the better market later. Write us for our dry and cold storage rate and information.

Ryan & Newton Company

Spokane, Washington

WELCH & WELCH 3-5 W. So. Water Street CHICAGO

SPECIALIZE ON CAR LOTS

Apples, Peaches, Pears

Get in touch with the Livest House in Chicago Write Today

Members { National League Commission Merchants
Western Fruit Jobbers and
International Apple Shippers Association

True-to-Name Nursery

GALLIGAN BROS. Proprietors

Hood River-Dufur, Oregon

Wholesale and Retail General Line of Nursery Stock. Seventeen years in the business. For catalogue and prices write

True-to-Name Nursery

Hood River, Oregon

diseased, wormy or otherwise defective fruit should be packed. Overripes may be packed for special purposes with the letter "R" marked on the end of the box. But only load overripes as instructed. The variety, numerical count and grower's name to be placed on the label-end of the box with rubber stamps.

CANTALOUPES

If this important industry is promoted more care must be used in grading and packing. It is absolutely necessary that a standard grade be adopted as well as a standard of pack. The commercial counts as recognized for cantaloupes are: The 36 count of "Jumbos"; the 45 count of "Standards"; the 51 count of "Ponies." There must be a straight pack, uniform size cantaloupes in each grade, clean and at a stage of uniform ripeness that will permit long-distance shipping.

PEARS

Standard boxes, 8½x11½x18, inside measurements, only to be used. In making up boxes use 24 cement-coated 6d regular nails. The three grades, Extra Fancy, Fancy and C grade, to be used, only the three varieties showing size limit, listed under the Extra Fancy column in the following table, to be packed in the three grades. The remainder of the varieties to be packed in the Fancy and C grades. Extra Fancy grade defined: Pears to be packed in this grade to be hand picked, clean and sound, free from insect pests, sun damage, broken skin, scale, scald, worms, worm stings, infectious diseases, limb or leaf rub, misshapen fruit and all other defects equally detrimental. Fruit bruised or punctured or showing other evidences of rough handling will not be permitted in this grade. Pears must have stem or part of same intact.

D'Anjou—Pears that show a characteristic russeting at blossom end may be packed in this grade when they have all the other necessary requirements, provided the russeting does not extend out of the bowl onto the cheek of the pear, and provided that this russeting is not larger than three-quarters of an inch in the aggregate. Two very slight leaf scratches, neither to exceed one-fourth of an inch in length, or one not

Hood River Nurseries

Have for the coming season a very complete line of

Nursery Stock

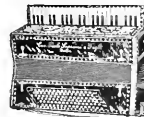
Newtown and Spitzenberg propagated from selected bearing trees. Make no mistake, but start your orchard right. Plant generation trees. Hood River (Clark Seedling) strawberry plants in quantities to suit.

Send for Prices

Rawson & Stanton

Hood River, Oregon

GREAT PIANO ACCORDEON



An Accordion with Piano Keyboard, different in effect and tonal quality from the regular accordion as a magnificent Church Pipe Organ is from the common hand organ.

Unquestionably the most interesting novelty introduced in musical acts in recent years and proving one of the leading attractions in vaudeville, appearing in largest and foremost houses in the United States can be played by any piano or organ player with but very little practice and can be mastered by anyone with but slight musical knowledge, so that it is well adapted for home or amateur use. Send us a postal immediately for a catalogue with full particulars.

LYON & HEALY, 21-26 E. Adams St., CHICAGO

WRITE ME!

Get my new, low factory prices on the Famous Galloway Engines and big, powerful FREE Catalytic Engines are standard, high quality engines. Made in sizes from 1 1/4 to 15 H.P. Over 40,000 in use today. All sold on 30 days FREE trial, backed by five year guarantee and \$25,000 bond. Money back if not satisfied. Investigate! Best prices, excellent parts for inferior engines. Save millions of profits. Do your duty.

BUY DIRECT FROM THE MANUFACTURER and Save \$50 to \$300 on Gasoline Engines

That come about as near keeping your money at home as any way you can think of. Write me before you buy.

FREE Service Department that will help you select and install the best's and also engine you need for your work without cost to you. Let me send you my New 10 1/2 hp model offer. Just write for my catalog and see, low prices today.

Address: Wm. Galloway, Pres., W.M. GALLOWAY CO., 1055 Galloway Station, WATERLOO, IOWA

BUY AND TRY

White River Flour

MAKES

Whiter, Lighter Bread

YOU CAN MAKE \$20.00 A DAY

AND JUST ONE MAN ON THE JOB WITH A KING OF THE WOODS DRAG SAW

Put fuel in the storage tank and over the support ground. One man writes he saved 40 days in 10 hours. Another saved 20 days in 3 days. Another writes his machine will slash a tree THREE IF MORE YOU SHOULD KNOW.

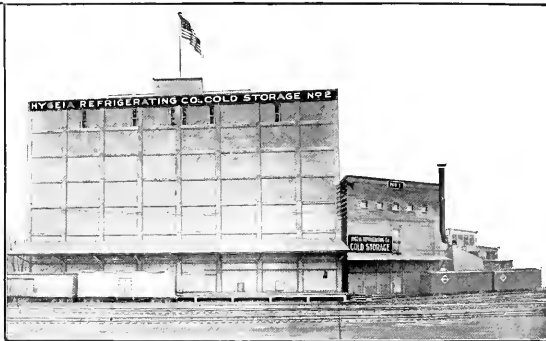


Reiterson Machinery Co. Manufacturers, PORTLAND, OREGON.

**HYGEIA
REFRIGERATING
COMPANY**

ELMIRA, NEW YORK

CAPACITY
35 CARS PER DAY
300,000 BOXES



EVERY FACILITY is offered for the successful storage and marketing of **Boxed Apples** for domestic and export trade.

Fireproof Warehouse
Lowest Insurance Rates
Four Trunk Line Railroads
Special Outgoing Storage in Transit Rates
Storage rates, etc., quoted on application

Orchardist Supply House

Pruning Tools Orchard Ladders



Picking Buckets Warehouse Trucks

Box Presses

Send for Complete Catalogue

E. A. FRANZ CO., Hood River, Oregon

TO DESTROY APHIS, THRIPS, ETC.
Without Injury to Foliage
SPRAY WITH

“Black Leaf 40”
SULPHATE OF NICOTINE

“Black Leaf 40” is highly recommended by Experiment Stations and spraying experts throughout the entire United States. Owing to the large dilution, neither foliage nor fruit is stained. Also, “Black Leaf 40” is perfectly soluble in water; no clogging of nozzles.

PRICES

10-pound Can **\$12.50**
Makes 1,500 to 2,000 gallons for Pear Thrips, with addition of three per cent distillate oil emulsion; or about 1,000 gallons for Green Aphis, Pear Psylla, Hop Louse, etc., or about 800 gallons for Black Aphis and Woolly Aphis—with addition of three or four pounds of any good laundry soap to each 100 gallons of water.

2-pound Can **\$3.00**
½-pound Can **.85**

If you cannot obtain “Black Leaf 40” from a local dealer, send us P. O. Money Order, and we will ship you by express at the above prices (for the United States), prepaying the expressage to your nearest railroad town in the United States. There is a duty charged on all shipments made into Canada.

The Kentucky Tobacco Product Company
INCORPORATED
Louisville, Kentucky

to exceed one-half inch in length, or a slight defect that shows only a slight discoloration of the skin and not larger than the end of a pencil, will not bar the pear from the Extra Fancy grade, providing the scratch or defect does not come on the cheek of the pear. For size limits and weights see Pear Table.

Fancy—This grade must be hand picked, clean and sound, free from insect pests, sun damage, broken skin, scald, scale, worms, worm stings, infectious diseases and all other defects equally detrimental, excepting that slight limb or leaf rub, scratches or russeting will be permitted, provided no pear shall show total bluish aggregating more than than three-quarters of an inch in diameter. Pears must have stem or part of stem intact. Fruit clearly misshapen, bruised or bearing evidences of rough handling will not be permitted in this grade. The amount of russeting allowed at the blossom end under the Extra Fancy rule will have no bearing on the total amount of blemishes or russeting allowed in the Fancy—that is, it will not be counted in on the total of the three-quarter-inch square mentioned above in this grade. Winter Nelis, Buerre Bosc and other varieties that have the same characteristic russeting over the entire surface; the russeting will not be counted in the totaling of the amount of blemishes allowed. For size limit and weights see Pear Table.

“C” Grade—This grade to consist of all merchantable pears not included in the Extra Fancy or Fancy grades, but must be free from worms, scale, stings or other insects pests. Slightly misshapen pears, or pears having limb rub or other defects not spoiling the merchantable quality of the fruit, will be accepted. Punctures or skins broken at stem must be kept out. Fruit bruised or showing other evidences of rough handling will not be permitted in this grade.

Seckel Pears—These should be packed in half boxes, the top faced and then the box filled gently so as to prevent bruising. All boxes to be lined and to be graded according to Fancy specifications. For size limit and weight of different varieties see Pear Table.

MARVELOUS "K" Hand Power STUMP PULLER



(Hand machine sketched from photo.)

"K" Hand-Power Machine makes stump pulling easy; strongest known. Even woman can outpull horse. 3-ft. cedar stump pulled 12 min., 8-ft. 3-inch fir (two pieces) 20 min. Good all moving, pulling.

Works like rowing boat. Made Krupp and hardened forged steel, weight 11 lbs. Weatherproof English cable. No chain to break. Cash or terms. Get literature with endorsing letters. Guarantee, special advertising low-price offer.

W. J. FITZPATRICK, Box "S,"
1926 Second Ave. Seattle, Wash.

YOU WANT THE BEST SPRAYER



You want to save time, temper, trouble, and trees. You want to save fruit that brings the highest price. You want to know all about our sprayer before you buy. There is more you might know. Do You Want To Know The Price?

Write for Catalog to
46
BEISERSON MACHINERY CO.
Manufacturers 182 Morrison St., Portland, Ore.

LARGE & SMALL AXLE GREASE CANS



WHITTIER COBURN CO. S.F. SOLE MFR.

Vehicles and Agricultural Implements

THE BEST OF ORCHARD AND GARDEN TOOLS A SPECIALTY

Gilbert Implement Co.
HOOD RIVER, OREGON

Save \$35 to \$50

Yes sir, I'll save you \$35 to \$50 in the first cost alone on the best, most modern, most sanitary and closest skimming cream separator ever built. When you buy the **New Galloway Sanitary**—you pay just one small profit above actual cost of materials and labor. Why pay any dealer \$35 to \$10 for an inferior machine. Buy direct and save one-half. Get my **Special 1914 Offer and 90 Days FREE TRIAL** out of this machine right on your farm. The new Galloway Sanitary \$45ms to a trace, gears backed by \$25,000 bond. Write for new catalog and special \$34 offer that will help you save. Buy partly or entirely without cost in the end. Write today.

WM. GALLOWAY COMPANY
Waterloo, Ia. 463
1053 Galloway Station



Compatibility of Insecticides

Continued from page 10

senicals, except with the neutral lead arsenate, which is not affected by the alkali of the soap.

Emulsions.—The above remarks applying to coaps obviously may also be applied to the soap emulsions, with the added danger that the emulsion may be broken and injury result both from the soluble arsenic and the separated oil.

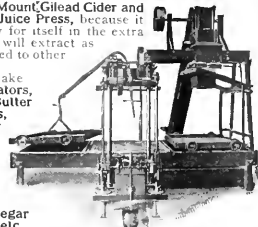
Contact Insecticide-Fungicide Combinations

Lime-Sulphur-Bordeaux.—This combination has been used with some success for the control of apple scab, but with more or less injury to the fruit. Definite classification must be deferred until more information is available. This subject brings to mind a "hard nut to crack" that was sent in to the insecticide laboratory in the form of a question by one of the county horticultural commissioners. The lower limbs of certain trees had been sprayed with bordeaux mixture as a check against the brown rot, either just before or just after spraying with lime-sulphur for red spider. It was noted that if the two sprays were applied within a week or so of each other a brown deposit was formed on the leaves and twigs where the two sprays came together. It was assumed that the deposit was copper sulfid. Now the question was whether this reaction would lessen the efficiency, either of the fungicide or of the insecticide. Questions of this sort are interesting from a chemical standpoint and are of considerable practical moment. Accordingly the literature was looked over and a few experiments were made and the reply given substantially as follows: "So far as known to the writer, this reaction has not been studied from a chemical standpoint. To predict the products of the combination with certainty seems out of the question for mixtures of such complexity. It seems very probable, however, that a sulfid of copper is one of the products. Under certain conditions, free sulphur, thiosulphates and sulphates of both copper and calcium would also be among the products. A few rough experiments made in the laboratory indicate that variations in the proportions of the two constituents made a great difference in the appearance of the final product. No very definite statement is therefore ventured. Various mixtures, loosely spoken of as "copper sulfids," have been made and experimented with by different workers and they all are said to possess marked fungicidal value. It would seem that the two sprayings under consideration would lessen the value of the lime-sulphur by removing some of the sulphur to form new compounds with copper, but that the new copper compounds would be efficient fungicides." In reply the propounder of the question wrote as follows: "My field observations have certainly been that the efficiency of the combination against red spider, for which the sulphur fumes are essential, is greatly less than that

BIG PROFITS in the Cider Business

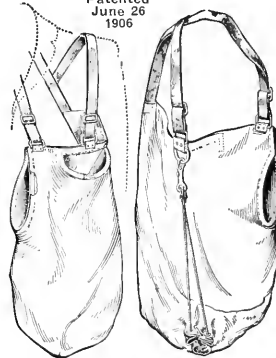
with a **Mount Gilead Cider and Grape Juice Press**, because it will pay for itself in the extra juice it will extract as compared to other makes.

We make **Evaporators, Apple Butter Cookers, Vinegar Generators, Spraying Outfits, Cider and Vinegar Filters, etc.**



Send for Catalog
THE HYDRAULIC PRESS MFG. CO.
60 Lincoln Avenue Mount Gilead, Ohio
Pacific Coast Representatives:
BERGER & CARTEL CO. 304-308 Mission Street, San Francisco, California

Patented June 26 1906



FRONT BACK

IDEAL FRUIT PICKING BAG

Made of heavy weight duck and so arranged as to equalize the load on both shoulders.

The openings are arranged so both hands can be used in picking, and the drawstring is arranged so the fruit can be let out at the bottom in emptying the bag.

The bag can be let down to the bottom of the box before opening the drawstring, thus not bruising the fruit.

This is the best and handiest arrangement for picking fruit that has ever been offered. A trial will convince even the most skeptical.

SAMPLE, POSTPAID, \$1.00
AGENTS WANTED
Barker Manufacturing Co.
35 Ambrose St. ROCHESTER, N. Y.

Established 1893

W. P. KRANER & CO.
Importers and Tailors
2nd Floor Couch Bldg.
109 Fourth Street
Portland, Ore.
GEO. E. KRAMER — C. W. STOSE

OUR SPECIALTIES

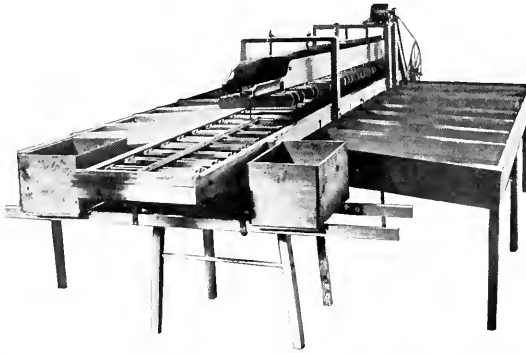
BOX APPLES and the three big PEACHES PEARs RUNES

We handle more box apples than any concern in Ohio and want to hear from every grower and shipper who will have either large or small lots to offer. Let us hear from you at once.

I. N. PRICE & CO., CINCINNATI, OHIO

REFERENCES: ANY BANK OR CREDIT AGENCY

The Pride of Oregon Apple Sizer



Is the most simple and economical sizer on the market today. Experience has demonstrated that sizing to eight divisions is more practical than a greater or less number of divisions and enables packers to pack the maximum quantity per day, thereby reducing the cost.

The sizing is done **ABSOLUTELY WITHOUT BRUISING.**

The sizer is strongly and simply constructed, with no complicated machinery to get out of order, and will last a lifetime.

The machines will make two grades at the same time and divide each into eight sizes.

The construction is so simple that the machine can be operated with $\frac{1}{2}$ -horsepower motor—either electricity, gasoline engine, or by hand.

For particulars address

The Pride of Oregon Apple Sizer

J. R. NUNAMAKER & CO.

HOOD RIVER, OREGON



You can buy an Edgemont Lid Press from

WE WISH TO AGAIN CALL THE ATTENTION OF FRUIT GROWERS TO OUR

Edgemont Lid Press

A press that is strong, durable, convenient and moderate in price.

That a Lid Press with nail stripper and cleat box, brackets to hold lids where you want them, cleat hooks to hold cleats while nailing and a perfect treadle ratchet is appreciated by the growers is shown by the sale of hundreds of them to growers not only of the Northwest but of nearly every fruit district of the United States.

Send for circulars and prices to

H. PLATT & SONS, Como, Montana

YAKIMA HARDWARE CO., North Yakima, Washington
 PLOUGH HARDWARE CO., Wenatchee, Washington
 BERGER & CARTER CO., 504 Mission Street, San Francisco
 B. G. PRATT CO., 50 Church Street, New York City
 INLAND SEED CO., 913 First Avenue, Spokane, Wash.

of lime-sulphur alone. We have not been able to get any definite line on its fungicidal value." Considerable time has been devoted to the discussion of this topic of lesser importance, but it brings up so many questions of interest that it is hoped the speaker may be pardoned for thus presenting the subject so much in detail.

Emulsion-Bordeaux.—A foreign reference is at hand in which this combination is reported to have been used with success.

Soaps-Bordeaux.—Soap has been recommended as an addition to bordeaux mixture to increase the spreading and adhesive qualities of the fungicide. Resinous soaps are to be preferred, as the copper resinate (insoluble copper soap) is more easily handled by the spray machinery. No injurious effects to the foliage or fruit are to be anticipated with this combination.

Tobacco-Bordeaux.—This combination is advised against for two reasons: First, copper is a precipitant for nicotine and it is believed will render the alkaloid inert; second, certain tobacco extracts containing much extractive matter may have a solvent action upon the copper of the bordeaux mixture and disastrous results may attend its use from the burning effect of the dissolved copper. It is quite probable that the above remarks may also be applied to paris green-tobacco combinations, although it may be that the less soluble paris green would not be so susceptible to the action of tobacco extracts. Time was not available to determine this point by laboratory experiments in time for incorporation in this paper, nor was this combination mentioned in the reports of experiments made with spray combinations which were reviewed.

General Discussion of Soaps

In order to more fully understand the effect of soaps and soap emulsions upon other spray materials a little of your time is asked to consider the composition of soaps. Soaps, as is well known, are made by simple mixtures or by boiling together either potash or soda lye with a fat or oil or resin. We may then consider the composition of the fats and oils rather briefly. The vegetable and animal fats and oils which

are suitable for making soaps are rather complex compounds, but for the purpose of this discussion may be considered to be composed of two important constituents of opposite chemical characteristics: (1) Glycerine, which is chemically known as a weak base and (2) a fatty acid, the kind of acid depending upon the kind of fat or oil. The lyes used in making soap are strongly basic compounds in which the alkali metal (potassium or sodium) is the base. They may or may not also have an acidic component. Bases possess different degrees of chemical activity and may be strong or weak bases. The stronger bases have the habit of replacing the weaker ones in a chemical compound. Other causes than the above also have to do with the replacement of one base by another, but to take up this would lead us too far from the subject. The potassium and sodium bases are very strong bases, while glycerine is a weak base, so that when the conditions are right the potassium or sodium of a lye will replace the glycerine of a fat or oil and enter into chemical combination with the fatty acids. Now this is just what happens in the process of soap making. (In the case of resin, oleic acid, etc., these substances have no base, but are of an acidic nature and will unite directly with the alkali bases to form a soap.) A soap, then, may be considered to be a fat or an oil in which the weak-base glycerine has been replaced by a stronger metallic base. Now it happens that the only soaps which will dissolve in water are the potassium and sodium soaps. Soaps of the other metals (such as lead, lime or copper soaps) are also readily formed, but these are all gummy, sticky masses, entirely insoluble in water and unsuitable for the preparation of spray mixtures. Furthermore, if any soluble form of lead, lime, copper, iron or any of the metals, except potassium or sodium, comes in contact with a dissolved soap the soap is broken up and an insoluble soap is formed corresponding to the metal. That is, a lead, lime, copper, iron or other insoluble soap. These soaps of

Your Future, Mr. Shipper

Experience is the Best Teacher

is of far greater consequence than your past.

Then why not you profit from the experience of others?

If you have lost money in the past, through misjudgment of your customers, that should be only another reason to convince you that intimate knowledge of the habits, policies and standing of your patrons (irrespective of whether you are marketing through distributing agents) is positively necessary if you expect and desire greatest success.

There is But One Place in the Whole World

Where you can get that knowledge—that confidential information.

Write us to explain our service.

You place yourself under no obligation whatever.

PRODUCE REPORTER CO.

NEW YORK, N. Y.
Fruit Trade Building

CHICAGO, ILLINOIS
Bell Telephone Building

Ground Phosphate Rock

The Natural Plant Food and Permanent Soil Builder

1,000 pounds per acre once in each four years will cost about \$1.00 per acre per year. At Pennsylvania State College \$1.05 invested in Rock Phosphate gave increased yields of \$5.85—over 500%. At Maryland Experiment Station \$1.96 gave \$22.11—over 1,000%. At Ohio Station each dollar paid for itself and gave \$5.58 profit. At Illinois Station \$2.50 gave the same return as \$250 invested in land.

Each ton contains 280 pounds of phosphorus, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

United States Phosphate Co., Salt Lake City, Utah

WRITE FOR LITERATURE

"Perfection of fineness in grinding," our motto

EFFICIENCY

An organization along broad and liberal lines for a nation wide, safe and sane distribution of Tree and Vine Fruits. Our services are available through our associate members to any and all growers and shippers of fruit.

MEMBERS

Geo. H. Anderson	Newcastle Fruit Co.	Producers Fruit Co.
A. Block Fruit Co.	Penryn Fruit Co.	Schnabel Bros. Co.
Earl Fruit Co.	F. B. McKeivitt Co.	Silva & Bergholdt Co.
Geo. D. Kellogg & Son	Pioneer Fruit Co.	Vacaville Fruit Co.

California Fruit Distributors

CHAS. E. VIRDEN, General Manager
SACRAMENTO, CALIFORNIA

Have You? Read This!

"At my home on Nob Hill I have two walnut trees which I purchased from your company. They are now 12 years old, were one year old when planted. They have been bearing eight years. The trees are perfectly hardy, having withstood a freeze of 20 degrees below zero. I gathered over six bushels of nuts from those two trees last fall. My grocer pronounced them superior in size and flavor to California nuts."
—E. W. Hackett, North Oakland.

Space here forbids much explanation, but if you will write us we will gladly explain the difference between the famous WROKEN, PRE-STRAIN, FRANQUETTE WALNUT and the common sort. You can afford and should have at least a few of these most desirable trees in your orchard. Write us—now. We also have, you understand, the largest assortment and stock of all kinds of fruits, berries, vines, roses, etc., in the West. OREGON trees are planted from coast to coast, because they are known to be always—dependable—first class.

Oregon Nursery Company

OREGON, OREGON

Dependable Salesmen Wanted

Better Cultivation - Better Fruit



The Baby Caterpillar Tractor will cultivate your orchard *without packing the soil.*

The moisture is kept in the ground; the loose mulch is saved. The long, wide Caterpillar tracks distribute the weight so that the pressure to the square inch is less than that of a horse or the average man.

CATERPILLAR

Reg. U.S. Pat. Off.

Cannot Pack the Soil

Handles easily.
Turns short from row to row.
Works close to fences and corners.

Only 58 inches high without canopy.
Works close up under the trees.
Doesn't injure the branches.

The Baby Caterpillar is guaranteed to do the work of 14 average horses—and yet it takes only one man to handle it. It will haul your fruit to market, plow, dig ditches and build roads; it will furnish power for sawing, threshing, grinding and all sorts of stationary work. It is an all round tractor for general farm use—absolutely practical; has paid for itself many times over for others. It will do the same for you.

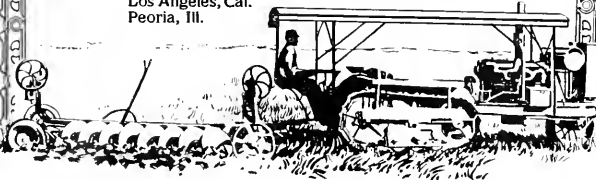
Our Catalog BE 59 tells all about the Baby Caterpillar.
Write for it today.

Everything for the Power Farmer—
Harvesters, Scrapers and Supplies.

The Holt Mfg. Co., Inc.

Spokane, Wash.
Portland, Ore.
San Francisco, Cal.
Los Angeles, Cal.
Peoria, Ill.

Calgary, Alberta
Stockton, Cal.
New York, N. Y.



YOU CAN EARN \$50.00 PER DAY with the Gearless Improved Standard Well Drilling Machine. Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours. Another record where 70 feet was drilled on 2 1/2 gal. distillate at 9c per gal. One man can operate. Electrically equipped for running muds. Fishing job. Engine ignition. Catalogue No. REIERSON MACHINERY CO., Manfrs. Portland, Ore.



For Domestic Water Supply and Irrigation

Ask your dealer or write
PHILLIS HYDRAULIC RAM CO.
Portland, Oregon

the non-alkali metals, being insoluble in water, form a curd and are of no value as detergents or for spraying. A familiar instance of this kind is the "curdling of water" when soap is put into hard water. The hardness of water is usually due to some soluble salt of lime or magnesia, and when these come in contact with the soluble soap the insoluble lime or magnesia soap is formed and is the "curd" of hard waters.

Soaps-Lime-Sulphur.—The "curdling" of hard waters just alluded to is precisely the same kind of a change that takes place when soap is added to lime-sulphur solution. An insoluble lime soap is formed that destroys the usefulness of the mixture. Practically all of the sulphur will be thrown out of a lime-sulphur solution by this treatment. The new compounds are not especially dangerous to use, but are apt to clog the spraying apparatus and the sulphur is no longer evenly distributed throughout the liquid.

Emulsions - Lime - Sulphur. — If the emulsion is a soap emulsion the soap of the emulsion will be broken up, as in the case of lime-sulphur, and the emulsion destroyed, setting free the oil and precipitating the sulphur. There is present the possibility of foliage injury, due to the uneven distribution of the oil.

Soap-Iron Sulfid. Soap Emulsions-Iron Sulfid.—The two combinations above are incompatible for much the same reasons as are the two previous ones, but to a lesser degree.

Tobacco-Lime-Sulphur.—Compatible.

Tobacco-Iron Sulfid.—Compatible.

This completes the discussion of the main part of the table. For convenient reference, however, the general effect of the alkalies and acids upon the various remedies is also indicated and will be gone over rapidly. This part of the table is given with the idea that it may be of service as a warning against some mistakes that might very easily be made, such as pouring lime-sulphur into an "empty" vinegar barrel or working up acid lead arsenate in a pot in which there is left the remains of the last batch of soap.

The Effect of Acids on the Fungicides

Bordeaux.—The common acids (with the exception of carbonic acid) dissolves the precipitated copper of bordeaux mixture.

PORTLAND, OREGON PORTLAND HOTEL

The hotel which made Portland, Oregon, famous
Most Desirably Located. In the Center of Shopping and Theatre District
Covers a City Block

Broadway, Sixth, Morrison and Yamhill Streets

EUROPEAN PLAN—\$1.00 per day and upward

Write for Portland Hotel Booklet

G. J. Kaufmann, Manager

Lime-Sulphur.—All acids, including carbonic acid, precipitate free sulphur from lime-sulphur solutions.

Iron Sulfid.—The stronger acids dissolve the iron sulfid of the paste, liberating hydrogen sulfid.

Effect of Alkalies on the Fungicides

Bordeaux.—Excess of the strong alkalies dissolve the precipitated copper of bordeaux mixture and form new compounds which are suitable for use in many instances, if the necessary caution is used.

Lime - Sulphur.—Lime - sulphur is broken up by the strong alkalies.

Iron Sulfid.—The strong alkalies will dissolve the precipitated sulphur of the paste and form caustic compounds.

The Effect of Alkalies and Acids on the Arsenicals

All of the arsenites are more or less decomposed by either acids or alkalies, producing soluble forms of arsenic. The acid lead arsenate is unstable in the presence of alkalies, while the neutral form is unstable in the presence of acids.

The Effect of Alkalies and Acids on the Contact Insecticides

Emulsions.—Emulsions are broken up by either alkalies or acids and the liberated oil may cause injury on account of uneven distribution.

Soaps.—More alkali added to a soap will not affect its properties. If injurious effects are produced it will be from the alkali and not from the change in composition of the soap. Soaps are decomposed by the strong acids. The fatty acids are freed from the base and are no longer a part of the soap.

Tobacco.—It is believed that alkalies would have no effect on free nicotine in extracts. Nicotine sulphate, however, would be decomposed by alkalies. The sulphate part of the compound

WE TEACH REAL ESTATE FREE

by mail. Under our system of course instruction you will become a proficient real estate dealer, procure ready buyers, close deals quickly and execute instruments without legal aid—all from your home. We assist you to a profitable realty business by co-operating with you on your sales and derive our returns from 5 per cent of your first year's commissions. In addition to our free course instruction we furnish you with a complete office outfit of literature, books, forms, stationery, etc., at the actual cost price of \$9.50 (express prepaid). Start your business and instruction at once. Now is the season for buyers. Over three million acres sold in four years. Address Dept. M-25.

REALTY EXTENSION SCHOOL
4147 North Hermine Avenue, Chicago

The Question of the Day

With the fruit grower is, how can he derive a revenue from his overripe and unsalable fruits?

It can be done. It is being done. How? By the use of the new and up-to-date process of

DEHYDRATING

Which is the cheapest, quickest and best process ever devised for preserving fruit without changing the taste or flavor; is clean and sanitary. There is always a market for this product. Can be operated by anyone. Capacity to meet all requirements.

For descriptive booklet address

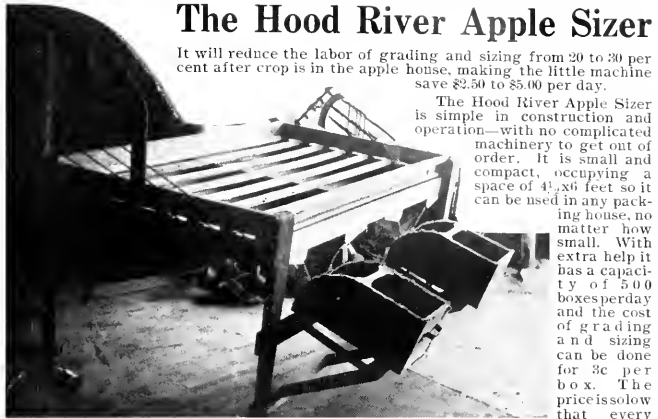
Luther Vacu-Dehydrator Co.
SPOKANE, WASHINGTON

The Hood River Apple Sizer

Apple buyers and consumers are demanding standardization and uniformity in the grading and sizing of apples. This work is usually done by hand, costing from five to fifteen cents per box. The apple industry demands economy in every phase of the business. Consequently an apple grower in Hood River has invented

The Hood River Apple Sizer

It will reduce the labor of grading and sizing from 20 to 30 per cent after crop is in the apple house, making the little machine save \$2.50 to \$5.00 per day.



The Hood River Apple Sizer is simple in construction and operation—with no complicated machinery to get out of order. It is small and compact, occupying a space of 41x36 feet so it can be used in any packing house, no matter how small. With extra help it has a capacity of 500 boxes per day and the cost of grading and sizing can be done for 3c per box. The price is so low that every grower, no

matter how small, cannot afford to be without it. ANY GROWER WITH A 1,000 BOX CROP CAN SAVE THE COST OF THE MACHINE IN ONE YEAR.

FOR PARTICULARS AND PRICES WRITE TO

J. F. VOLSTORFF, Hood River, Oregon

“PEARSON’S”

(CEMENT COATED)



WE MAKE 200 DIFFERENT SIZES SUITABLE FOR EVERY PURPOSE

Honest Quality and Full Count have made them the world's standard.

Always Specify

PEARSON'S

Accept no Substitute

J. C. PEARSON COMPANY, Inc.
Old South Building
Boston, Mass.
Sole Manufacturers

A. C. RULOFSON COMPANY
No. 315 Monadnock Building
San Francisco, Cal.
Pacific Coast Sales Managers



MR. FRUITGROWER
 Are you getting full value for your fruit? Are you sending it into market properly sorted? Is this sorting accurate, or are you depending on old fashioned hand sorting methods? If so, you are **GUESSING** at your business-- Now, apply modern methods, sort your fruit by weight--size your fruit by scientific, accurate methods
 Use the **Wood's Automatic Fruit Sorter** and cut down your expenses, increase your profits. All about it in free booklet, with any other information you desire.
 Minimize the Bruising--Save Time--Save Money

CLIP THIS COUPON
 AND MAIL
 TO DAY

Wood's Automatic Fruit Grading Machine Co.,
 CLOGEN, UTAH

Gentlemen:
 Kindly send me full information and literature regarding your automatic fruit sorter

Name _____
 Address _____

would unite with the alkali and the nicotine would be set free. In this form the alkaloid would be just as active and probably more so, but would be more liable to lose by volatilization. Acids would have no effect upon the different tobacco preparations.

Spraying, Followed by Cyanid Fumigation

Paris green as well as the copper of bordeaux mixture are readily soluble in solutions of cyanid. Copper compounds in general form complex soluble salts with cyanids and soluble copper is injurious to foliage. Trees sprayed with any form of copper should not subsequently be fumigated with cyanid without the lapse of at least one year on account of the solvent action of the cyanid on the copper. So far as known there is no danger of this character from the use of the other sprays.

Need of Chemical Assistance in the Use of Insecticides and Fungicides

During the past two years an effort has been made to arrange a card index of the references in agricultural and chemical literature to insecticides and fungicides and allied topics. As a result many thousands of cards have been collected. But in this collection surprisingly few cards are found referring to articles which discuss the chemical composition of insecticides or their toxic action upon parasites and the hosts of parasites. The number of references to articles on spraying experiments, when, how and what to spray, etc., is very large. This work has been done mostly by the entomologist, the plant pathologist and the horticulturist, whose training and viewpoints are not chemical. The effect of remedies upon parasites and host has been carefully observed and this or that procedure has been recommended or condemned as the result of practical experiences. In many cases the reasons

Improved Metal Age Tripod Orchard and Step Ladders

NO NAILS OR SCREWS TO WORK LOOSE
 ABSOLUTELY THE BEST LADDERS MADE

**Efficiency
 Safety
 Durability
 Strength**

Ask your dealer to show them. If he does not keep them don't accept a substitute, but write to us.

Storey Manufacturing Co.
 1538-1541 Macadam Street
 PORTLAND, OREGON



Weight of ladder 32 pounds
 Weight of load 1397 pounds

Portland Wholesale Nursery Company

Rooms 301-302 Stock Exchange Building
 Corner Third and Yamhill Streets
 PORTLAND, OREGON

Things We Are Agents For

Knox Hats

Alfred Benjamin & Co.'s Clothing

Dr. Jaeger Underwear

Dr. Deimel Linen Mesh Underwear

Dent's and Fownes' Gloves

Buffum & Pendleton

311 Morrison Street

PORTLAND, OREGON

for a decision concerning the suitability of a remedy have been very obscure and the subject of much speculation. Conflicting results have been very often obtained without apparent cause. The weather, the method, the remedy and the time of application have all been blamed as the cause of failures. These are doubtless all great factors influencing the success of spraying practice. Chemical advice has sometimes been asked and some of the points elucidated. This advice is frequently given after making some simple laboratory tests without any very extended investigation. The chemist's time and attention is usually well occupied in the investigation of other problems and his assistance is given by way of making a few determinations to confirm theories and work of this character is gotten out of the way as soon as possible in order to go on with the regular work. Of recent years the need of chemical aid has become more and more apparent to assist in the solution of some of the vexing problems that confront the worker in this line of activity. Much of the work incident to the administration of the federal insecticide law and the insecticide and fungicide laws in operation in a dozen of more states is of a chemical nature, and has created an absolute necessity for a more comprehensive knowledge of the materials which these laws seek to control. And so there are now a few chemists who are devoting considerable time to the study of insecticides and fungicides and valuable articles are beginning to appear, written from their standpoint. Most of their time must necessarily be devoted to the origination and perfection of methods of analysis, but it is to be anticipated that our knowledge of these important agricultural materials may be greatly



Will the Blizzard last? Well, it looks that way

How long will a Blizzard Ensilage Cutter last? Nobody knows. Blizzards haven't been on the market long enough to wear out. Most of the Blizzards—the *original* blower cutters—built 12, 13, 14 years ago, are still going. James S. Wilson & Bro. of Paris, Ky., have a customer who has used a Blizzard fourteen years—without one penny repair cost. The

BLIZZARD Ensilage Cutter

is built to last. It is very simple. Little to get out of order or to cause repair cost. The parts that wear can be replaced at small cost. No other cutter so durable.

Big results with small power

A farmer's regular farm engine will run the Blizzard, handle the corn fast as the corn can be fed to the machine, and

hustle it to the top of any silo, no matter what its height is. Makes even-cut silage. Self-feed table, takes the place of one man.



Come in, get a catalog and let's talk over the Blizzard

Buying an ensilage cutter is a mighty important thing. We've got some things to tell you about cutters that maybe you don't know.

MITCHELL, LEWIS & STAYER CO., Portland, Oregon

Please send me copy of Free Book—"WHY SILAGE PAYS."

My silo is feet high.

Name

Address

50c Free That's the cost of each copy of my copyrighted descriptive Catalog No. 6 of **Trees, Shrubs, Vines and Plants**

Write for a copy.

Mention this paper.

J. B. PILKINGTON, NURSEYMAN, PORTLAND, OREGON



Main 8582 - A 2695

Vacuum Cleaners

DUNTLEY AND OTHERS

Electric and hand power. The only Exclusive Vacuum Cleaner Store in the state. If we haven't what you want, we will get it for you. All machines fully guaranteed. Other machines taken in exchange.

W. L. BENTLEY & CO.
No. 473½ Washington St.
Portland, Oregon

Ridley, Houlding & Co.

COVENT GARDEN, LONDON

Points to remember when consigning apples to the London Market

- 1.—We Specialize in Apples
- 2.—All Consignments Receive our Personal Attention
- 3.—The Fruit is Sold by Private Treaty on its Merits

CABLE ADDRESS: BOTANIZING, LONDON

D. Crossley & Sons

ESTABLISHED 1878

Apples for New York and Export

CALIFORNIA, OREGON, WASHINGTON, IDAHO AND
FLORIDA FRUITS

Apples handled in all European markets at private sale. Checks mailed from our New York office same day apples are sold on the other side. We are not agents; **WE ARE SELLERS.** We make a specialty of handling **APPLES, PEARS AND PRUNES** on the New York and foreign markets. Correspondence solicited.

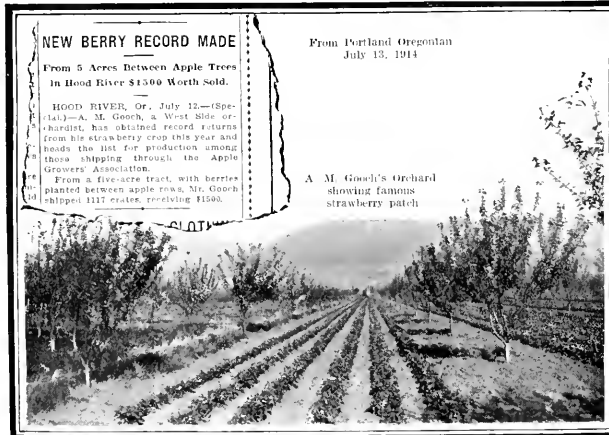
200 to 204 Franklin Street, New York

NEW YORK

LIVERPOOL

LONDON

GLASGOW



NEW BERRY RECORD MADE

From 5 Acres Between Apple Trees
in Hood River \$1500 Worth Sold.

HOOD RIVER, Or., July 12.—(Special.)—A. M. Gooch, a West Side orchardist, has obtained record returns from his strawberry crop this year and holds the list for production among those shipping through the Apple Growers' Association.

From a five-acre tract, with berries planted between apple rows, Mr. Gooch shipped 117 crates, receiving \$1500.

From Portland Oregonian
July 15, 1914

A. M. Gooch's Orchard
showing famous
strawberry patch

Rich in high grade organic nitrogen BEAVER BRAND ANIMAL FERTILIZERS "A Fertilizer for Every Crop"

Supplies your land with the constituent elements that makes fruit growing profitable. A. M. Gooch's success this year can be duplicated by YOU next year if you use this PROVEN fertilizer for fruit growers. Booklet Free.

PREPARED BY
UNION MEAT COMPANY
NORTH PORTLAND, OREGON

UNION MEAT COMPANY
NORTH PORTLAND, ORE.

HOOD RIVER, OREGON
June 23, 1914

GENTLEMEN:—

Would say I used your fertilizer on my strawberries I think I realized fully fifty percent more berries by its use.
(Signed) A. M. Gooch

amplified and that the valuable work of the entomologist, the plant pathologist and horticulturist may be supplemented by the work of the chemist.

Acknowledgements

No originality is claimed except in the manner of classification and in the arrangement of the table, which is thought to be in the most convenient form for reference. The table is given as being the consensus of opinion found in the published reports of the different experimenters throughout the United States, supplemented by personal consultation with experts in this line of work, and partially verified by investigations made in the insecticide laboratory of the University of California. The information has been collected from so many sources that individual acknowledgements would involve the incorporation of an unwieldy bibliography and could not well be made complete. Grateful acknowledgement is therefore made to all of the government and state experiment station workers who have contributed a share in investigating these problems; to the county horticultural commissioners, and to my associates, who have made valuable suggestions in the classifications.

Conclusion

It must be admitted with chagrin that our chemical knowledge of insecticides and fungicides is yet too imperfect to predict with absolute confidence the results to be obtained from the use of a new material or an untried combination of materials. The final decision must be made as the result of carefully planned practical field experiments. The table of compatibilities is therefore presented with considerable hesitation for the first time, and is offered for your criticism, in order that if any of the classifications are incorrect, or do not correspond with your experiences, the matter may be discussed and the faults corrected.

Almost the whole world knows of Hood River as a place that produces the best fruits, and all of Hood River Valley should know, and could know, that there is one place in Hood River, under the firm name of R. B. Bragg & Co., where the people can depend on getting most reliable dry goods, clothing, shoes and groceries at the most reasonable prices that are possible. Try it. [Advertisement]

Established 1881 — Incorporated 1893

Page & Son

INCORPORATED

120 and 122 Front Street
Portland, Oregon

OLDEST ESTABLISHED

Commission Merchants

Wholesale Dealers in

Fruit and Produce

Phones—Main 8080; Home Phone A 2017

MADE IN THE FOLLOWING SIZES:

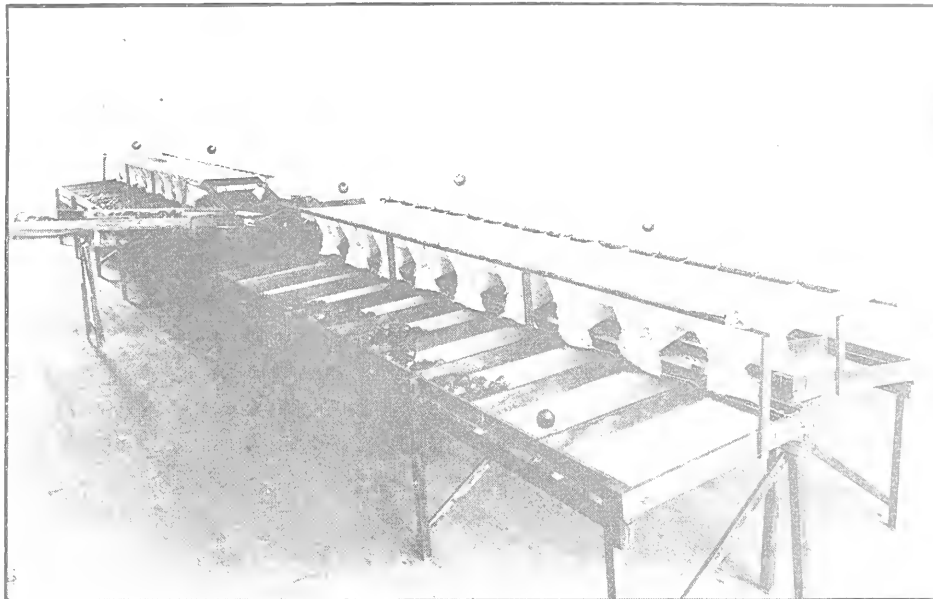
The 1-cup, for the small orchardist, with a capacity of 350 boxes per day and handling one grade.

The 2-cup, with a capacity of 750 boxes and handling one grade only.

The 4-cup, as shown in illustration, handling two grades, with a capacity of 1,500 boxes in ten hours.

The 6-cup, which handles three grades in the same operation, with a capacity of over 2,000 boxes in ten hours.

Mr. W. G. Price, the inventor of this machine, has had over one hundred patents issued to him; he has been with the government corps of expert army engineers and other highly specialized industries for years. He is a mathematician, engineer and scholar. We tell you this so that you may know that this machine is not the product of a dreamer, or of one unskilled.



Our Motto: To reduce the cost of putting fruit in the box, so that even a child could do the work and obtain the perfect pack. This machine will save you from three to five cents on every box of apples that you pack; enable you to get a perfect pack, and have every apple in the box the same size; enable you to get the proper bulge, tightness, and do away with over tight and too loose packs; the only machine on the market that does away entirely with expert packers; enables expert packers to double their output and to do better work. The apples are in full view in the bins, so that you can check up your help as to sorting and grading at all times, which you cannot do when apples are sorted from box to box. The only machine on the market that sizes your apples into the twenty Northwest standard packs, and will handle two grades at the same time, doing away with 80% of your crop at one handling, and has a capacity of 1500 boxes per day. It will handle apples, pears, peaches, oranges, onions, potatoes or any other fruit or vegetable that needs to be sized. It will handle fruit as delicately as a woman's touch. **We are demonstrating with eggs to prove its non-bruising qualities.**

Five thousand boxes will save you the price of the big machine the first season, and give you a better pack than you have ever been able to put up before. Twenty-five hundred boxes will save you the price of the medium machine. This Sizer is made in units, so that they can be added to at any time. Write us for further information, and we will cheerfully send illustrations, testimonials and more detailed explanations, and please mention "Better Fruit."

Price Fruit Sizing Machine

Designers and Manufacturers of Throwing Machines for Sizing and Sorting Apples, other Fruits, Vegetables and Nuts.

Works and General Sales Office, North Yakima, Washington, P.O. Box 931, Office No. 1 North Second Street

W. G. PRICE, President.

W. K. PRICE, Manager Works.

J. W. LAVIGNE, Sales Manager.

**Car Lot
Distributor**

AND

**Deciduous
Fruits**

BETTER FRUIT

VOLUME IX

SEPTEMBER, 1914

NUMBER 3

How to Save the Waste by Canning, Evaporating,
Drying, Vinegar, Cider and By-Products



APPLES GROWN IN JOHN DAY VALLEY

BETTER FRUIT PUBLISHING COMPANY, PUBLISHERS, HOOD RIVER, OREGON

Subscription \$1.00 per Year in the United States; Canada and Foreign, Including Postage, \$1.50

Single Copy 10 Cents

SIMONS, SHUTTLEWORTH & CO., Liverpool and Manchester
 SIMONS, JACOBS & CO., Glasgow GARCIA, JACOBS & CO., London
 J. H. LUTTEN & SON, Hamburg
 Agencies and Representatives in Every Important European Market

European Receivers of American Fruits

FOR MARKET INFORMATION ADDRESS

Simons, Shuttleworth & French Co.
 204 Franklin Street, New York

Ira B. Solomon
 Canning, N. S.

Simons Fruit Co.
 Toronto and Montreal

Simons, Shuttleworth & Webbing Co.
 46 Clinton Street, Boston

OUR SPECIALTIES ARE APPLES AND PEARS

IF YOU WANT TO MARKET
 YOUR

FRUIT

RIGHT

ALWAYS SHIP TO

W. B. Glafke Co.

WHOLESALE FRUITS
 AND PRODUCE

108-110 Front Street
 PORTLAND, OREGON

W. H. DRYER

W. W. BOLLAM

DRYER, BOLLAM & CO.

GENERAL
 COMMISSION MERCHANTS

128 FRONT STREET

PHONES: MAIN 2348
 A 2348

PORTLAND, OREGON

LEVY & SPIEGL

WHOLESALE

FRUITS AND PRODUCE
 Commission Merchants

SOLICIT YOUR CONSIGNMENTS
 Top Prices and Prompt Returns
 PORTLAND, OREGON

STORAGE

Ship your Furniture
 to us to be stored
 until you are located

TRANSFER & LIVERY CO.
 Hood River, Oregon

The Old Reliable

BELL & CO.

Incorporated

WHOLESALE

Fruits and Produce

112-114 Front Street
 PORTLAND, OREGON

Richey & Gilbert Co.

H. M. GILBERT, *President and Manager*

Growers and Shippers of

YAKIMA VALLEY FRUITS
 AND PRODUCE

Specialties: Apples, Peaches,
 Pears and Cantaloupes

TOPPENISH, WASHINGTON



Stop at "The Oregon," Hood River
 Clean Rooms—Excellent Meals—One block from depot

Mark Levy & Co.

COMMISSION
 MERCHANTS

Wholesale Fruits

121-123 FRONT AND
 200 WASHINGTON ST.
 PORTLAND, OREGON

A PANORAMIC VIEW

of the
 Famous Hood River Valley
 showing
 13,000 acres of apple orchards,
 Mount Hood, Mount Adams and
 the Columbia River Gorge.
 40 inches long Price \$1.00

SLOCUM & CANFIELD'S BOOK AND ART STORE
 Hood River, Oregon

W. F. LARAWAY

DOCTOR OF OPHTHALMOLOGY

EYES TESTED  LENSES GROUND

Over 30 Years' Experience

Telescopes, Field Glasses
 Magnifiers to examine scale

Hood River Oregon and Glenwood Iowa

**"WE STARTED RIGHT
AND WE ARE RIGHT"**

6458 Acres

IN OUR ENTERPRISE

4178 Acres

ALL IN APPLES

Nine miles continuous rows of trees, the largest apple orchard ever planted. All are one, two and three years old; the two and three year old all sold, amounting to over 3,000 acres.

We are now offering our one year at terms to suit you.

We give five years' from date of planting, free care. Our company is unlike others in the feature of staying with our purchasers after the free care period. Our plans make our interests mutual; we all work together for the interest of all.

Our Booklet will give you a simple statement of our dealings and methods. Write us for information.

DUFUR ORCHARD COMPANY

Northwestern Bank Building
Portland, Oregon

**The
First
National
Bank**

Hood River, Oregon

Capital and Surplus
\$135,000

4% Interest Paid on Savings
and Term Deposits

F. S. STANLEY, President
E. O. BLANCHAR, Cashier

Established 1900

LESLIE BUTLER, President
TRUMAN BUTLER, Vice President
C. H. VAUGHAN, Cashier

Butler Banking Company

HOOD RIVER, OREGON

Capital fully paid \$100,000.00

INTEREST PAID ON TIME DEPOSITS

We give special attention to good Farm Loans

If you have money to loan we will find you good real estate security, or if you want to borrow we can place your application in good hands, and we make no charge for this service.

THE OLDEST BANK IN HOOD RIVER VALLEY

LADD & TILTON BANK

Established 1859

Oldest Bank on the Pacific Coast

PORTLAND, OREGON

Capital \$1,000,000.00
Surplus 1,000,000.00

Officers

W. M. Ladd, President
Edward Coochingham, Vice President
W. H. Dunkley, Cashier

R. S. Howard, Jr., Assistant Cashier
J. W. Ladd, Assistant Cashier
Walter M. Cook, Assistant Cashier

INTEREST PAID ON TIME DEPOSITS AND SAVINGS ACCOUNTS

Accounts of banks, firms, corporations and individuals solicited. Travelers' checks for sale, and drafts issued available in all countries of Europe.

Selling Daily June 1 to September 30

**Excursion
Tickets**

To the East and Return from the
Pacific Northwest via

**Northern
Pacific
Railway**

Minneapolis	\$60.00
St. Paul	60.00
Duluth	60.00
Superior	60.00
Chicago	72.50
Milwaukee	72.50
Winnipeg	60.00
St. Louis	70.00
Kansas City	60.00
Omaha	60.00
New York	108.50
Philadelphia	108.50
Boston	110.00
Washington	107.50
Pittsburgh	91.50

And relatively low fares to
all other Eastern points.

Advise what points you wish to reach
and we will advise you rates. A letter
or postal will receive our best atten-
tion.

Westbound Colonist Fares

September 24—October 8

Ask about them.



A. D. CHARLTON, A. G. P. A.
Portland, Oregon

Arcadia Irrigated Orchards

The largest and most successful orchard project
in the entire West

7,000 acres planted to winter apples. Gravity irrigation. Located 22 miles north of Spokane, Washington, directly on the railroad. We plant and give four years' care to every orchard tract sold. \$125, first payment, secures 5 acres; \$250, first payment, secures 10 acres; balance monthly.

Send for booklet

Arcadia Orchards Company
Deer Park, Washington



When you get to Hood River
stop at the

Mt. Hood Hotel

Occupying one-half block
With a new brick annex

ROOMS SINGLE OR EN SUITE
TWENTY ROOMS WITH BATH
SPECIAL RATES TO FAMILIES

Trains stop daily in front of the Hotel
Bus meets all boats

HOOD RIVER VALLEY NURSERY COMPANY

Phone 5634 Route No. 3, Box 227 HOOD RIVER, OREGON

Plantation four miles southwest of station, Belmont Road

We will be pleased to show you trees, apple trees that have a heritage, a quality that should be considered by everyone who plants a tree. Our trees are grown in clean hillside virgin red soil with clay subsoil, producing the most vigorous root system. Our buds are selected from the best bearing healthy Hood River trees that make the Hood River apple famous throughout the world. Our trees will give you satisfactory results in vigor, fruit and quality. Ask for catalog. We guarantee our products. Apples, pears, peaches, apricots, almonds and walnuts. A complete line of the best varieties of all kinds of fruits.

H. S. BUTTERFIELD, President

W. J. ENSCHEDE, Manager

We make a specialty of

Catalogs Booklets Circulars

for Nurserymen, Fruit
Growers, Manufacturers
and Selling Agents

Write us for specifications and
information. Quality and Service

F. W. BALTES AND COMPANY
FINE PRINTING Portland, Oregon

ACID BLAST ETCHED PLATES
We have installed the only etching machines in the State of Oregon
Blast etched cuts have a printing quality which has never before been obtainable with process engraved plates
THEY COST THE SAME AS THE OTHER KIND

WE MAKE CUTS THAT PRINT

HICKS - CHATTEN ENGRAVING CO.
607 BLAKE-M'FALL BLDG., PORTLAND, OREGON

? WHO ?

A Personal Inquiry of the Fruit Growers of the Northwest

Who ? makes the price of your product? Do *you?* Other sorts of producers do, as a matter of course.

Who ? represents you in the markets? Is he actually *your* representative? Or does he merely operate with your product in conducting his own business? Does he handle products that compete with yours in the same markets? Does he have conflicting interests at the same or other seasons of the year? Other sorts of producers either *hire* their own representatives or have *exclusive* sales agency connections, as a matter of course.

Who ? finances the production of your product? A buyer who gives you an advance and mortgages your product to himself, thereby confining it to his own limited marketing field? Other sorts of producers get their loans from banks in a way that leaves their products *free* to enter all markets, as a matter of course.

Who ? is responsible to you for results and must account to you in detail? *Anyone at all?* Other sorts of producers have access to the books and can command itemized reports; they *control* the handling of their own products at all times, as a matter of course.

8,100 Affiliated Fruit Growers of the Northwest
are Producers on a Matter of Course Business Basis
Are You One of Them?*

North Pacific Fruit Distributors

**A Co-operative Central Selling Agency for
110 Local Fruit Growers' Organizations 110**

Spokane, Washington

*Note—Membership of affiliated organizations has increased from 7000 to 8100 the past month

No War Prices

On Goodyear Tires. All advances—due to doubled cost of rubber—were withdrawn on August 19th. This applies to dealers and consumers.

We have secured from abroad sufficient rubber at former prices to warrant this announcement. Goodyear prices are now everywhere the same as they were before the war.

Sturdier Tires

In These Four Ways Excelling All the Rest

The tires which rule in Tiredom now are Goodyear Tires—by long odds.

After men have used four millions of them, they lead in prestige and in sales.

The only reason is that motorists—hundreds of thousands of them—have proved these the sturdiest tires. They use them and tell other men to use them.

Where They Excel

Back of that super-service lies four exclusive features. They are these:

Our No-Rim-Cut feature. Time has proved it the only satisfactory way to completely wipe out rim-cutting.

Our "On-Air" cure. This exclusive process costs us \$1,500 daily, but it ends the chief cause of blow-outs.

Our rubber rivets. By a patent method, hundreds of these are formed in each tire to combat tread separation. They reduce this risk sixty per cent.

All-Weather treads—the matchless anti-skids. They are tough, double-thick and enduring. Resistless on wet roads with their deep, sharp grips; yet flat and smooth, so they run like a plain tread.

Upper Class Tires How to Get Them

These things make Goodyears the upper class tires. No other maker employs them.

And no other method combats one of these troubles in an equally efficient way.

These things mean safety, sturdiness and strength. They mean maximum mileage and minimum trouble.

When one tire gives them—and others don't—you should get the tire that does.

Any dealer will supply you if you say you want this tire. He will sell it to you at a price impossible were it not for our mammoth output.

It is up to you. Note again these extra features. Then ask some Goodyear user what it means to have such tires.

Find out why Goodyear leads.



The Goodyear Tire & Rubber Company, Akron, Ohio

Toronto, Canada
Branches and Agencies in 103 Principal Cities.

London, England
Dealers Everywhere.

Mexico City, Mexico
Write Us on Anything you Want in Rubber.

(1872)

BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

The Canner's Interest in the Fruit Industry

C. H. Bentley, Manager California Fruit Canners' Association, San Francisco, before California Fruit Growers' State Convention

THE relation of the canner to the fruitgrower may be likened in some respects to that of the mother-in-law—she may be cranky and fault-finding, but she is very handy when things go wrong; and so the canner, with all his faults, is helpful to the fruit industry, not only in emergencies but in the ordinary course of the growers' troublesome business. Time was, and that recently, when business was conducted on the principles of a horse trade,—each party to a transaction figuring that one or the other must get the worst of it and each taking good care that the other got it, but in these days, when efficiency in business has demonstrated the fallacy of such methods, canners and growers are recognizing that permanent, successful business can only be founded on the square deal. The grower may now talk with the canner without hiding his watch. He may now sign a contract selling his crop with a confident belief that the crop is sold even if the market goes down. The canner signs the contract with full confidence that the grower will hide his best fruit on the bottom of the box, and believes that if the market goes higher he will get the fruit he bought, and not the crop of all the grower's neighbors in addition. We have much in common interest and the State Board of Horticulture and the State University render a great service to us all in providing such an opportunity as has been given in these convention days.

The canner has been of practical service to the fruit industry in many ways that probably escape attention. He often experiments with new varieties on his own farms and orchards, demonstrating on a practical scale new and improved methods. He has led the way and assisted financially and otherwise in fighting pests that threaten important varieties of fruits and vegetables. He gives a profitable and convenient market of great importance to the growers of many varieties. By canning the surplus in a season of plenty he extends the market for the producer. He gives employment under healthful, pleasant, instructive and remunerative conditions to thousands of employes during the summer and vacation. He supplies a superior article of diet at low cost and great value throughout the year. He exploits new markets, advertises the state and opens up markets not only for the canned article but for the fresh and dried fruits. His market is largely in other states, so that outside money is brought

into the state to be spent largely for labor, for fruit and for other materials produced for the most part within the state. He often assists the responsible grower in a financial way through loans and advances, though in many cases growers have come to such prosperous conditions that they are often creditors rather than borrowers. These, then, are some of the points of contact showing the relation of the canner to the fruit industry. Assuming that you accept these as credentials, I

jellies, stewed in kettles with a high percentage of sugar, are not so dependent upon hermetic closure, as the sugar acts as a preserving agent. For these so-called preserves, jams and jellies, California produces suitable berries, sour cherries, peaches, plums, quinces, currants, gooseberries, apples and figs, but of greater commercial importance are the fruits that are generally used for tinned or canned fruits,—apricots, peaches, pears, cherries and plums.

It may seem strange to some of you who have fresh apples all the year that there is a considerable business in California canned apples. These are chiefly put up in the large tins for hotels and pie bakers, peeled, cored and quartered, ready for use. They are more convenient and frequently cheaper than the fresh apples. A limited quantity is packed in smaller tins for table use in the tropics, where fresh apples quickly spoil. About 2,500 tons are canned annually in California, chiefly Newtown Pippins. The firm white apples are required. For the very best quality of table apples the average price is about one cent per pound. The undersized fruit is largely used for the pie grade. Wormy apples are useless on account of the additional waste and expense in coring and removing disfigurements. Thanks largely to the university, apple growers have been shown that the codling moth is not inevitable nor the plague of vengeance. The apples for canning purposes come largely from Sonoma, Santa Clara and Santa Cruz Counties. The growers have the opportunity of selling for fresh-fruit shipment, for canning or for drying. On suitable land and in certain locations growers have prospered, but with the enormous increase in the acreage of Oregon and Washington, California has serious competition and the relatively small demand for canned apples offers no great aid to the solution of this serious problem.

The canner is of more importance to the grower of apricots, for this variety, like that of pears and peaches, is exported all over the world to all countries which have not set hostile tariffs against us. In a normal season 20,000 tons of apricots are canned in California. Fruit of good size with a clear skin, golden color and firm texture is desired. As a rule apricots are packed unpeeled, as the skin gives a peculiar flavor and character which is desired. This makes the canner very particular about apricots being free from fungus or skin blemish. The Royal, Blenheim

Features of this Issue

THE CANNER'S INTEREST IN THE FRUIT INDUSTRY

UTILIZATION OF WASTE FRUITS IN VINEGAR MAKING

BY-PRODUCTS OF THE APPLE

SECRETS OF SUCCESS IN CANNING

DRIED FRUITS—BY-PRODUCTS OF THE NORTHWEST

DRYING APPLES AN ANCIENT CUSTOM

shall undertake to discuss some things which I believe to be of common interest.

I am instructed by your organization committee to present facts of practical use, telling the particular kinds and varieties of the various fruits which are most desirable for canning. In order that we may understand each other, let me explain some fundamental things relating to fruit canning. While there is a limited quantity of jams, jellies and preserves manufactured commercially within the state, by far the larger quantity of fruit is used for the ordinary canned fruit, that is, fruit that is filled into the can fresh before cooking. Sugar syrup is then put in merely for flavoring, the can is hermetically sealed and finally processed or sterilized by heat. Sugar is not essential to the keeping qualities. The endeavor is to keep the fruit in its natural appearance, flavor and condition. When properly cooked or sterilized canned foods will keep so long as the hermetic seal is unbroken. If rust forms on the tin it soon penetrates and destroys the seal, admitting the air with its microscopic germs of fermentation and decay. The preserves, jams and

and Hems Kirk varieties, as grown in Santa Clara Valley, give best results to the canner. They have high color, flavor, firm texture and are usually clean and of good size. Moorpark has a flavor preferred by many and they grow to a larger size, but they ripen unevenly, one-half ripening before the other, and the upper portion about the stem is usually green and hard after the lower portion is full ripe. Most of the fruit is simply washed, halved and pitted. The fruit grown in the interior as well as the southern part of the state is not so desirable in color, flavor or texture, although there are exceptional locations. With apricots the growers have three opportunities for disposing of their product, as the canner must compete with the shipper and the dryer.

As with apricots and apples, so with most of the important canning varieties of cherries. The dealer and consumer demand a clear, transparent syrup. For this reason our Royal Ann is wanted for its size and firm texture. When it ripens in the sun and takes on its beautiful red color it is not so desirable for the canner as the waxy-white ones which grow in the shade. The high-colored ones turn a russet brown after processing and the uninformed buyer thinks the fruit is bruised. Cherries are stemmed, washed and canned whole without pitting. Skin blemishes, bird pecks and cracks are accordingly very conspicuous and undesirable. They grow to perfection in the north-central counties of the state, are bought by shippers and by packers in Maraschino, as well as by canners. The so-called soft white cherries are less desirable because they have not the firm texture, do not stand handling nor processing so well as the Royal Anns and are smaller in size, although some varieties like the Rockport and Buttners are quite superior to other soft white varieties. Black cherries are not popular in cans, as the color darkens the syrup and the canner must sell at a much lower price and then only in a limited way. About 1,800 tons of Royal Anns and whites are used annually for canning, and probably 500 tons of blacks.

The Muscat or raisin grape is canned to a limited extent. The fruit is merely stemmed and washed. About 1,000 tons are used annually.

Nectarines are used in a very limited way. Some varieties have a high color at the pit, which discolors the flesh of the fruit when processed. All varieties must be well ripened to secure the flavor, and yet in this condition the fruit is so soft and juicy as to make it unsuitable for canning purposes. A very limited quantity is used and the fresh and dried fruit markets are more desirable for this variety.

The canner wants a peach of golden color, of good and symmetrical size, without color at the pit and the pit small. For these reasons, of the freestone varieties he prefers the Muir and the Lovell. The latter usually commands a premium over other freestone varieties. The chief objection to it is

that it ripens in late August when the canner is overtaxed with many different varieties of fruit. If a peach similar to the Lovell could be developed to ripen in July or in the middle of September it would be in high favor. About 24,000 tons are canned annually. Other varieties which may do well for shipping purposes, like Alexanders, Hales Early, Mary's Choice and Picquets Late, are not desirable for canning. In spite of the increased trouble and expense of removing the pit, Yellow Clings are the most desired of all California canned fruits, and more of these canned than any other variety. Fortunately different varieties have been propagated from the old original Lemon Cling, so that the canner gets an almost continuous season from late July until late September. Beginning with the Tuscan, Orange, McDevitt, Sellers, Phillips and ending with the Late Levi Clings. Owing to the congestion of peaches, pears, plums and berries in August the Early Tuscan and Late Phillips and Levi are preferred by canners. The Phillips is perhaps the most popular by reason of the firm texture, golden color, small pit and uniform symmetrical size. As with the freestone varieties, the clings are graded, washed, peeled, halved and pitted, although in the case of the clings a considerable demand has developed for slices. About 25,000 tons are used for canning. The White Heath Clings were formerly quite popular, but they apparently did not bear well enough to suit the growers and inferior varieties of white clings like the George's Late were planted, which were not at all satisfactory to consumers. They were tough, flavorless and red at the pit. With a good white cling like the McDevitt, particularly one ripening in September, this trade can be gradually recovered, and there is a need for this fruit. Canners will pay a premium over the price of yellow clings. About 900 tons are used for canning.

Bartlett pears are in good demand and canners use ordinarily about 20,000 tons per annum. Canners usually buy on specifications requiring the fruit to be free from scab and worms, to be of symmetrical shape and not less than two and a quarter inches in diameter. In preparation the fruit is peeled, halved and cored. The pear is a very satisfactory fruit to handle because the fruit is picked before ripening. It is shipped when firm and is accordingly delivered to the cannery free from bruises such as often come to other varieties. In the cannery the fruit is graded over and worked up as it ripens. While there has been serious difficulty with the pear blight, this variety seems to promise the grower the best results for years to come, assuming he has suitable land. He has a good market for shipping fresh, as the pear arrives in good condition, probably the best "shipper" of all California fruits. He has a ready buyer in the canner and a good market for the dried article if well handled. The tree is thrifty and hardy. Scab, scale and worms can be

prevented with reasonable care, and if the blight has no terrors the grower located on suitable soil seems in best position for years to come.

Egg plums, Green Gages, Golden Drop plums and similar varieties are used to a limited extent for canning. Buyers object to the colored varieties as they discolor the syrup. The fruit is merely stemmed, graded and washed and packed whole without peeling or pitting. About 2,500 tons are used for canning.

The varieties mentioned constitute those of greater importance to the canner, although the small fruits and berries are used by him as well as by the maker of jams, jellies and preserves. It should be remembered that while there may be a shortage on some of these fruits of minor importance it might not require much to create a surplus, and a grower should consult the manufacturer before planting any of these varieties on a large scale if he depends upon the canner for a market. California enjoys a fine position with Royal Ann cherries, Bartlett pears, apricots, yellow cling and white cling peaches. There is a strong export demand and there are none better, if so good, but conditions are different with our berries and small fruits. We have to admit it right here among ourselves that they are no better than those grown elsewhere, and we are accordingly dependent upon local trade.

Blackberries have been produced in large quantities chiefly in Sonoma County and are used extensively by canners. The Mammoth and the Lawson varieties are most common. About 2,000 tons are used by canners and makers of preserves. Far better results are secured from loganberries, as they are growing in favor, bring better prices in the fresh-fruit market, from the canner and from the buyer of dried fruit. Canners use about 750 tons. The Phenomenal variety seems to be preferred. In the dried form, loganberries are likely to supplant the Eastern dried raspberry in many markets.

From the point of view of the canner and maker of high-class preserves, California needs strawberries and raspberries of firmer texture and higher color. The varieties commonly grown are comparatively soft and juicy, suitable for jams and jellies but not for preserves. Such are the Dollar and Jessie varieties of the Florin district—the Banner and Malinda berries of the Watsonville district. The Longworth of the Alviso and Santa Clara districts has become too small to give much satisfaction to the canner or consumer. The Clark, Wilson and similar varieties grown in Oregon are preferred. They are apparently more hardy, more thrifty, better for shipping and for the table as well as for canning. About 800 tons are used by canners and preserves, but a much larger quantity could be used of better varieties.

Similarly with raspberries, canners find better results from Oregon fruit because it is firmer and higher in color. The fresh market seems to yield a very

profitable figure for all the raspberries grown, and for that reason there is little inducement for the grower to experiment with other varieties. The Cuthbert and Anwerp varieties are commonly grown; the former is preferred. Growers probably receive ten cents per pound or better from their shipments to the market. Cannery use about 100 tons, but more would be used if prices were nearer to those acceptable to growers in Oregon and Washington.

Gooseberries are used in a limited way for jams and jellies. If the large English gooseberry, as grown in Oregon, were produced here canners would be interested and could afford to pay a higher price. Formerly there was a larger demand for the canned gooseberry and canned currant, but there was considerable spoilage, due to the fact that growers were using dry sulphur to prevent mildew and using it after the fruit had formed. This sulphur attacks the steel of the tin plate and soon destroys the hermetic seal, creating a swell. Because of the high price currants are used commercially for jelly, but to no great extent for canning or for jams.

Calimyrna and White Endish figs are used to some extent, and if handled carefully the small size would bring from four to five cents per pound from the canner and preserve manufacturer. It seems difficult to have them packed and delivered in proper condition. If they are too green they are of little use, and if at all overripe they cannot be used for a high-class preserve or canned article, but merely for a cheaper grade of jam. Texas seems to be able to grow a small white fig of good quality and this is canned to a considerable extent. There would seem to be an opportunity for improvement here.

Damson plums are needed for preserves, jams and jellies. They bring a premium over the ordinary varieties like Gages and Egg plums. There are very few grown at the present time. Concord grapes are also needed for jams and jellies. The want is partly filled by the Isabella variety. Jam makers can afford to pay a premium for the Concord above the ordinary varieties obtainable. Quinces, which were for years a drug on the fall fruit market, are now in better demand. Crab-apples are in short supply commanding a price of 4½ to 5 cents per pound. Sour cherries are also used in a limited way, but there is small encouragement for the grower to plant them, as he can get better prices for the table and shipping varieties. The canner is limited in his price by Eastern competition.

This is primarily a gathering of fruit-growers and many would be uninterested in any discussion of vegetables used in canning, but it is not too much to say that if a variety of tender sugar corn free from worms could be grown it would lead to a tremendous growth in the canning industry, of importance to land owners, farmers, canners, dealers and consumers. Various experiments have been made, but the waste

and expense arising from the worm makes the canning unprofitable. There is need of a smooth, firm, red, bumpy, thrifty tomato. On account of the irregular shape of the variety now largely grown there is great waste in peeling.

There are some questions of vital interest to canners and growers alike which I present from the canners' point of view for your consideration. First of all the reputation of California fruit in Eastern markets. Most people there say, "Oh, yes, your California fruit is large and showy, but it has not the flavor of our Eastern fruit." If you pin them down you find very often that they have been tempted by some showy peaches which had been picked green, before they were fit to eat, and rushed onto the Eastern market. The consumer does not stop to think that this peach had to travel three thousand miles or more during a period of a week or ten days. He only knows that it has not the flavor like the Eastern or Southern peach which may have been picked only the day before he ate it, and so this prejudice arises against all California fruit, whether fresh or canned or dried. I sometimes wonder if the shippers of fresh peaches to the Eastern markets really get satisfactory returns and whether they could not be led to see that they could make more money out of pears or plums or other fruits than from shipping varieties of peaches. Under like conditions of harvesting and consumption, I believe we have as fine flavored peaches, pears and plums, yes, and apples too, as are grown anywhere, but you can't make the average Eastern buyer believe it.

Another difficulty with which the canner has to contend and which limits the output is the stupid prejudice which associates ptomaine poisoning with canned foods. Whenever a person has a cramp or a mysterious pain in the stomach the average ill-informed person begins to inquire if any canned foods have been eaten and if at any time within two weeks preceding the person may by any chance have had canned food, this luckless article is made the scapegoat for obvious indiscretions of the diet for chronic ailments and disorders. Newspaper reporters hail the news with delight, the headliner does the rest. The same verdict of the intelligent doctor giving the actual cause has no news value and no publicity. The facts are that very little is known of ptomaines by the most skilled physicians, but they do know that they are peculiar to animal products and are practically never found in fruits or vegetables. It is but common obvious sense to say that canned foods are a thousand times safer and freer from contamination and infection than the same foods handled fresh from the ordinary market, and for the simple reason that in processing or manufacturing the canned goods are necessarily sterilized and hermetically sealed.

The extraordinary health standard maintained by our troops in the Philippines was made possible by the use of

canned foods instead of the fresh fruits and vegetables of the tropics. So says Brigadier-General Sharpe, the head of the Commissary Department of the United States Army. Similar conditions have prevailed with the construction of the Panama Canal. One of the eminent physicians associated with John Hopkins University is quoted as saying that in case of any widespread epidemic in a city he would recommend the exclusive use of canned foods as a matter of safety, and the amazing fact is that the concern in which I am interested has distributed over one billion packages of California fruit and vegetable products and there has never been one single authenticated case of illness or distress arising from the eating of these products. This is important for you, because if it were not for the unreasoning, ignorant prejudice of the average consumer the output of the canners of California would be doubled, and this would be to the lasting advantage of the grower.

Another and very delicate question I wish to present is the matter of foreign markets. Growers of prunes, apricots, peaches and pears have long since appreciated the need of developing foreign markets, and yet we find in many countries there is a hostile import duty or tariff set against these products in the dried and canned form. We ship approximately 24,000,000 cans of apricots, peaches and pears to England in a normal year. Germany should be almost as good a market, but we ship to Germany only about two per cent of the quantity shipped to England, largely because of the high prohibitive tariff Germany has set against us. Similar conditions exist in Canada, France, Belgium, Holland, Scandinavia, Italy, Austria, Russia, Japan, New Zealand and Australia. It must be admitted that in many of these countries the present tariffs were levied against us in retaliation for our tariffs upon their products, and the pity of it is that in our recent tariff law there was no adequate provision for maximum and minimum rates so as to give our Department of State the opportunity for negotiating reciprocal reductions of tariffs against our products in exchange for the reductions we have given them. The new tariff law, with its many reductions, has been in effect eight months; there have been no reciprocal reductions in any foreign country so far as California fruits are concerned, but there have been some advances in the duty on our products. It would seem fitting for those of us who produce articles for export—growers of oranges, lemons, prunes, raisins, apricots, peaches and pears—to ask our representatives in Congress why we cannot secure some reciprocal advantage in foreign markets for the reduction in the tariffs in this country.

Finally, let me urge from the canners' point of view the serious menace to the entire fruit industry involved in the proposed eight-hour law. During the last two sessions of the Legislature canners have taken an active part in

seeing that the law as now applied to women does not affect labor engaged in the handling of fruit and perishable products. There has been no difficulty in demonstrating to the legislative committee the justice and the necessity for such exception, and there is certainly no need for making any argument with people like yourselves who are so familiar with the necessities of our industry, particularly as you have listened to such an able and earnest and practical discussion of the question by Mr. Hecke, but it occurs to me to remind growers of canning varieties of fruits and vegetables that the canner cannot contract for his fruit as he has done in the past, taking it as it matures, some days little and the next day much. He will not continue doing this under any such law. He will feel obliged to tell the grower that he must deliver only a limited number of tons daily, and in the event of any rush in the ripening of his fruit the grower would be under the necessity of finding a market for some of his crop elsewhere.

During the rush of July and August the canner is usually unable to get help enough, and in September, after the opening of the schools, he still has trouble, consequently it is entirely impossible to run night shifts as suggested by the proponents of the law, and even if it were night shifts would be more injurious to the well-being of young

women and men than occasional overtime. Thousands of the employes in canneries are young men and women who are working during the vacation months to help themselves through school and college. Many a thrifty housewife is eager to get a little pin money during the limited fruit season, just to help along. They are glad of the occasional overtime. When the eight-hour law for women was under discussion in the Legislature thousands of the women employes petitioned the Legislature, begging them not to deprive them of this work, urging the satisfactory conditions of the employment. I need not plead with you except to stimulate your interest and urge you to take an active part in seeing that people are fully informed, that a public sentiment be aroused against such legislation.

I thank you for your kind attention and I am sure that I give the unanimous opinion of the canners of California when I express thanks to Dr. Cooke, to the State and County Boards of Horticulture, to the College of Agriculture of the University of California, who have joined to make this splendid gathering an unprecedented success. I would express, as well, our pride and gratitude for these great agencies of the state which are doing so much for the upbuilding of our industry.

Representative Among Commercial Attaches

By H. B. Miller, Director School of Commerce, University of Oregon

WE have in the three North Pacific States about 1,000,000,000,000 feet, board measure, of standing timber. California has above 300,000,000,000 feet. Competitive with this in the export trade of the Pacific is British Columbia, with about 330,000,000,000 feet. Whereas the cut of the Pacific States is now about 8,000,000,000 feet a year, only a limited portion of which goes into the export trade, we of this region could cut 4,000,000,000 to 5,000,000,000 feet more a year for the general outside trade. Oregon alone could increase her cut by 2,000,000,000 feet.

The National Forests of the Pacific Northwest, owned by the federal government, have a stand of 263,790,631,000 feet of timber, of which Oregon has 119,910,531,000. If a valuation of but \$1 a thousand is given the total, the federal property in our forests aggregates \$263,790,631. The value of this stumpage will go higher as soon as a strong market for Northwestern wood is created, and \$2.50 a thousand, or an aggregate for the Northwest of \$650,000,000 is regarded a fair possibility of the future for the government's local forest asset. By helping create a lumber market abroad, the federal government will expedite this realization. The Northwestern lumber market is today depressed. Tariff reductions and eliminations, and assessing a toll on lumber ships from this Coast to pass through Panama Canal, will make for further injury to the business, unless extraor-

inary aids are given to create a market. Not only is the Northwest affected by this state of affairs, but the entire nation, as prosperity here in lumber manufacture means general benefit to the country.

Already the fruit industry of the Northwest has overtaken markets. The real, fundamental needs confronting the industry here today are cheap transportation and broader, more stable markets. This year the apple crop will run in Oregon, Idaho and Washington from 15,000 to 20,000 carloads, and by 1920, if the industry is properly protected, the yield should aggregate from 50,000 to 80,000 carloads. The berry and general fruit by-products yield is growing much faster than the market. There is practically no limit to these productions, if a market may be found. All the fruit interests are most keen in the demand for market helps, and it is but fair for the federal government to do something in helping to devise ways and means to solve the problem.

The Pacific Northwest now exports in the form of wheat and flour about 40,000,000 bushels of wheat. With the rapid strides being made in Idaho and Western Montana, and the enormous possibilities of cereal production in Eastern Oregon, it is clear that the exports in this line should increase. While the present exports of flour run about 3,000,000 barrels a year, they may be made much greater, and it is to find a market for this flour that the local

cereal trade asks the federal government's co-operation.

While this year the purchases of livestock at the main center of Portland aggregated only about \$17,000,000, it is conceded that the Northwest may easily maintain a livestock industry that will offer annually meat products worth \$75,000,000. The outside market for these products will be the main element helping to build up the industry to the figure named. The Northwest is peculiarly interested in having foreign work done that will pave the way for such a trade.

Water power in the Columbia basin is stated by competent engineers to be a minimum of commercially available horsepower in the streams of 12,775,000, and the maximum is near 20,000,000. Out of this total, only about 300,000 horsepower has been harnessed. This slow development is due to the fact that the demand for power has not been sufficiently strong. The Northwest, and especially that portion in the Columbia basin, is peculiarly interested in all studies that might point the way to use and realization of this energy. The manufacture of nitrates, reduction of pig iron, manufacture of steel, the fertilizer industry outside the nitrate line, manufacture of aluminum, and all other great industries requiring enormous, cheap power, are of the utmost interest to the people of the Northwest, and they would appreciate being shown how they may attract the same. In this work, the federal government could render a powerful aid if it would have informed men abroad.

In the Northwest particularly, and with almost equal force all over the Pacific Coast, there are millions of acres of tillable land in idleness. It is the supreme aspiration of all these Pacific communities to get these lands properly settled and developed. While this work is not directly commercial, it is of the most intimate relationship. All studies in how thrifty, competent people may be attracted here, and all plans that may acquaint the world with the opportunities found here, will prove of the most far-reaching ultimate commercial importance to the Coast.

Because of all these conditions, the Northwest should have a representative among the list of commercial attaches authorized by recent act of Congress. Secretary of Commerce Redfield has power of appointing these officials, and the Northwest should convey to him, through Senator Chamberlain, a sense of the needs here. A man who has a thorough grasp of all local commercial and industrial conditions would be the ideal man, and would prove of the utmost help to the whole region in establishing and extending its much-needed markets.

Mr. N. J. Gibson, who is well known throughout the Northwest, has been visiting Wenatchee Valley, so we learn through one of our exchanges, which also states that the Gibson Fruit Company will act as Eastern agent for the Wenatchee Fruit Growers' Association.

Utilization of Waste Fruits for the Making of Vinegar

By B. F. Butler, Chief Chemist Golden Gate Compressed Yeast Co. and Potrero Vinegar Works, San Francisco

VINEGAR, according to the latest technical definition, is a dilute solution of impure acetic acid, prepared by the acetous fermentation of alcohol or of substances which yield alcohol when suitably decomposed. This is technical enough explanation of what vinegar is, but what we are interested in are a few of the more practical factors concerned with its making. These points will be dealt with in plain terms, leaving the technical for those dealing with the subject from a purely technical standpoint.

Speaking simply, vinegar is dependent upon one main thing: That there be sugar present in the liquid desired to be converted to vinegar. Then in the making, two chief actions must ensue. First, the change of the sugar present into alcohol; second, the conversion of the alcohol into acetic acid. How these changes are brought about will be explained later in dealing with methods of manufacture. The color, and to a considerable extent also the odor and taste, of vinegar are influenced by the materials from which it is prepared. The chief sources are from fruits and grain. A small amount is made from the waste molasses of beet-sugar factories and from starch sugar or glucose, but the quantity is limited and the quality not inviting.

Of fruits, only a few carry sufficient sugar on the average to produce enough alcohol to convert to acetic acid of strength conforming to National or State Pure Food Law standards. Apples, grapes and limited quantities of pears and peaches are the chief sources of fruit vinegar. Late experiments of Professors Bioletti and Cruess at our State Agricultural Experiment Station demonstrate the possibility of oranges as a source of vinegar, but there are obstacles to be overcome before this source is established. Pineapples are another possible source of vinegar, and a very exceptional product can be made from their juice. Some pineapple vinegar has been put on the California market, but sales have never been pushed, with the result that it is a little known commodity. Let us return to present available fruit vinegars and deal with their preparation. We know them as cider vinegar and wine vinegar.

Cider vinegar constitutes about 15 per cent of the average total annual output of vinegar in the United States. Of the total amount of cider vinegar sold, in the neighborhood of 90 per cent of it is made in factories by the quick process, which I will explain later. Before the advent of the quick process the source of supply was mostly farmers who, because of the low price of apples at apple harvest, pressed quite a bulk of their crop into cider and allowed the cider to take its natural, slow course of "turning to vinegar." Only in isolated towns do we today find cider vinegar for sale which has been

made on the ranch or farm. Most every reader of this article is quite familiar with the general ranch method of making cider and its subsequent slow conversion into vinegar. The same general methods prevail in all sections of the country. In making cider vinegar on the ranch, the alcoholic fermentation of the cider is carried on by the native yeasts on the fruit and from the air. In the factory the cider is generally fermented by commercial yeasts to insure a more rapid, stronger and more certain alcoholic fermentation. Cider vinegar made in factories embodies still further different factors than the product made on the ranch. The apples used are the culls; those which, because of rot, worms, small and other defects, are unmarketable as apples, for pie fruit or other products. These culls and some fruit peel and cores from tributary canneries are known as vinegar stock. If the reader could see the condition of this vinegar stock going by carloads into some of the large cider vinegar plants at apple harvest time, the warm season of the year—this rotten, fly-blown, sour, foul-smelling conglomeration of material—to be made into a condiment for your consumption and that of your families, you would invoke your right of the initiative to legislate against its manufacture into and sale as vinegar. The product, cider vinegar, is a full, forceful and the best exemplification of the subject of this article, "The Utilization of Waste Fruits for Vinegar Making." This assertion is clearly demonstrated by the following facts and figures: One hundred pounds of apples yield on the average seven gallons of cider. Taking canning apples at \$1.25 per hundred pounds, the cost of raw material for one gallon of cider vinegar would be eighteen cents; to which must be added the cost of manufacture and the cost of selling. With cider vinegar selling wholesale at 12 cents per gallon without the container, or 6 cents below the cost of sound apples to make that gallon, from a commercial standpoint it is quite apparent it cannot be made from such fruit, but is made from the previously mentioned vinegar stock, costing a mere fraction of the price of sound apples. Eliminating the small per cent of cider vinegar made on the ranch and for sale, I feel perfectly safe in stating that 90 per cent of the cider vinegar on the market is a product in direct violation of the purpose of the National Pure Food Law.

Wine vinegar is made from the juice of grapes. When faulty fermentation gains the upper hand in wine making, the juice is converted to vinegar to save it from total loss. Oftentimes the acetic ferment (acetic acid bacteria) gains sway and by natural slow process the juice is converted to vinegar in a comparatively short time. It is, however, a rather uncertain thing to put too much reliance in nature's slow

process because of the presence in all grape must of various bacteria which can cause a disturbance in the acetification by the vinegar bacteria. For this reason the larger per cent of grape must which has failed to produce a passable wine is promptly forwarded to plants where it can be converted into vinegar by the quick process. Very few, if any, grapes are pressed with the purpose of making the juice into vinegar. Wine vinegar, as expressed above, is really the result of saving from total loss wines which have gone "bad." This loss—the difference in price between wine and wine vinegar—to the vineyardist would be practically eliminated if the use of cultivated—pure cultured—yeasts were adopted. Their use in proper pitching quantities would insure a cleaner, healthier fermentation of the grape must, with a resultant better flavored, higher quality wine, commanding a better market price.

Grain vinegar constitutes 80 per cent of the average total annual output of vinegar in the United States. It is no more than just to consume a little more time in a short description of its production. Grain vinegar is divided into two distinct classes, viz., malt vinegar and distilled vinegar. Malt vinegar constitutes a very small proportion of the two and is for sale almost exclusively in small, fancy containers at fancy prices for so-called fancy trade. The manufacture of the two vinegars is identical up to the end of the alcoholic fermentation. In the case of malt vinegar the fermented liquor, after filtering, is mixed with a proportion of finished vinegar and run over the generators for conversion to vinegar. In the case of distilled vinegar, the fermented liquor is put through a still and the alcohol distilled off and collected in dilute form called "low wines." These low wines are a clean, pure, dilute alcoholic liquor carrying 10 to 15 per cent alcohol by volume, or 20 to 30 proof; besides they carry the volatile esters or bouquet from a pure alcoholic fermentation of the extract of clean, sound, ripe grain. This process is under United States government inspection.

The materials from which grain vinegar is made are barley-malt, rye and corn. Barley-malt is the chief component. Some factories use no corn, but the majority use rye. For most factories the grain is bought entirely on analysis, which comprise chemical determinations and physical examinations by men trained to the line of requirements the grain must meet. Only the choicest sound, ripe grain is bought, in the majority of cases it being necessary to pay good premiums over the market price. These premiums are willingly paid in order to procure the very best of raw materials.

The grain before use is thoroughly cleaned by passing through grain-cleaning machines which separate from it

any foreign grain, seeds, dirt, sand, chaff, straw, cockle, smut and even fine dust. Immediately before use it is washed with clean cold water to further fortify the dry-cleaning process. The barley must be malted before use, which involves skill and knowledge on the part of the operators as well as expensive malting equipment. Great volumes of air are necessary for the respiration of the barley during its malting or growing period, and every cubic inch of this air is thoroughly filtered, washed and purified before entering the malting chambers. In some factories the malt at the end of the malting period is dried before use. In others it is ground without drying and is specified as green malt. The malt is ground into a vat, termed the mash tank, containing water of proper temperature. If corn is used it is previously cooked under pressure, which insures absolute purity. Where rye is used it is generally previously treated. Either or both, as the case may be, of these prepared grains are put into the mash tank about the time the malt is ground. The mixture is known as the mash. This mash tank is fitted with a mechanical stirrer or rakes, copper steam coils and copper water coils and accurate thermometer. By these means the mash is held at proper temperatures for the required length of time for the diastase of the malt to convert the starch of the grains to sugars, for the other enzymes to perform their functions, and withal to extract all available soluble materials from the grain. The liquor known as wort is drawn off from the spent grains, brought to proper temperature and inoculated with yeast from a pure culture, then fermented. When fermentation is finished the fermented liquor is separated from the yeast, and where distilled vinegar is to be made this liquor is passed through the still to obtain the low wines, as previously described. These low wines are mixed with the proper proportion of vinegar—the quantity depending on the system in vogue—together with a small amount of clean, clear, filtered beer, and passed over the generators to convert into vinegar.

The short process of vinegar making, no matter whether the raw material be fruit or grain, in a general sense is identical. It is known as the Generator Process. The generator is a wooden tank usually from 3 feet diameter by 7 feet high, to 3½ feet diameter by 8 feet high, inside measure, with a tight bottom. This tank is filled with shavings specially made for the purpose. Beechwood is most preferable, though spruce makes quite a satisfactory shaving, but shorter lived. Strips of rattan are sometimes used as a substitute for shavings. About eight inches from the top of the generator is fitted a perforated wooden head. On this perforated head is fitted a balanced dumper which serves as a distributor. Near the bottom of the generator, around it, are bored a few small holes. These are for air intake. The alcoholic liquor, known as the feed, is led to the dumpers in measured quantity, varied ac-

ording to the material or system. The quantity ranges from about 13 to 30 gallons per 24 hours. Being distributed over the perforated head it trickles down through the shavings, by which it is split or spread into very fine particles. The air coming in through the air holes near the bottom of the generator passes up through the shavings against the feed material and out at the top. On its way a portion of the oxygen in the air combines with the alcohol present to produce acetic acid. The air must be proportioned properly to insure the best returns with minimum loss by evaporation or over-oxidation. Competent operators are very keen to note the slightest indisposition of one of their patients, the generators, and know the remedy to apply to bring it up to normal health. By this plain explanation it is meant to show that in the quick process of vinegar making the action of converting alcohol to acetic acid is chemical rather than the result of bacteria.

In conclusion, it must be evident by comparing the different methods and materials used as shown in the foregoing: That the practice of utilizing waste fruits for vinegar making is a travesty on the intent and purpose of the pure food laws. That there is utter disregard of any normal or statutory laws of sanitation governing the materials employed for cider vinegar. Foul, rotten and wormy fruit being used, and not cleaned or washed before pressing cider from it. Contrast with this the selection of grain for distilled vinegar and the due regard to sanitation evidenced by the care exercised in cleaning and washing the grain preparatory to processing. The conclusion must follow that some legislative action should be taken at once to prohibit the use of filthy waste fruits for vinegar making; which action would automatically tend to gain recognition for the clean, pure, wholesome product—vinegar made from carefully selected, highest quality, clean, sound grain.

Cider and Vinegar

Every indication seems to point to a large crop of apples in the Northwest, although not anywhere as large as originally estimated. The crop seems fair throughout the United States. The fruit growers of the Northwest are thoroughly convinced it will not pay to ship anything but good grades of apples to Eastern markets on account of excessive freight rate. There is nothing that injures a fruit market more than placing cull fruit on sale. It pulls down the price of good fruit and puts an extra supply on the market which will net the grower no money. Therefore we advise all apple men to consider the cider mill and the vinegar factory one of their best friends, and to furnish them with the proper supply of apples during the coming year. The more off grades they give the cider mill and vinegar factory the better their net results will be at the end of the year. In some districts there are vinegar plants, but in most instances these are

not able to take care of the entire supply of cull apples; fruitgrowers should provide against such emergencies by securing cider presses themselves with which to convert their own cull apples into cider or vinegar. Save the waste by buying cider presses. Saving the waste in many kinds of business, like the meat-packing business, is said to be the sole profit. The pure food laws are protecting the fruitgrower now in the vinegar business, so there should be a splendid opportunity for converting all the waste apples into vinegar, thereby making good money.

National Apple Day

National Apple Day will be celebrated in 1914 on the third Tuesday of October. This date has been adopted by a very large number of associations and states in the United States and Canada, although some states have an Apple Day of their own. Many Northwestern people feel that inasmuch as the Northwest grows principally winter apples the National Apple Day should be celebrated later on in the year when Northwestern apples are ready for consumption. But inasmuch as it is impossible to please every section there is just one thing to do, and that is for the Northwest to make the best of it and help the day along, even though the date seems a little early. However, it certainly seems wise to stimulate the public in consuming activity as early in the season as possible and get them in the habit of buying and eating apples.

The Apple World is a new publication, the official organ of the Apple Advertisers of America, an organization promoted and started by the advertising committee of the International Apple Shippers' Association, afterwards extending the scope of the organization to include growers, shippers and handlers of apples all over the United States, for the purpose of advertising the apple with an aim of showing its value as a food and diet with a view of stimulating the consumption and increasing demand. Mr. U. Grant Border, an apple dealer in Baltimore, is editor and Leonard B. Nolley, an advertising man, is the business manager. The initial number of the *The Apple World* in June is very very attractive, with a very significant cover page showing a great big apple, with the map of North and South America, the map of North America being labeled "The World's Apple Orchard." This first number is attractively gotten up typographically as well as editorially, first class in every respect. It is to be hoped that the aim of *The Apple World* will be accomplished and we wish it success in showing the dealers how to advertise the apple in an effort to induce a larger consumption and greater demand. If they succeed in doing this one thing alone and doing it well—the main object of the publication—O, great will be the satisfaction of achieving something and being able to say "It is well done."

\$ 1250



Will Buy the BEST Motor Car Four Cylinder Made for 1915

Fully equipped in every respect, Electric Self Starter, Electric Lighting, Power Tire Pump, and every one of the latest devices to secure comfort, accessibility and reliability.

Read These Remarkable Features:

- Light Weight
- Accessibility
- Economy
- Chrome Vanadium Steel Construction
- Loog Stroke, High-Speed L-Head Motors
- Three-point Motor Suspension
- Full Floating Rear Axle
- Two-unit—Three-point Construction
- Silent Electric Starter
- Electric Lights
- Silent Chain Drive Shaft to Generator and Distributor
- Positive Helical Gear Drive to Cam Shaft
- Water Pump on Fan Shaft
- Dimming Search Lights—Non-Glare System
- Electric Horn
- Speedometer
- Gasoline Gauge
- Mitchell Power Tire Pump
- One-Mao Top
- Integral Rain Vision Two-Piece Windshield
- Quick-Action Side Curtains
- Crowned Fenders
- Portable Exploring Lamp
- Demountable Rims
- Extra Tire Carrier in Rear
- Stream Line Body
- Licence Brackets

The year 1915 will not only be a Mitchell year, but it will be famous as a year in which the Mitchell establishes another standard of values in automobile building.

Those who have seen the new model—especially dealers—are not only enthusiastic, but are clamoring for the first cars from the factory.

Our Vice-President and Chief Engineer, John W. Bate, who designed the original Mitchell, designed the "1915" from stem to stern and all his ingenious ideas and practical engineering innovations have been utilized.

The result is a car that beats them all—at a price \$500.00 less than anything approaching it.

In fact there is no comfort, no "safety first" appliance, no accessory that adds to the enjoyment of automobile riding that will not be found in this car.

Over 95% of the car is made right in Mitchell shops which cover acres upon acres of space.

No detail is skimmed—everything is weighed, judged, measured, tested with critical correctness which gives the great service quality for which the Mitchell is famous.

Read the specifications in another column.

Compare them with any other car and you will find the most in the Mitchell. But after all don't judge the new Mitchell until you've sat at the wheel of the new model—until you get the personal touch.

We invite you to get this personal touch at our expense. We'll put a car at your disposal.

In the meantime send for the new literature which tells the whole story. Ask for Book 115

The Mitchell Line for 1915

- Mitchell Light Four—two and five passengers—4 cylinders—35 horse power—116 inch wheel base—34x4 tires, \$1,250
- Mitchell Light Four—6 passengers—same as above..... \$1,300
- Mitchell Special Six—5 passengers—6 cylinders—50 horse power—132 inch wheel base—36x4 1/2 tires..... \$1,895
- Mitchell Special Six—6 passengers—same as above..... \$1,935
- Mitchell Six De Luxe—7 passengers—6 cylinders—144 in. wheel base—60 horse power—37x5 tires, \$2,350

F. O. B. Racine

Mitchell-Sewis Motor Co.
Racine, Wis., U.S.A.

Mitchell

Light Four
5 Passenger
35 H.P. 116 in. Wheel Base

A New Spray for the Control of Insects

The following article appeared in a recent issue of "Mollers Deutsche Gartner Zeitung," published at Erfurt, Germany: "In response to a request from the honored editor of 'Gartner Zeitung' I express below a well-grounded proposition regarding the adoption of a new

spray which will be of great help to the gardener, orchardist and vintager in their fight against insect pests. Considering that a remedy can become universally serviceable only when it is cheap, generally known, harmless and easily applied, I quite disregard the customary mercantile spirit of secrecy.

The spray consists in a boiling down of seaweeds *Chondrus crispus* and *Girgatina mamillosa*, known in the market by the name Carrageen. Boil 2 kg. Carrageen in 100 kg. of water for one hour, adding enough water during boiling to make good the waste from steam. After straining and cooling you will

have a rather thick, gluey fluid. When this is sprayed on plants it will dry to a very thin but tenacious coating. Later on this coating loosens by rolling up and peels off. Naturally the application must be made in dry weather, as rain would dissolve the mucus. Imbedded in this mucus, which does no injury even to the most tender plants, you will find the little creatures. It is to be presumed, of course, that through careful spraying the insects have been actually hit. Since these creatures are not capable of any great exertion, it becomes evident that this simple means will be very effective. In the drying of this fluid the insects are glued in the thin skin and, killed, fall with it to the ground. Should more thorough work be desirable, as e. g., reaching insects in the bark of trees, then a five to ten per cent solution of benzine or petroleum must be added. The fluid has the valuable characteristic of uniting with these liquids into a more tenable and durable emulsion. The mixture must be well stirred to make an emulsion. I am of the firm conviction that this benzine-lime mixture, whose waxy coating will detach the bloodlice and their eggs, as also the caterpillars and pupa of other insects, will make an application of the indispensable poisons, such as arsenate of lead and others, superfluous. I am ready to furnish samples of Carrageen for trial where they will serve a technical purpose. I hope to be able to make an improved product from Carrageen which will do away with the ever troublesome process of boiling.—Dr. Phil. Max Issleib, Madgeburg, Germany."

Success With Hens

Raise chickens and thereby reduce the cost of living, and have a lot of fun doing it, is the advice of Robert Joos in his book, "Success With Hens," just published by Forbes & Co., Chicago (\$1.00). This is a complete guide to

Hood River Nurseries

Have for the coming season a very complete line of

Nursery Stock

Newtown and Spitzenberg propagated from selected bearing trees. Make no mistake, but start your orchard right. Plant generation trees. Hood River (Clark Seedling) strawberry plants in quantities to suit.

Send for Prices

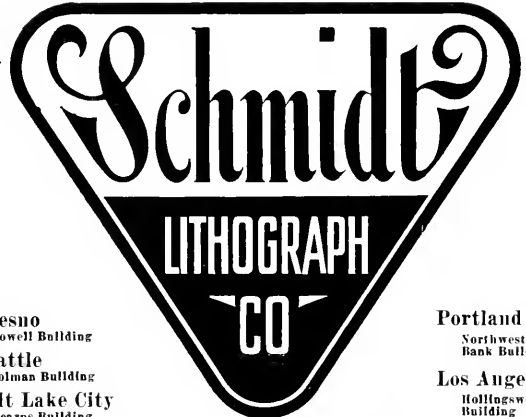
Rawson & Stanton
Hood River, Oregon

There's More Money

in fruit growing through the use of GOOD LABELS; not merely labels, but labels that develop business and give strength to your name or your brand. Drop us a line—let us tell you all about it.

We give more than quality and fair prices. As headquarters of the Western fruit label business, with a world of experience and a thorough knowledge of the situation, we can give additional service in the way of information, advice, suggestions, etc., that you can't get anywhere else.

Address or Call at Nearest Office



Fresno
Rowell Building
Seattle
Colman Building
Salt Lake City
Kearns Building

Portland
Northwestern
Bank Building
Los Angeles
Hollingsworth
Building

SAN FRANCISCO

poultry raising that thoroughly covers the subject by an expert. It is clear, practical and up-to-date. The fifty-five chapters give full directions for the hatching and brooding of chickens, incubation, feeding and housing, increasing the egg supply, cure of diseases, the marketing of eggs and fowls, and everything pertaining to the care of hens. Nothing is given but the best methods, and only those which have been proved by the experience of successful poultry keepers. The small and large poultryman, the beginner and the experienced, will find this book indispensable. It will reduce losses and increase profits.

Poultry raising is receiving a lot of attention these days, and deservedly,

for this "billion dollar industry" is an important one, ranking next to corn in the United States census report of land products. It is the hen that lays the golden egg which pays off the mortgage. Of course there have been failures in the poultry business, but not any more in proportion than in any other business. They are due to a lack of the preparation which the reading of such a book as this would provide. As the author says, "poultry raising, like any other business, requires work and good judgment. It offers big opportunities for the poor man, as it can be started on a small scale with very little capital, from which it can be increased gradually to an independent livelihood."

Denney & Company

DISTRIBUTORS

Apples, Peaches, Pears, Plums, Prunes

Before making arrangements for this season's business get acquainted with our record and manner of handling Northwestern Fruits. Several successful seasons make it worth your time to investigate our methods. We are no experimenters and have shown our ability to dispose of our shipments on f.o.b. orders.

Represented In All Leading Markets

Main Office, Chicago, Illinois

Secrets of Success in Canning

J. P. Zavalla, before California State Fruit Growers' Convention

IN general the heavy losses that sometimes occur in a canning plant are due to the fact that the different manipulations involved in the process of canning are improperly performed. The operations of canning as performed at home are in all cases easier than those employed in a large plant. Nevertheless it sometimes happens that canning at home becomes a little difficult and consequently the damage of the home-canned goods soon takes place. If we analyze the different factors that intervene in the decomposition of canned fruits and vegetables we will find that the most important are as follows: (1) Use of unfit raw material. (2) Use of unfit cans and glass jars. (3) Carelessness in the matter of cleanness. (4) Over-filling of the cans. (5) Carelessness in the matter of sealing the cans. (6) Carelessness in the matter of cooking the cans. These factors will be discussed in an ample and simple manner so as to give a clear understanding of the influence that they exert in the canning industry.

By unfit raw material we mean those fruits or vegetables which, due to one reason or another, are partially decomposed. The decomposition of fruits and vegetables is due to the action of very small organisms which can be classed into three groups: (a) Molds; (b) yeasts; (c) bacteria. The effects of

these organisms upon the fruits and vegetables become more noticeable when the surrounding temperature conditions favor their growth, and also when the decayed portions are allowed to remain in contact with the sound raw material.

These facts, considered in their true value, would be sufficient to prove the necessity of making a very careful selection of the raw material before it is canned. This operation is very simple, and it certainly pays to have it done as well as possible, for it will help the canner a great deal in obtaining a better looking product and also of long-keeping qualities. An operation that should be always performed is the blanching of the raw material before it is delivered to the canner. In this way we will greatly improve the appearance of the finished product. The blanching can be done by using a tank filled with hot water or any other thing fitted for that purpose, in which the raw material should be submerged for a few minutes with the aid of a basket.

The use of unfit cans and glass jars is a point which every canner must give a great deal of attention. The making of tin cans has improved right along since the beginning up to the present time, and as a result of this improvement we find that one of the greatest achievements of the industry is

the making of sanitary enameled cans. The reason why these cans are called sanitary is no other than that of the use of a very small amount of lead in the sealing operations. The advantages of this method of making cans cannot be doubted. The danger of poisoning effects due to the action of salts of lead has been minimized to such an extent that now it is of little consequence.

The inspection of the cans before they are sealed is an operation which by no means should be neglected. The time is coming when the machinery used for making the cans will reach such a high state of perfection in the matter of seaming that no allowances will be necessary for leaks due to imperfection on the side seaming of the cans. But as long as this matter remains to be solved the inspection of the cans, to which we referred in a previous paragraph, should be accomplished before the cans are filled with fruit if saving of money and time is the aim of the canner. The glass jars used in canning should be in all cases free of cracks which in time will break, due to lack of care in the matter of handling them or to differences in temperature. The rubbers should be new and caps should be sound and well fitting.

One of the most important features of the different steps involved in the operations of canning is that of the hygienic conditions under which the canning of fruits and vegetable is accomplished. The raw material after it

Improved Metal Age Tripod Orchard and Step Ladders

NO NAILS OR SCREWS TO WORK LOOSE
ABSOLUTELY THE BEST LADDERS MADE

**Efficiency
Safety
Durability
Strength**

Ask your dealer to show them. If he does not keep them don't accept a substitute, but write to us.

**Storey
Manufacturing
Co.**

1538-1541 Macadam Street
PORTLAND, OREGON



Weight of ladder 32 pounds
Weight of load 1397 pounds

is cut in pieces, for instance, has to be thoroughly washed. In this way we will secure a better looking product, especially when glass jars are used. Besides this, by using water of good quality in the operation of washing the fruit before it is canned, the number of organisms that usually come in contact with the raw material will be decreased, thereby facilitating the preservation of the fruit. Fruit that drops on the floor should never be put in cans before it is washed. The cans and glass jars, before being filled with fruit, should be carefully washed. The tables used for cutting the fruit, and also all the outfit used in the operations of canning, should be kept as clean as possible.

The cans and glass jars should be filled with fruit in such a way as to leave plenty of room for the syrup and also to facilitate the sealing of them. If the cans are over-filled the operations of capping are made difficult, especially when it is done by hand. Besides this, the danger of putting the fruit in contact with the acid and solder used for sealing is increased. The operation of sealing the cans is an important one, and the canner should take plenty of time to secure a good sealing. When the sealing of the cans is done by hand it requires the aid of experienced hands, otherwise small openings may be left, and therefore the action of the sterilizing bath will be of little value.

The last step in the canning operations is the cooking of the raw material. This operation can be considered as one of the most valuable features of this industry. If the sterilizing process is neglected the whole season's pack will be lost, no matter how careful the preceding operations have been accomplished. In order to facilitate the cooking of the fruit it is necessary to have it classified according to degree of ripeness. If this operation is carefully done much of troubles connected with the cooking are reduced to a minimum. The water used for cooking should always be kept at the boiling point. The length of time that the raw material should be cooked depends on the nature of the raw material itself.

It is a very difficult proposition to try to state definite figures to be used in the process of cooking, for the simple reason that they vary from one day to another. Then the best way to be followed in order to ascertain the right time of cooking is by making several tests during the day's run. The heat penetrability while cooking the fruit varies with the kind of fruits used, with the length of time, with the temperature of the cooking bath and finally with the concentration of the syrup. By heat penetrability is meant the time required to register at the center of the can the surrounding temperature. The higher the temperature registered at the center of the can after certain period of cooking the less

the danger of getting spoiled cans after this operation is done. One of the best ways to follow in order to know when the fruit is thoroughly cooked is by testing the pieces contained in a can. If they show the same appearance in color and also the same degree of hardness it will prove that they have received the right time of cooking. If the fruit has been cooked during thirteen minutes and its appearance does not show any sign of damage due to an excess of cooking, it would be advisable to prolong the cooking two or three minutes more, providing this increase in the time of cooking would do no harm to the product. In this way the probability of getting swelled cans due to under processing will be less, and financial results therefore better.

The previous discussion deals with the practical methods of minimizing spoilage. A few words regarding the "germs" that cause spoilage after canning may be of interest. In general organisms that occur in spoiled cans of fruits differ from those in spoiled cans of vegetables by being more easily killed by heating. The organisms in spoiled fruit are principally yeasts and molds, all killed below the temperature of boiling water. Those in swelled cans of peas, asparagus, etc., are usually of types of bacteria killed above the boiling point of water and hence require heating under steam pressure. Their resistance is due to formation of bacterial spores or "seeds" which are very hard to kill. If these are in the cans or on the vegetables, etc., they will multiply in the cans and spoil the vegetables if the temperature has been insufficient or the time too short.

Fruits contain a great deal of fruit acids that aid in sterilization or killing the germs by heat; vegetables are usually almost free from appreciable amounts of acid, making sterilization for this reason difficult. These facts explain why it is necessary to use extra precautions in sterilizing vegetables and why fruits are easily sterilized. It also explains why spoilage of fruit is usually due to leaks through which yeasts, etc., gain entrance, while swelling is often due not to leaks, but to growth of bacteria that were sealed up in the cans and survived cooking. In sterilizing fruit, then, one of the principal aims of cooking will be simply to

QUALITY BOXES

FOR

QUALITY APPLES

Stanley Smith Lumber Co.
Hood River, Oregon

render the fruit palatable and of the proper texture; if this is accomplished at the boiling temperature the yeasts, molds and bacteria on the fruit will be killed. If spoilage then results it means defective and leaky containers. Vegetables, on the other hand, because of the resistant bacteria spores, must be cooked under pressure, not with the idea of cooking or rendering them palatable primarily, but with the idea of killing the bacteria that cause swelling and souring. If pressure cookers are not available for vegetables repeated sterilization at 212 degrees, the boiling point of water, may be used; that is, three heatings on three successive days. The time between each heating allows the bacterial spores to sprout, and when young they are very easily killed. Hence if the spores have survived the first heating they will sprout between the first and second heating or second and third, and can then be killed at 212 degrees.

By way of summary it may be stated spoilage is due chiefly to the action of "germs" or small living organisms that decompose the canned goods. Their activity is favored by the following factors: Six defects mentioned at the opening of this article. The methods of keeping down spoilage consist in avoiding or controlling the above conditions.

Apple-Grading and Sizing Machines

The apple harvesting will commence in September, and in October everyone will be busy. While the crop is large

Things We Are Agents For

Knox Hats

Alfred Benjamin & Co.'s Clothing

Dr. Jaeger Underwear

Dr. Deimel Linen Mesh Underwear

Dent's and Fownes' Gloves

Buffum & Pendleton

311 Morrison Street

PORTLAND, OREGON

The Paris Fair

Hood River's Largest and Best Store

RETAILERS OF

EVERYTHING TO WEAR

AGENTS FOR

HAMILTON & BROWN AND
THE BROWN SHOES

HART, SCHAFFNER & MARX
CLOTHES

MANHATTAN SHIRTS

JOHN B. STETSON HATS

NEMO CORSETS

Strictly Cash—One Price to All

The Biggest Apple Dealers in California

WRITE OR WIRE US FOR DETAILED
MARKET INFORMATION

A. LEVY & J. ZENTNER CO.

Davis Street (from Washington to Oregon Sts.) San Francisco, California

Nailing Press

Having many years' experience in our business with fruitgrowers in Hood River and thoroughly understanding their wants, we have invented a new box nailing press, designed expressly for efficiency, economy and rapidity. It is small, compact, simple, easy and quick in operation.

The most up-to-date press on the market.

Lowest in price, selling for \$9.00 f.o.b.
Hood River, Oregon.

Send your orders or write for further particulars
and illustrated descriptive circulars to

Howell Brothers, Hood River, Oregon

throughout the United States, original estimates will not be fulfilled. Much encouragement is being offered by selling concerns and assurances given in the way of reasonably satisfactory prices, from the fact that they have stronger connections with selling agents in many more consuming cities, thus enabling them to seek a wider distribution than ever before. The profits of any business are made in two ways, on the prices secured and the minimizing of cost of production. It behooves the fruitgrower to give the latter most earnest attention and adopt any method that may be a saving to him in either growing or harvesting his crop. Three years ago the editor bought the first grading machine that was ever placed on the market,—the first one he ever saw. Since then the idea has become very popular and many apple graders are saving the growers money. Sorting and grading can be done for from three to four cents per box by using a good grading machine. Proper grading sorts the fruit in sizes, so that packing can be

more economically done, in fact many grading machines have saved from two and one-half to three cents per box on the packing. The old methods of sorting and wiping cost from five to eight cents per box. It is the experience of people who have used graders and sorters that from five to ten cents per box can be saved. A man with from two to four thousand boxes can save the price of a grading machine in one or two years, and with a large crop can not only save the cost of the machine the first year but considerable in addition.

A New Northwest Cold-Storage Plant

The Producers' Storage Company of North Yakima is erecting a fine cold-storage plant for the fruitgrowers. A company has been organized for this purpose with the following set of officers: General manager, F. E. Sickles; president, O. S. Follansbee; vice-president, C. G. Merrill; secretary, Walter Hebert; treasurer, E. L. Porter.

BETTER FRUIT

HOOD RIVER, OREGON

Official Organ of The Northwest Fruit Growers' Association
A Monthly Illustrated Magazine Published in the
Interest of Modern Fruit Growing and Marketing
All Communications Should be Addressed and Remittances
Made Payable to

Better Fruit Publishing Company

E. H. SHEPARD, Editor and Publisher

H. E. VAN DEMAN, Contributing Editor

STATE ASSOCIATE EDITORS

OREGON

C. I. Lewis, Horticulturist.....Corvallis
H. S. Jackson, Pathologist.....Corvallis

H. F. Wilson, Entomologist.....Corvallis

WASHINGTON

A. L. Melander, Entomologist.....Pullman

O. M. Morris, Horticulturist.....Pullman

COLORADO

C. P. Gillette, Director and Entomologist.....Fort Collins

E. B. House, Chief of Department of Civil and Irrigation

Engineering, State Agricultural College.....Fort Collins

E. P. Taylor, Horticulturist.....Grand Junction

IDAHO

W. H. Wicks, Horticulturist.....Moscow

W. S. Thornber, Horticulturist.....Lewiston

UTAH

Dr. F. D. Ball, Director and Entomologist.....Logan

Leon D. Batchelor, Horticulturist.....Logan

MONTANA

O. B. Whipple, Horticulturist.....Bozeman

CALIFORNIA

C. W. Woodworth, Entomologist.....Berkeley

W. H. Volk, Entomologist.....Watsonville

BRITISH COLUMBIA

R. M. Winslow, Provincial Horticulturist.....Victoria

SUBSCRIPTION PRICE:

to the United States, \$1.00 per year in advance

Canada and foreign, including postage, \$1.50

ADVERTISING RATES ON APPLICATION

Entered as second-class matter December 27, 1906, at the

Postoffice at Hood River, Oregon, under Act

of Congress of March 3, 1879.

Saving the Waste.—Every year in the Northwest, particularly when the markets are glutted, large quantities of fruit are shipped which bring the grower very little money or are allowed to go to waste without being picked. This is more particularly true in reference to peaches than almost any other fruit.

California sets a splendid example for the Northwest. California is the largest producer of canned fruits of any state in the Union. Last year the output of canned goods in the State of California was \$15,000,000. This does not include dried and evaporated fruits, raisins or any of the other by-products which are produced in that state.

The total fruit crop in the Northwest probably does not exceed \$15,000,000. California has converted more fruit into canned goods than the Northwest produces. The story is ably told in an article appearing in this issue entitled, "The Cannery's Interest in the Fruit Industry," by C. H. Bentley, manager of the California Cannery's Association, comprising some twenty-six different canneries, canning over two-thirds of the output of the State of California. This article in detail gives the volume of business in all of the different kinds of fruits—peaches, pears, plums, apricots, nectarines, grapes, etc.

If every reader of "Better Fruit" will carefully read this article he cannot help but be impressed with the importance of the canning industry in connection with fruit growing. If the Northwest would only wake up and comprehend the magnitude and importance of the canning industry to the Northwest there is no question but what the Northwest could promote a sufficient number of canneries and by-product factories to take care of the surplus that occurs almost regularly

each year when the fresh fruit markets become oversupplied. Vinegar plants, evaporators and by-product factories should take care of an immense quantity of apples good in quality but not sufficiently high in grade to justify Eastern freight shipment.

Hotels and restaurants prefer canned apples to fresh apples for pies and cooking in various other ways. Canned apples are more convenient and more economical for such trade.

One concern in California ships over 24,000,000 cans of apricots, peaches and pears annually to England alone.

In this edition of "Better Fruit" will also be found a number of other good articles. One is entitled "Secrets of Success in Canning," and another article on "Utilization of Waste Product in Vinegar Making," and another on "Drying Apples," and still another article giving sixty-eight by-products that may be made by any apple grower's family from the apple alone.

It is during the months of September and October when the greatest waste occurs in the fruit business. For this reason, that the object lesson may be significant, "Better Fruit" has thought it wise to issue a special edition on the subject of Saving the Waste.

This brings the writer to another subject for consideration, and that is Economy. In order to make any business profitable, waste must be eliminated. Canneries, evaporators, vinegar plants and by-product factories of all kinds will make an immense saving by utilizing what has annually gone to waste in the past few years in the fruit industry in the Northwest.

1914 Apple Crop.—Every year there are conflicting reports about the size of the apple crop in the United States. Regularly we have the usual number of estimates which state "This year's crop will be the biggest in the history of the business." Estimates have already been made for the Northwest of as high as 23,000 cars. The conservative estimates at the present time indicate about 15,000 cars. Reports are very conflicting about the Middle West. People who are not interested in the growing or selling of apples who have been in Kansas, Nebraska, Iowa, Illinois and Indiana state that the crops in these states are comparatively light this year. It would seem that there is some truth in this view of the matter, inasmuch as one of the daily newspapers the other day stated that Kansas had not had a rain for ninety-seven days. All reports seem to agree pretty generally that the crop in New York and Pennsylvania will be large, with a splendid crop in the New England states, although the quantity produced by the New England states is not great in volume. Growers in New York state will have to grade this year in accordance with the state law of New York. One well-posted man states that the grading rules were such that not to exceed eighty per cent of the crop would be packed if they attained proper size. Reports from New York state indicate there are many small apples at the present time and unless

the growth was very rapid from now on it was his opinion that the quantity packed would be materially reduced on account of under-size. However, there seems to be no question about the fact that New York and Pennsylvania will produce large crops of apples.

Some are estimating a 50,000,000-barrel crop this year in the United States. Information is more or less conflicting and as many reports give very low estimates in many of the other states, and as the year has been dry, which would cause a great many small apples, it does not seem as if one were justified at the present time in assuming that the United States would produce 50,000,000 barrels in 1914.

Newtown Pippin.—This seems to be a light year for the Newtown crop. Reports from Virginia, while giving 65 per cent of the crop in other varieties, estimate the Newtown crop in that state at only 25 per cent. At Watsonville, California, the Newtown crop is estimated at about 65 per cent of their crop. Southern Oregon is billed for a light Newtown crop and in the Hood River Valley the Newtown crop is about the lightest set of any. These are the principal Newtown producing sections of the United States—in fact, the only ones where Newtowns are grown to any great extent, as only a few are produced along the Hudson River in New York state, and a few cars grown in the Yakima Valley, where the Newtowns are not grown extensively. The Newtown is not grown in the Wenatchee district in a commercial way, neither is it grown in Montana, Idaho, Utah or Colorado or in any of the Middle Western states. In fact, Newtowns are only grown in five states—Oregon, Washington, California, Virginia and New York.

The Proper Spirit Necessary to Handle 1914 Apple Crop.—While it is generally admitted that the crop of apples will be large this year, perhaps some where around the 1912 crop, this does not by any means indicate that the market outlook is discouraging. The apple growers, their associations and marketing concerns should be awake to the fact that the United States must be made to consume more apples this year than ordinarily. This will not be done if the proper effort is not made; it can be accomplished and satisfactory prices obtained if the business is handled in the right sort of a way. Conservative marketing, intelligent distribution and energetic salesmanship should be the watchwords. Everyone should work for the closest harmony between the fruit grower, the association or distributing concern, the dealer and the retailer, all aiming to co-ordinate their efforts in such a way as to serve the consumer in the most satisfactory manner at reasonable prices. By such methods the consuming capacity of the United States can be immensely increased, and with the proper increase a reasonably good demand can be looked for which will mean fairly satisfactory prices with a reasonable

profit for everyone engaged in the business.

Do not be discouraged by the large estimates that are being reported. On the other hand, do not fool yourselves by under-estimating the quantity. Assume that there is going to be a good sized crop and make proper arrangements for selling in every section of the United States, so that the crop will be wisely and well distributed. See that the quality is first class in every respect, the price reasonable and the consumer pleased. By such methods, the 1914 crop can and will be handled at prices which will pay a fair profit for everybody connected with the apple industry.

Export Trade.—The export trade of apples from the United States is about ten per cent. At the present time there is much uncertainty about the quantity that will be exported. By proper methods of salesmanship, distribution and advertising this country can be easily made to consume ten per cent extra and make up for the loss of trade in the export business.

Essentials of Bread-Making

"Good bread can be made from either good hard wheat flour or from good soft wheat flour," says Dean Henrietta Calvin of the Oregon Agricultural College, "but you should know which you are using, because they require different treatment. Hard wheat flour may be made into a soft dough, and if it is very hard wheat then the bread should be kneaded down several times. Soft wheat flour should be made into a very stiff dough and the bread will not need to rise more than once before it is put into the pans. Home-made yeast is much better than the dry yeast. It can be likened to the seed saved by a good gardener from his own healthy plants. When properly prepared it contains millions of live, growing, microscopic plants. Liquid yeast can be kept in a cool, dark place about two weeks. Sweet milk is the best of all liquids for bread-making. It should be scalded and then cooled. The micro-organisms that cause sourness in milk are thus heated until they all die. Milk bread will be a little yellow, but its flavor is better and it is more nutritious than water bread. Water may be used instead of milk, however, and good bread can be made with it. Sugar is a good yeast food. A little added to the bread does not affect the flavor of the bread, but does quicken the action of the yeast. Salt is used for flavor. Such a small quantity as is used in bread does not materially retard the growth of yeast, but does whiten the bread. Bread while rising must not be kept too warm. More bread is spoiled by too much heat than too little. Bread that feels warm to the hand is too warm. The bacteria which causes sourness, and which are to the bread baker what weeds are to the gardener, grow rapidly in the dough if it is quite warm."

Buy A Good Ladder

IT COSTS BUT
LITTLE MORE.

The Mitchell Ladder

WILL OUTLAST TWO
ORDINARY LADDERS

Every step is metal reinforced with galvanized pressed steel — riveted, not bolted.

The head and tripod are heavily reinforced and will not break down.

Write us for
Circular and Prices

Implements, Water Systems,
Pumps, Engines, Etc.
for the Fruit Grower

Mitchell's
LEWIS & STOVERS

Portland
Spokane
Boise



Mitchell's
TRIPOD
FRUIT GROWERS
LADDER

Prevent Winter Injury of Fruit Trees

There has been a good deal of winter injury and winter kill of fruit trees in the Northwest this past winter. In some cases the trunks of the trees were the parts that suffered and in others the twigs and small branches were the only parts of the plants injured. The winter was not extremely cold, but there was some warm weather followed by colder, and the harm seemed to be the result in many cases of fluctuating temperature. The trees that were growing in sod or in permanent cover crops or even weeds and grass did not suffer as much as the best clean-cultivated and irrigated orchards. There are orchards in several districts that show exceptions to this general statement, but they are rare and usually show some other condition out of the ordinary in their surrounding conditions, or in culture and treatment. In sections where fall rains start before hard killing frosts have stopped the growth, winter killing has been common in some orchards before a system of cover cropping was

established. Annual cover crops that make a good growth in the fall are usually helpful in preventing winter injury in regions where there is plenty of rain or snow fall in the winter. For the best results the annual cover crops should be planted not later than the middle of August. The permanent cover crops of clover or alfalfa should be planted earlier in most localities. For the annual cover crop, rye, winter wheat or field peas are best. Winter vetch is a splendid crop to use of the seed can be secured. In many ways it is the best of all the annual crops.—O. M. Morris, Horticulturist, Washington Agricultural Experiment Station.

ORCHARD

Wanted. Situation as manager of new or young commercial orchards. The very best references. Over 25 years among orchards and fruit trees. 6 years in irrigation district. 3,800 acres of orchards prove my work. Specialty — Preparing land, cultivation, banding of men and teams, planting, tree diseases, etc. "J. M." care "Better Fruit."

Marketing Machinery of the North Paci



N. C. RICHARDS
General Counsel.



F. E. SICKLES
Member Executive Committee
Trustee from Yakima Valley
Fruit Growers' Association.



D. W. RODERICK
Member Executive Committee
Trustee from Wenatchee-North
Central Fruit Distributors.



W. N. YOST
Vice-President and member
Executive Committee, Trustee
from Idaho-Oregon Fruit
Growers' Association.



H. F. DAVIDSON
President, Trustee from Apple
Growers' Association of Hood
River, Oregon.

Drying of Apples An Ancient Custom

By D. A. Snyder, Dayton, Oregon

THIS subject does not appear to be of much importance. So we thought at first, but the more we study the subject the more important it appears. From the earliest time, the preservation of fruit in the "Harvest Season," to be consumed during the dormant season or time of failure, has been one of the problems of man. The savage used the bark of trees and flat stones on which to spread his berries

and fruit, to be exposed to the sun until dried. Our forefathers in this country spread the fruit on racks or cloths, which were placed on a roof or on the ground to be dried in the sun, or in many instances racks were hung over the cook stove in the kitchen and the fruit spread on them and dried.

In some parts of Europe it is still customary to string quartered apples on strings and hang them from the

ceiling over the stove, where like other primitive methods, 'midst dust and flies, they will eventually dry and will keep, to be used when wanted. We frequently find people who say they prefer apples dried under such a process to those cured in a modern evaporator. They are certainly like the lady who had always lived in the city and went to the country to spend the summer, only remaining a few days, giving as her reason that she could not eat the country food. Among other things with which she found fault was the butter—it had no taste; and the milk was so poor that, if it stood over night, a yellow scum would come to the top of it, and she did not think it was fit for food.

We have three ways or methods of curing apples—drying, evaporating and dehydrating. It would be difficult to distinguish between the definitions of the terms given in the dictionary; still they are not the same in meaning, and there is still greater difference in the methods pursued in curing the fruit. Dried apples, in the common acceptance of the term, applies to apples cured after the primitive methods just described, or in dry-houses, so-called. When a small lad, my father had a dry-house on his farm in Ohio, and it was my duty to pick up apples in the orchard, wheel them in in the wheelbarrow and pare them with a small parer (used at that time), quarter and core ready for the dry-house—thus getting my first lessons in the fruit business, which has since become my life work. This dry-house was a small building about 10 by 12 feet, built perfectly tight, so as to hold all the heat. A box stove was placed in the center of the building, with wooden racks arranged around the sides and ends of the room, and over the top of the stove. On these racks were placed the quartered apples. The room was heated to the highest possible degree and the apples, in spite of their bleeding and sweating, would in time get dry. Many of the dry-houses were made of logs, and we have been told that from one

Barnett's Patent Fruit Picking Pail

Price \$1.50
Delivered

The careful handling of all fruit, as every orchardist knows, is a very essential detail of successful marketing. By the use of this pail a saving of 25 per cent of bruised fruit, also 25 per cent in time, is saved over the old way. The pail is made of heavy galvanized iron and lined with a substantial grade of canvas, which extends below the bottom of the pail and is closed by tightening a draw string, fastened to the outside of the pail; when the pail is filled with fruit and ready to empty, the cord is simply loosened and the fruit deposited in the box without a bruise or a jar, and much more gently than could be done by any other method.



This bucket has been recognized instantly by the leading and successful packers of fruit as the perfect picking pail, and no orchardist, however small his orchard, can afford to be without it.

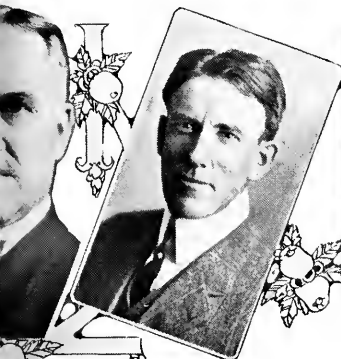
If your dealer does not carry this pail, write direct to us and we will fill your order through him or direct by Parcel Post or Express as you desire.

Storey Manufacturing Co.

1538-1540-1542 MACADAM STREET

PORTLAND, OREGON

Fruit Distributors Officers and Directors



H. C. SAMPSON
Secretary-Treasurer, Trustee
from Spokane Fruit Growers'
Company.



HARRY HUBER
Trustee from Walla Walla
District Fruit Distributors.



F. M. SLAGLE
Trustee from Central Idaho-
Washington Fruit Growers'
Association.



WARD M. SACKETT
Trustee from Montana Fruit
Distributors.



C. A. PARK
Trustee from Western Oregon
Fruit Distributors.

of these log houses was discovered the theory of the modern evaporator. The chinking between the lower logs had fallen out, and the roof being made of shakes, a circulation of heated air resulted. The owner noticed that his apples were drying faster and much nicer than they did before, and thinking that the draft might be the cause, increased the size of the holes, which caused still better results. Thus was born the idea of evaporating with a hot-air circulation.

By evaporated apples we mean apples cured in an evaporator, by means of warm dry air passing rapidly between and through the pieces of apples and carrying off the moisture, leaving the fruit dry. There are a great many styles and makes of evaporators, but we think they can all be classed under four general types. We will not endeavor to describe all the types, as it would take too much time, but will mention each and try to describe two which our experience teaches us are best. As our subject is drying apples, we will not discuss the evaporators which are best calculated for the evaporation of prunes and berries, but only as to the adaptation to evaporating apples.

The evaporator which is perhaps being used most extensively for evaporating apples, is the hop-kiln type evaporator. This is built similar to a double hop kiln, with a room adjoining in which the apples are pared and bleached. The drying floor is about 10 or 12 feet from the ground and made of slats or strips, closely laid, so as to allow the hot air to pass through the fruit above, but not let the pieces of apples fall through. The furnace or stove is placed on the ground under the floor. It is ventilated by doors underneath, and a ventilating tower in the center above each kiln, which causes a strong current of hot air to pass through the fruit, carrying off the moisture. The apples are pared and cored by machines, after which they are trimmed, the trimmer cutting out

all the bad places and removing such pieces of peeling as the machine fails to remove. The apples are then bleached whole and run through a slicing machine, after which they are spread on the kiln floor several inches deep to evaporate. It is necessary to turn the fruit while curing. This undoubtedly is the cheapest method of evaporating apples, and with the latest improved machinery it is possible to operate with a very small outlay of labor. An evaporator of this type can be so constructed that apples can be dumped from the wagon into a hopper and by means of conveyors conveyed

to the parer by automatic machines, then via conveyor to bleacher, from there to the slicer, then to the kiln floor. The only handling necessary being the trimming, which can be done by trimmers, watching the apples as they pass on the conveyor, picking up and trimming such as may need it, and the remainder passing on untouched. The drawback to this type of evaporator is that it can only be used successfully in evaporating apples. And the quality of the product, while nice looking, is not quite up to some others, owing to the fact that it is so long from the time the apple is pared and sliced

FENCE DIRECT TO THE CONSUMER

American Steel & Wire Company's Products

HEIGHT BETWEEN RAILS IN FEET	NO. OF RAILS PER FOOT	NO. OF RAILS PER ROD	NO. OF RODS PER FOOT	NO. OF RODS PER 100 FEET
5	21	56	100	100
5	20	53	100	100
4 1/2	19	49	100	100
4 1/2	18	43	100	100
4	16	35	100	100
4	-	-	-	-
3 1/2	13	24	100	100
3	-	-	-	-
2 1/2	-	-	-	-
2	-	-	-	-

Do you want a good farm fence at a low price? We have a new light weight field fence made of high grade galvanized wire. We can save you money on all kinds of fencing. Write us for descriptive matter and prices.

National Fence Company
181 Columbia St., Portland, Oregon

We Contract to Erect Fence

Wanted?

If you want a connection with **Practical Distributors** and **Marketers** whose experience covers the entire producing period of the Pacific slope, and who are

Specialists in the Products of Washington and Oregon

Make your wants known to

G. M. H. WAGNER & SONS
123 W. So. Water Street, CHICAGO

EFFICIENCY

An organization along broad and liberal lines for a nation wide, safe and sane distribution of Tree and Vine Fruits. Our services are available through our associate members to any and all growers and shippers of fruit.

MEMBERS

Geo. H. Anderson	Newcastle Fruit Co.	Producers Fruit Co.
A. Block Fruit Co.	Penryn Fruit Co.	Schnabel Bros. Co.
Earl Fruit Co.	F. B. McKeivitt Co.	Silva & Bergtholdt Co.
Geo. D. Kellogg & Son	Pioneer Fruit Co.	Vacaville Fruit Co.

California Fruit Distributors

CHAS. E. VIRDEN, General Manager
SACRAMENTO, CALIFORNIA

before it is sealed over that it bleeds badly, thus losing much of the flavor of the apple and will not have as white nor as nice an appearance when cooked.

The type of evaporator we like best, and the kind we are using, is constructed in such a way that the cold air is admitted at the bottom and passes through past the furnace and hot pipes, becoming thoroughly heated and dried, so that nothing but dry air reaches the fruit. The fruit is spread on trays placed in the kiln in a slanting position, so as to permit the dry air to pass through between them, both over and under the fruit, thus absorbing and carrying off the moisture without causing the moisture from one tray to pass through the fruit in the other trays. This causes the slices of apple to seal over quickly and stops the bleeding, thus retaining all of the natural flavor. To pare our apples we use the Rival apple parer, fitted with the slicing attachment. This machine pares, cores and slices the apple and delivers it into an incline shoot, which carries it to the trimmer and spreader, who trims out all bad parts and spreads the apples onto the trays. The tray is then put into the bleacher, after which it is placed into the evaporator and remains there until it is fully cured. The disadvantages of this type of evaporator are that it requires more labor to operate than the hop-kiln type, and it costs a great deal more to construct. The advantages are: It is a general evaporator,—in it we evaporate every kind of fruit and vegetable, also eggs. The quality of the product is superior to that produced by any other type so far as we have seen. The other two types of apple evaporators are the so-called stack evaporator type and the like-fresh type. Both are good and by some thought best of all, but we prefer the other two types.

There are a number of large evaporators which operate on apples in this state. We have two in Yamhill County, one at Amity and our own at Dayton. Besides these, there are a number of small evaporators in different parts of the county. The output of our evaporator this season will be about 120,000 pounds of evaporated apples, equal to about 25,000 boxes, or 31 cars of fresh apples. We do not know the capacity of other evaporators nor the amount of the annual production in this state, but New York State produced 2,000 carloads of evaporated apples in 1912. This was equal to 20,000 cars of fresh apples; as California, Missouri, Arkansas, Michigan and Pennsylvania are all large producers of evaporated apples and will not fall far behind New York, we believe it is safe to say that not less than 10,000 cars of evaporated apples, equal to 100,000 cars of fresh apples, were produced in the United States in 1912. As very few apples, other than culls, which would otherwise go to waste, get to the evaporator, we can readily see what an important place in a community is filled by the evaporator. Another feature is

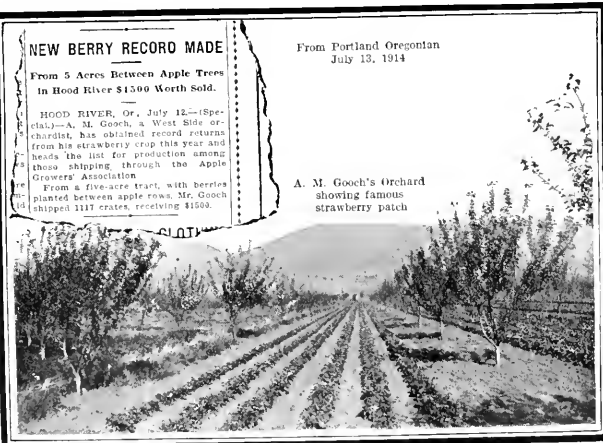
NEW BERRY RECORD MADE

From 5 Acres Between Apple Trees
in Hood River \$1500 Worth Sold.

HOOD RIVER, Or., July 12.—(Special.)—A. M. Gooch, a West Side orchardist, has obtained record returns from his strawberry crop this year and heads the list for production among those shipping through the Apple Growers' Association.
From a five-acre tract, with berries planted between apple rows, Mr. Gooch shipped 1147 crates, receiving \$1500.

From Portland Oregonian
July 13, 1914

A. M. Gooch's Orchard
showing famous
strawberry patch



Rich in high grade organic nitrogen BEAVER BRAND ANIMAL FERTILIZERS "A Fertilizer for Every Crop"

Supplies your land with the constituent elements that makes fruit growing profitable. A. M. Gooch's success this year can be duplicated by YOU next year if you use this PROVEN fertilizer for fruit growers. Booklet Free.

PREPARED BY
UNION MEAT COMPANY
NORTH PORTLAND, OREGON

UNION MEAT COMPANY
NORTH PORTLAND, ORE.
GENTLEMEN:-

Would say I used your fertilizer on my strawberries
I think I realized fully fifty percent more berries
by its use. (Signed) A. M. Gooch

HOOD RIVER, OREGON
June 23, 1914

\$\$\$
 \$\$\$
 \$\$\$
 \$\$\$
 \$\$\$
 \$\$\$
 \$\$\$
 \$\$\$
 \$\$\$
 \$\$\$
 \$\$\$
 \$\$\$

The First Sure Profit to the Producer.

THE COMMERCIAL (UNIT SYSTEM) FRUIT EVAPORATOR

NONE Just Like It. NONE "Just As Good."

By demonstration we prove its economical efficiency. This system will handle your second-grade (not up to standard) apples, etc., at a good profit. Plants installed in one or two units—5 and 10-ton capacity—for private use, or enlarged by additional units for commercial use, limited only by capacity of boiler. Will produce at Low Temperature a superior article of dried fruits at a low cost never before thought possible. It costs less to operate, **Saves Time, Labor and Fuel**, and is practically "fool proof." For information, address

Commercial Evaporator Company,

Bank and Commercial References. P. O. Box 222, Portland, Oregon

What They Say

"The Commercial 'Unit System' Evaporator installed for our company at Salem produces a superior article of dried fruits, and I consider this system the most efficient and practical evaporator now upon the market."
 (Signed) FRANK W. WATERS,
 President Salem Fruit Evaporating Co., Salem, Oregon.

"I have no hesitancy in saying that the dried fruits produced by the Commercial 'Unit System' Evaporator at West Salem are far superior to any I have ever examined, and the method employed is the most practical and sanitary one yet devised."
 (Signed) W. H. GRABENHORST,
 Salem, Oregon.

the labor employed. As it takes fifteen people six weeks to evaporate a car of apples, it would require at least 150,000 persons to put up the 10,000 cars.

In addition to the evaporated apples, there are the by-products of the evaporator to take into account. Some evaporators evaporate the peelings and cores which are used by large packers to make jellies, while others press the juice from them for vinegar purposes. At our evaporator we have made about 25,000 gallons of juice for vinegar this season, being about one gallon from the waste of each box of fresh apples evaporated. This reduces the cost of evaporated apples materially. The market for evaporated apples is limited. Of the 2,000 cars produced in New York in 1912, 600 cars were still on the market a short time ago. A large part of the evaporated apples put up in this country are consumed in Europe, the remainder is consumed mostly in our own large cities; in the Prairie States; in sheep, cattle,

mining and logging camps; in the fisheries and ship-stores, and a very small part going into the Southern Hemisphere and across the Pacific.

The consumption of evaporated apples is curtailed to a great extent by dishonest packing. Men running camps tell us that it is a common occurrence when buying a box of evaporated apples to find the top, bottom and sides of the box lined with nice white slices and the inside filled up with burned, unpeeled and wormy stuff, unfit for food. For this reason they prefer to use prunes and peaches or canned apples; while they cost more, they can eat them when they get them to the camp. Others use too much water in packing, thinking to gain a few pounds weight, and causing the whole box to ferment and spoil. We evaporators should see to it that our fruit is packed honestly and put on the market in proper shape. Then it might be well to try educating the public taste to consume it. Few people really know the value of evaporated apples as a food, or for that matter how to cook them. If properly cooked it is hard to discern the difference between stewed fresh apples and stewed evaporated apples. And if properly evaporated and baked, we defy anyone to discern the difference between a fresh or evaporated apple pie. A short time ago we shipped one hundred and fifty fifty-pound boxes of evaporated apples to a large pie baker. These will all be used in making pies and they will undoubtedly be sold as fresh-apple pies.

We hear a great deal of talk about the high cost of living, and feel it ourselves as well as others, but this could be lessened a great deal if people would only use the right judgment in what they eat. We stood in a grocery store in one of the Coast cities of Washington, one day in May, when a lady entered and purchased two dozen small, shriveled held-over apples, paying fifty cents for them. The grocer told me she was the wife of a sawmill employe. This set us to thinking and wondering what she could do in the way of furnishing her table with food with those apples. We concluded that she might make two, possibly three pies, and have an apple each for the family to eat for dessert. She could have purchased

from the same grocer our own pack of evaporated apples, for the same money (fifty cents), enough evaporated apples to equal a whole box of good, fresh apples, which would have furnished her family with pies, puddings and apple sauce, all they could eat for weeks.

A great many people are asking the question, what are we going to do with our apples when the new orchards all come into bearing? Don't smile; it is not a foolish question, and more people are worried over this question than are willing to admit it. In times past attempts have been made to have laws passed which, if rigorously enforced, would freeze out the small orchards, hoping by that means to curtail the supply on the market. Other places resort to the expediency of having inspectors condemn everything coming to their market from neighboring states, and passing freely the home grown. Shame on such expedients. Retribution is in store for them. If the price

FOR FALL SOWING
 "Diamond Quality"
 TESTED

**CLOVERS—ALFALFA
 VETCHES—GRAINS
 GRASSES and FIELD
 SEEDS**

MIXTURES for DRY LAND—
 WET LAND—BURNS—Permanent
 HAY CROPS and PASTURES—
 COVER CROPS for ORCHARDS

WRITE FOR SAMPLES
 and Prices or Send in Your
 Order—You will Receive
 Prompt Service and Full Value

ASK FOR CATALOG No. 200

PORTLAND SEED CO.
 Portland, Ore.

Agents "CLIPPER" Fanning Mills

Get The Hidden Treasure From Your Stump Land

Every stump on your farm takes up from 100 to 400 sq. ft. of rich ground that would be yielding bumper crops. Take out the stumps. New land often yields \$200 to \$300 profit the first year.

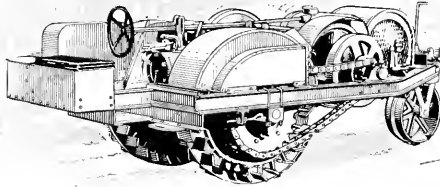
HERCULES All Steel Triple Power Stump Puller

Clears an acre a day. Make money clearing neighbors' farms. Sold on trial 30 days. Three years Guarantee. Special introductory price on immediate orders. **FREE! BRINGS BIG FREE CATALOG.**

HERCULES MFG. CO.
 169 22nd Street Centerville, Ia.

RUMELY

Power Farming Machinery



Coast Built For Coast Use

The ToeHold tractor is built on the coast to meet the requirements of coast farmers. It is especially designed for orchard and vineyard work, but will give a good account of itself at practically any power job.

Rumely ToeHold Tractor

It is low, narrow and light. It will plow close to trees and pass under limbs. All parts are protected from dirt and dust. An air clarifier keeps dirt out of carbureter.

The ToeHold drive-wheels are exclusive features. They do not pack the soil, but give flat backward pressure, enabling the ToeHold to deliver maximum power at the draw-bar.

Ask for ToeHold catalog F32. It gives complete information. The ToeHold is what you want for your larger power jobs, and the Rumely-Falk and the Rumely-Olds are good stationary engines for your smaller ones. The Rumely-Olds burns gasoline, and the Rumely-Falk stove-tops or kerosene. Every Rumely machine is backed by Rumely service—49 branches and 11,000 dealers. Supplies and parts without delay.

RUMELY LINES

Kerosene Tractors	Engine Gang Flows	Gasoline Engines	Cream Separators
Gasoline Tractors	Threshing Machines	Oil Engines	Corn Machines
Steam Engines	Clover Hullers	Baling Presses	Lighting Plants

RUMELY PRODUCTS COMPANY

Chicago

(Incorporated)

Illinois

O. E. SPOONER

Up-to-Date
Facilities
FOR
AUCTION
AND
Private Sale
DISTRIBUTION

Fruit and Produce Brokerage and Commission

94 South Market Street
1-3-5-7 Mercantile Street
BOSTON

Located on this corner since 1897
Direct Telegraph Wires All Codes



of apples was within the reach of all classes there would be no cause for anxiety, as they would all be eaten and more called for. But, says the grower, we cannot produce them cheaper. There are so many culls that the first-class apples cost us too much to produce. True, but if you could sell your culls and waste apples for seven or eight dollars per ton in bulk, the first-class apples would not cost so much.

This could be done if everyone could or thought they could afford to eat apples.

The evaporator could afford to pay you eight dollars per ton for your culls and sell the evaporated apples at a price which would admit of them being sold at retail in any city in the United States at a price that would be equal to not exceed seventy-five cents a box for fresh apples. Even the poorest could

have all the apple sauce they could eat if they only knew it, and would if they knew.

If every inhabitant of the United States would eat one pound of evaporated apples each year it would be equivalent to 18,000,000 boxes of fresh apples. Would not the best solution of the problem be: Pack only the best apples for the fresh-apple market and evaporate and can all of the off grades. In this way pests would not be spread, the grower could sell all of his apples and the poor could have apples to eat.

The East Has Faith in Apple Growing in the Northwest

From the Wenatchee Daily World we quote an interview with W. N. Mears, who in connection with other Boston associates is spending a million and a quarter dollars in producing apple orchards. The World quotes Mr. Mears briefly as follows:

"What do the Eastern people think of the apple industry at the present stage of the game? Well, I'll tell you what Boston people are doing in this part of Washington and you can draw your own conclusions. A million and a quarter of dollars is being spent on three apple projects by Boston capitalists in North Central Washington, and this, mind you, without any hopes of financial returns on their money for years to come, or until the trees begin bearing. There is a project at Chelan backed by Boston capital, and one at Tonasket, besides ours here at Okanogan—and not an acre of land nor a share of stock is for sale. Personally I have greater faith in the future of the apple business now than at any other time since I entered the game, and I am more firmly convinced than ever that right here in the Okanogan Valley we can raise the best apple in the world."

New Plant Pathologist for Medford District

A specialist in plant pathology, Dr. M. P. Henderson, University of Wisconsin, has been appointed by the Oregon Agricultural College as pathologist and assistant county adviser of Jackson County, with headquarters at Medford. Under the heads of the county farm adviser law Jackson County maintains a county adviser co-operatively with the extension division of the college. This office is filled by Professor F. C. Reimer, superintendent of the Southern Oregon Experiment Station at Talent.

The new arrangement was secured through co-operation between the Experiment Station, the branch station and the extension division on the one hand and the County Court of Jackson County on the other. It goes far to assure close co-operation in carrying on the work.

The newly-appointed pathologist is a graduate of the Utah University and took his doctor's degree in plant pathology at the University of Wisconsin last June. He is a native of Idaho and has had extended experience in orchard work under Western conditions.

COYNE BROTHERS

CHICAGO

Distributors High Grade Box Apples

We have the cream of the finest orchards in the Wenatchee Valley under contract, consisting mainly of Winesaps and Jonathans.

We are short on High Grade Spitzenbergs. If you have not disposed of this variety, get in touch at once, learn our method—absolutely safe for the grower. Write or wire us or address

G. B. LANHAM, Pacific Coast Representative, Wenatchee, Wash.

Dried Fruits—"By-Products in the Northwest"

By W. J. Patterson, Portland, Oregon

It has been said by one of the wise men of somewhere that the principal difference between a rut and a grave is that the former is longer than the latter and more difficult to get out of. Five years ago one of the large manufacturing industries in Illinois was being run at a profit of less than three per cent on the invested capital. The output had a ready sale, there were few unexpected losses and the management was careful and economical, but despite all of this the profits hardly warranted the continuance of the business. One day a suggestion was made toward the utilization of by-products, which resulted in such profitable use of material and time, formerly wasted, that last year the company paid a dividend of 13 per cent and the output from their by-products departments far exceeds that of their original business.

This firm got out of its "rut." Coming nearer home, it is stated on reliable authority that in three of the principal fruit districts of our Pacific Northwest last year there was a total loss of over 20,000 tons of good, sound, healthy apples, besides the large amount virtually donated to cider mills by growers. This fruit, while not up to the high standard required for fancy-box purposes, was perfectly suited for dry curing by any modern low temperature evaporating process and would have resulted in over 12,000,000 pounds of dried fruit readily worth approximately \$1,200,000.

To those growers whose efforts are toward the permanent and profitable establishment of the fruit industry in the Pacific Northwest, this loss must appear little less than criminal. Its realization must bring to them a determination to find a remedy. The day of broadest selling of "orchard tracts" is passing, if not altogether gone, and the intelligent owner is earnestly looking for actual profits from his holdings. It has been demonstrated to the satisfaction of most intelligent growers that the raising of fancy fruits without a market for seconds and other grades is figuring far too closely to make the industry an enticing or profitable one.

What is the remedy? By-products, the salvation of many an American industry. By "by-products" is meant that portion of the grower's output which heretofore has gone to waste and which in future must be made to yield a revenue. There is a constantly increasing demand for dried fruits, particularly apples, and for this product the Pacific Northwest has no competitor in the field. The apple grown in the warmer and more southerly states is insipid, compared to ours, and by a modern, low temperature evaporation process, or the withdrawal from the fruit of simply the tasteless, colorless moisture, leaving intact all of its tone, flavor and original color, we would have no worthy competitor in either home or foreign markets. It might be well, while speaking of foreign markets, to look more closely at conditions as they exist abroad, or, in

other words, "In time of war prepare for peace." By anticipating the probability of the destruction of many thousands of orchards and vineyards throughout Europe, which it will require years of time to restore, this unquestionably will increase the already enormous demand abroad for dried fruits and give us an opportunity to establish a permanent market. Action along this line cannot be taken too soon. It seems rather remarkable that with so many advances along other lines, the matter of the dry curing of fruits has virtually stood still for the past twenty years, and that it has only



Mills College

Suburbs of Oakland, California

The only Woman's College on the Pacific Coast. Chartered 1885. Near two great universities. Ideal education throughout the year. Entrance and graduation requirements equivalent to those of Stanford University and University of California. Laboratories for science with modern equipment. Excellent opportunities for home economy, library study, music and art. Modern gymnasium. Special care for health of students; out-door life. Christian influences; undenominational.

For catalogue address Registrar, Mills College P. O., California.

The Campaign

Bishop Scott School for Boys Yamhill, Oregon

Under auspices Episcopal Diocese of Oregon. Fall term starts September 28, 1914. Grammar school and college preparatory courses. Competent instruction in all branches. Send for booklet "Where Boys are Trained to Think." Address Bishop Scott School, Yamhill, Oregon

St. Helens Hall

PORTLAND, OREGON

Resident and Day School for Girls

In charge of Sisters of St. John Baptist (Episcopal) Collegiate, Academic and Elementary Departments, Music, Art, Elocution, Domestic Art, Domestic Science, Gymnasium. For catalog address—

THE SISTER SUPERIOR, St. Helens Hall

HILL MILITARY ACADEMY

A Select Non-Sectarian Boarding and Day School for Boys. Military Discipline; Small Classes; Men Teachers. Careful supervision secures results that are not attained elsewhere. Send for catalog.

PORTLAND, OREGON

THE LIFE CAREER

"Schooling in youth should invariably be directed to prepare a person in the best way for the best permanent occupation for which he is capable."—President C. W. Eliot.

This is the Mission of the

OREGON AGRICULTURAL COLLEGE

Forty-sixth School Year Opens

SEPTEMBER 18th, 1914

Write for illustrated 100-page Booklet, "THE LIFE CAREER," and for Catalog containing full information.

Degree Courses—AGRICULTURE: Agronomy, Animal Husbandry, Dairy Husbandry, Poultry Husbandry, Horticulture, Agriculture for Teachers. FORESTRY, LOGGING ENGINEERING. HOME ECONOMICS: Domestic Science, Domestic Art, ENGINEERING: Electrical, Irrigation, Highway, Mechanical, Chemical, Mining, Ceramics. COMMERCE. PHARMACY. INDUSTRIAL ARTS.

Vocational Courses—Agriculture, Dairying, Home Makers' Course, Industrial Arts, Forestry, Business Short Course.

School of Music—Piano, String, Band, Voice Culture.

Farmers Business Course by Mail Free

Address THE REGISTRAR,

(Lw 7-15 to 9-9) Corvallis, Oregon

TRY TEN DAYS FREE

RUTHSTEIN'S LATEST TRIUMPH

ADJUSTABLE LEATHER TAPS

The only Light, Comfortable, Economical, Absolutely Waterproof GENERAL SERVICE SHOE for Men and Boys.

ONE PAIR OUTLASTS 3 to 6 PAIRS ALL-LEATHER. The only all-season, all-purpose shoe every invented. Warm in winter—Cool in summer—always dry, shapely and comfortable. The World's Greatest Workshoe—Play Shoe—School Shoe. No more hard, twisted, leaky shoes. No more **Big Shoe Bills**. No more corns, Rheumatism, coughs or colds. No more **Big Doctor Bills**. Learn today about the "Sold of Steel"—the instantly renewed leather taps—the shoe of the light, springy step that makes you safe, sure-footed and tireless, and how anyone can try my "Steel" Ten Days, FREE. Sizes for men 5 to 12, all heights—for boys 1 to 4.

Write a Postal for FREE BOOK.

Tells how to Save Your Feet—Your Health—Your Money. Write me today.



SAVE \$20 SHOE MONEY



N. M. RUTHSTEIN, Steel Shoe Man, Dept. 84, Racine, Wis.

WRITE ME!



Get my new, low, factory priced on the Famous Galloway Engines and big, illustrated FREE catalog. My engine is standard, big, heavy engine. Made in size from 1 3/4 to 15 H. P. Over 4,000 in use today. All sold on 30 days FREE trial, backed by five year guarantee and \$25,000 bond. Money back if not satisfied. Free trial! Get your engine at a price far inferior agents. Save millions of profit. Be your own dealer.

BUY DIRECT FROM THE MANUFACTURER and Save \$50 to \$300 on Gasoline Engines

Take some time to see how your money is being run any way you can think of. Write me before you buy.

My Service Department that will **FREE** help you select and install the best engine and also repair and overhaul for your work without cost to you. Let us send you my New 1918 Special Offer. Just write for my card and see how, low prices today!

Address Wm. Galloway, Pres., **WM. GALLOWAY CO.**
1055 Galloway Station, WATERLOO, IOWA



You gain a whole year

Fall Planting

Our AUTUMN CATALOG

READY IN SEPTEMBER
MAILED FREE ON REQUEST

True to Name
Fruit and Shade Trees
Berries and Bush Fruits
Roses
Bulbs and Plants

Bulbs
For earliest winter flowers indoors.

Paper White
Narcissus
Doz. 40c, \$1, \$2.50

Roman Hyacinths
Doz. 85c, \$1, \$5

China Lilies
Each 15c, Doz. \$1.50
POST PAID

Grow in pots or glasses
They are sure to bloom

Standard varieties and worthy novelties for home and commercial plantings

ASK FOR CATALOG No. 201

Portland Seed Company

PORTLAND, OREGON TRADE MARK



been in the last two seasons that a successful attempt has been made to modernize the methods and replace the old-time sulphured, sun-dried and direct-heat process by something more nearly scientific and up to date.

While market conditions are rather abnormal in the dried fruit industry, it is a fact proven by actual experiment by the writer that the problem can be worked out to great benefit and profit to growers in any district where there is an abundance of fruit by either the building of a large commercial evaporating plant in a central district or by large growers building their own plants. This would insure growers about \$16.00 to \$20.00 per ton for apples which are now going to waste and permit of a first-grade article being produced at under five cents per dried pound, or at present wholesale price would pay growers (operating their own plants) about \$35.00 per ton for their second-grade apples.

It would seem as if the remedy for the present difficulty is modern low temperature evaporation of second-grade apples—by-products—which will insure the growers an increasing profit, and this suggestion in a great measure applies to other fruits—prunes, pears, peaches, berries, potatoes, etc. The United States government is using millions of pounds of dried fruits annually and a "taboo" is now placed (in most markets) upon sulphured apples and lye-dipped prunes, very properly so, as neither is necessary if product is taken care of in a proper, sanitary manner.

Book Reviews

"The Home Vegetable Garden," by Adolph Kruhm, published by Orange Judd Company of New York, is a very instructive and valuable book for the fruit grower or any class of farmer who believes, as every farmer ought to, in having a good vegetable garden.

"Productive Orcharding," by Professor F. C. Sears, M. S., professor of pomology of the Massachusetts Agricultural College, is a new book on practical orcharding which has just been published by J. B. Lippincott Company, Philadelphia. The book deals with orcharding from the beginning to the end, including sites, varieties, culture of orchards, cover crops, pruning, pests, diseases, spraying, harvesting, etc. In fact, every feature of the industry is treated in a very interesting and instructive way, making the book very valuable for anyone engaged in the fruit growing industry.

"The Year Book for 1913," issued by the Government Printing Office, Washington, D. C., is just off the press. The Year Book is always full of valuable information. A few of the important chapters of this edition are on very important subjects, some of especial interest to the fruit grower, as follows: "Bringing Applied Entomology to the Farmer," "Factors of Efficiency in

Make sure of a visit to the

Washington State Fair

"The Show Window of the State"
September 21st to 26th, Inclusive
BIGGER AND BETTER THAN EVER.
A COMPLETE EXHIBITION OF THE STATE'S RESOURCES.
FAST HARNESS AND RUNNING RACES.

Take the time for an outing, bring the family and see what a wonderful state produces. Special rates on all railroads. Ample street cars to grounds. For further particulars address

J. E. SHANNON, Secretary
North Yakima, Washington

The J. B. Holt Fruit Picking Sack

(Patented)

I invented this picking sack and have used it in my orchard, handling from five to ten thousand boxes, during the last four years. I am convinced it is the most practical and convenient picking receptacle on the market. It does not bruise the apples. It is not in the way of the picker, like a bucket. The picker can reach the highest limbs without inconvenience. It empties into the bucket slowly and carefully, without bruising. It has wide shoulder straps like suspenders, and does not have to be hung on the limb with a hook.

You can buy these of
OSCAR HILL, North Yakima, Washington.
C. H. ROSS, Wenatchee, Washington.
S. B. SIMONTON (address Hood River, Oregon), Hood River, Mosier, White Salmon and Underwood.

New agent's names will appear in September issue of "Better Fruit."

Price 10c. H. Pullman, Washington, \$1.75. Special prices quoted on large quantities.

For further particulars and illustrated descriptive literature, write

J. B. HOLT
PULLMAN, WASHINGTON

Apple Boxes

Growers who have not placed their orders are **now** liable to require

Rush Shipments

The product of a dozen mills is at the service of our customers. We can **SHIP QUICK**.

All Western Soft Pine

Write us at once, and let us get your order on file, so you can wire to Rush Shipment when you know just what you will need.

Western Pine Box Sales Co.

614-615 Empire State Building
SPOKANE, WASH.

Mention "Better Fruit"

HOOD RIVER APPLE VINEGAR CO.

HOOD RIVER
YELLOW NEWTON VINEGAR AND SWEET CIDER
Made from Choice Hood River Apples

If your jobber cannot supply you send your order to

Hood River Apple Vinegar Co.

100 Front Street, Portland, Oregon
or their Factory at Hood River, Oregon

OUR SPECIALTIES

BOX APPLES and the **PEACHES**
 three big **P** **PEARS**
RUNES

We handle more box apples than any concern in Ohio and want to hear from every grower and shipper who will have either large or small lots to offer. Let us hear from you at once.

I. N. PRICE & CO., CINCINNATI, OHIO

REFERENCES: ANY BANK OR CREDIT AGENCY

The
“Greater Oregon”

With new buildings, better equipment, enlarged grounds, and many additions to its faculty, the University of Oregon will begin its thirty-ninth year Tuesday, September 15.

Special training for Business, Journalism, Law, Medicine, Teaching, Library Work, Music, Architecture, Physical Training and Fine Arts.

Largest and strongest departments of Liberal Education.

Library of more than 50,000 volumes, two splendid gymnasiums, eleven buildings fully equipped. New \$100,000 Administration Building in course of construction.

Tuition Free. Dormitories for men and for women. Expenses lowest.

Write for Catalog and Illustrated booklet, Addressing Registrar.

University of Oregon
 Eugene, Oregon

FOR SALE

Apple Evaporating Machinery at half price. Used one season.

Capps Nursery, Prosser, Wash.

6%—MONEY—6%

Loans may be obtained for any purpose on acceptable Real Estate security; liberal privileges; correspondence solicited.

A. C. Agency Company
 767 Gas Electric Bldg. 440 Phelan Bldg.
 Denver, Colo. San Francisco

Established 1893

W. P. KRANER & CO.
 Importers and Tailors
 2nd Floor Couch Bldg.
 109 Fourth Street
 Portland, Ore.
 GEO. E. KRAMER — C. W. STOSE

Farming,” “Promising New Fruits,” “Health Laws,” “What the Department of Agriculture Is Doing for the Housekeeper,” “Tree Surgery,” “Supplementing Our Meat Supply with Fish,” “Economic Waste from Soil Erosion,” “Organization of Rural Interests,” etc., including some valuable statistics in reference to various crops produced in the United States.

“The Management and Feeding of Sheep,” by Thomas Shaw, published by the Orange Judd Company, New York, is a new publication just off the press. This publication is very thorough, comprehensive, and a very valuable one to everyone engaged in the sheep business. It is with some pleasure that we call the attention of fruit growers to this book, for the reason that fruit growers to a great extent are going in for diversity farming. They are finding that cover crops in the orchard improve the condition of the orchard and the yield, and in addition afford feed for sheep, hogs or cattle, bringing additional income at various seasons of the year. The author was at one time professor of animal husbandry at the University of Minnesota, and is regarded as a very high authority on the animal industry, having written a number of books on various titles—“The Study of Breeds,” “Animal Breeding,” “Feeding Farm Animals,” “Management and Feeding of Cattle,” “Soiling Crops and the Silo” and “Dry Land Farming.”

“California Fruits and How to Grow Them,” by Edward J. Wickson, professor of horticulture in the College of Agriculture at the University of California, has been fully revised. The fact that the seventh edition has been issued is sufficient evidence to indicate the popularity of this work. It is a practical treatise on the growing of all kinds of fruits which are grown in the State of California, and contains much valuable information for any orchardist, no matter where he may be located. The University of California, through the experiment station and agricultural college, has been a big factor in building up the farming industry of the state, and particularly the orchard industry, and, by the way, the orchard industry of the State of California is

J. & H. Goodwin, Ltd.
APPLE IMPORTERS

Commercial Sale Room, Deansgate, Manchester, England.
 Floral Street, Covent Garden Market, London, England.
 Fruit Exchange, Victoria Street, Liverpool, England.
 Humber Dock Street, Hull, England.

AMERICAN ADDRESSES:
 97 Warren Street, New York, N. Y.
 Yonges Hotel, Boston, Mass.

Consignments and Correspondence Solicited

Wanted Position

As foreman or superintendent, by an expert fruit grower and packer. Also familiar with vegetable, stock and other farm crops. College and practical training. Distance no objection. References. Address S. care “Better Fruit.”

Wanted Position as manager or foreman on fruit ranch; 27 years' experience hard and soft fruits and cut nuts. Used to handling labor. Twelve years manager of fruit orchard and six years teaching practical fruit growing, pruning, grafting, etc., at high class college. Excellent references. Aged 40. Address J. G. care “Better Fruit.”



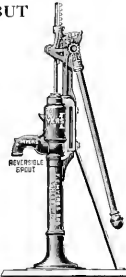
“FRIEND” QUEEN

Here's the sprayer! Sales have doubled on it this year. We have many other models. Place your orders with the California Spray Chemical Co. of Watsonville, California. We stand back of them. DON'T WAIT! DO IT NOW.

“Friend” Mfg. Co.
 Gasport, N. Y.

WATERING STOCK
IS A HARD JOB WITH MOST
PUMPS BUT

MYERS
STOCK PUMPS
are the exception
to this rule.



They are used to pump water in large quantities. Their waterways are free and unrestricted and the air chamber is of sufficient size to cause the pumps to throw a full even stream furnished by the extra large cylinders with which the different styles are fitted.

Every Inch a Stockman's Pump
For Farm and Stock use; also adapted for public wells located in towns and villages where water is required in large quantities.

They can be operated by hand, windmill or pumping jacks—different styles include force or lift pumps with plain or extra easy operating "Cog Gear" Handle. Write us about them and also many other styles of MYERS PUMPS.

F. E. Myers & Bro.
120 Orange St. ASHLAND, OHIO

Well Pumps,
House and Cistern Pumps,
Power Pumps, Etc.

Fruit Boxes

OF ALL KINDS

APPLE BOXES

OUR SPECIALTY

Bridal Veil Lumbering Co.
Hood River, Oregon



Main 8582 - A 2695

Vacuum Cleaners
DUNTLEY AND OTHERS

Electric and hand power. The only Exclusive Vacuum Cleaner Store in the state. If we haven't what you want, we will get it for you. All machines fully guaranteed. Other machines taken in exchange.

W. L. BENTLEY & CO.
No. 473 1/2 Washington St.
Portland, Oregon

the greatest industry of that state, the value of the fruit crop being more in dollars than any other output of the state. It is with pleasure that we commend this book to the fruit growers. Part I contains six chapters on general features. Part II contains nine chapters on cultural methods. Part III has several chapters on varieties of fruits, like apples, apricots, cherries, peaches, nectarines, pears, prunes, plums, grapes, quinces, etc. Part V deals with semitropical fruits, like the fig, olive, grapefruit, orange and lemon. Part VI is on small fruits. Part VII is on nuts. Part VIII is on canning and preserving of fruit. Part IX is on fruit protection against insects, diseases, etc. Part X deals with utilization of fruit waste. The book is published by the Pacific Rural Press, San Francisco.

From Far-Away Australia

Clyde Sampson, son of E. E. Sampson, recently returned from Australia, where he was engaged for two years instructing orchardists in the most improved ways of growing, harvesting, packing and selling fruit. He assisted in organizing the Australia Co-operative Exporting and Distributing Company, with head office at Melbourne and branches throughout the different fruit sections. Mr. Sampson states that growers over there have met with disappointments in co-operation in the past similar to the disappointments experienced in the Northwest. He states that the trouble has been largely due to the co-operation being started by theorists, but that now co-operation is getting on the right basis and that the co-operative concern for whom he has been working is rapidly increasing their business. It costs the Australian fruitgrower about twenty-five or thirty cents per bushel to harvest his crop. Apples are packed in what they call "cases," holding a bushel, and being 8 3/4 inches high, 14 1/4 inches wide and 18 inches long. The four sides are rigid and the apples are packed without any bulge. They formerly used excelsior, but Mr. Sampson showed them the diagonal pack, which enables them to pack the apples firmly and do away with the excelsior.

List of Fairs, Apple Shows and Expositions for 1914

- Vancouver, B. C., September 3-12.
- Vancouver, Wash., September 7-12.
- Interstate Fair, Spokane, Washington, September 12-20.
- Walla Walla Fair, September 14-19.
- Frontier Days, Walla Walla, September 17-19.
- Olympia Peninsula Fair, Port Townsend, September 12-20.
- Washington State Fair, North Yakima, September 21-27.
- Montana State Fair, Helena, September 21-27.
- Victoria, B. C., September 21-27.
- Neelson, B. C., September 21-26.
- Oregon State Fair, Salem, September 28-October 3.
- New Westminster, B. C., September 28-October 5.
- Utah State Fair, Salt Lake, October 5-12.
- Fifth Annual Apple Show, San Francisco, October 1-11.
- Manufacturers' Land and Product Show, Portland, October 26-November 14.
- Sixth National Apple Show, Spokane, Washington, November 16-21.



BEST GRADE

GRASS AND CLOVER SEEDS

99 PER CENT PURE

FOR FALL SOWING

THE CHAS. H. LILLY COMPANY, SEATTLE

True-to-Name Nursery

GALLIGAN BROS.
Proprietors

Hood River-Dufur, Oregon

Wholesale and Retail General Line of Nursery Stock. Seventeen years in the business. For catalogue and prices write

True-to-Name Nursery

Hood River, Oregon

Orchardist Supply House

Franz Hardware Co.

Hood River, Oregon

Established 1881 - Incorporated 1893

Page & Son

INCORPORATED

120 and 122 Front Street
Portland, Oregon

OLDEST ESTABLISHED

Commission Merchants

Wholesale Dealers in

Fruit and Produce

Phones—Main 8080; Home Phone A 2017

Vehicles and Agricultural Implements

THE BEST OF
ORCHARD AND GARDEN TOOLS
A SPECIALTY

Gilbert Implement Co.

HOOD RIVER, OREGON

Help Farmers by Agricultural Extension

In order to determine the efficiency of the different forms of agricultural extension education, surveys were made in four sections of the United States by which method 3,698 farmers in fourteen states were personally interviewed. Of these, about one farmer in every 1.5 visited takes a farm paper; one in 2.3 receives agricultural bulletins; one in 3.3 attends farmers' institutes; one in 6.5 belongs to some agricultural organization; one in 14.5 writes to agricultural institutions for advice; one in 23.8 has a few farm books; one in eleven gets personal instruction from agricultural demonstration agents in the South, and one in 159 in the North gets such personal instruction. One farmer in every 2.3 stated that none of the above agencies were helpful in his farming; one in 6.3 said the farmers' bulletins were the most helpful; one in 3.6 preferred farmers' institutes; one in 40.3 claimed farm papers as being the most helpful; one in 4.5 stated that all agencies were equally valuable; one in 43.7 said that experience was the only valuable teacher.

Thinking of building?

Get this book. It's a better book than sold usually for 50 cents to \$2.00. "Most practical Plan Book ever published," many say.

Get this Book

100 good homes, pictures and plans

Exterior views, floor plans, full descriptions, and estimated costs. Sent you for only 10c because part of our service in connection with the sale of lumber and millwork direct to user at wholesale.

HEWITT-LEA-FUNCK CO.
1101 4th Ave.,
Seattle, Wash.



**Worth \$1
Yours for 10c**

Protect Your Trees

DON'T take chances with your young trees. One rabbit will kill many in a single night. Mice and cut worms will damage and destroy them if you don't protect them. Get dollars' worth of protection at a fraction of a cent cost by using

Hawkeye Tree Protectors

Absolute protection against gnawers and borers. Prevent trees from becoming skinned and bruised by cultivator or lawn mower. Made of tin veneer, chemically treated. Easily put on and will last until tree is beyond needing protection. Don't wait until some of your trees are killed—order Hawkeye Protectors now. Regular size 10 inches wide, 30 inches high. Price in lots of 100—1 cent apiece, in lots of 1000—1/2 cent apiece. Special sizes made to order. Write for circular and samples.

Burlington Basket Company
122 Main St., Burlington, Iowa

YOU CAN EARN \$50.00 PER DAY

with the Gearless Improved Standard Well Drilling Machine. Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing 9 hours. Another record where 70 feet was drilled on 2 1/2 gal. distillate at 9c per gal. One man can operate. Electrically equipped for running nights. Fishing job. Engine ignition. Catalogue W. R. REIERSON MACHINERY CO., Manfrs., Portland, Ore.



The Home Maker

Get Your Canadian Home from the Canadian Pacific



BUY an irrigated farm where you have insurance against drought and where you have just the moisture you need when you need it. You know the value of controlling the watering of your crops. In sunny Southern Alberta you are master of the moisture. The Canadian Pacific's great Irrigation Works insure your yield whenever rainfall is insufficient. Irrigation is not always a necessity—but it is yours at command. It means dependable crops, and wonderful crops every year. The Eastern section of the Canadian Pacific Irrigation Block East of Calgary is now open. Virgin soil of famous fertility—alfalfa, timothy and other fodders—raises all the grain and root crops, fine climate—great cattle country—good markets—unexcelled transportation.

We want the alert enterprising farmers who see this magnificent opportunity. So we make the most liberal terms. Take 20 years to pay. Call on us for long time loan of \$2000 for farm improvements if you want it. Investigate now. This block will soon be the most densely populated and intensely cultivated district in the west.

You Can Have 20 Years to Pay

We will sell you this rich, irrigated, Canadian land for \$5 to \$25 an acre. You need pay only one-twentieth down. Think of it—only one-twentieth down, and then the balance in 19 equal annual payments. Long before your next payment comes due, your farm will have paid for itself over and over again. Many good farmers in Western Canada have paid for their farms with one crop. Here are some of the starting features of the most remarkable land offer you have ever read:

We Lend You \$2,000 for Farm Improvements This offer of a loan up to \$2,000 with no other security than the land itself, and shows our confidence in the fertility of the soil and in your ability to make it produce prosperity for you and traffic for our lines. This loan will help you in providing buildings, fencing, sowing and land breaking, and you are given twenty years in which to fully repay this loan. While enjoying the use of this money, you pay interest at only 6%.

Advance Live Stock on Loan Basis The Company, in case of the approved land purchaser who is in a position and has the ability to take care of his stock, will advance cattle, sheep and hogs up to the value of \$1,000 on the basis of the settler's note with interest at eight per cent, to enable him to develop more rapidly, on the right basis.

Farm Made Ready by Experts if Desired If you want a place already established, select one which our Department of Agricultural Experts has developed. On our improved farms, house and other buildings are up, well sown, farm fences, fields cultivated and in crop. All waiting for those who want an immediate start and quick results—all planned and completed by men who know our own agricultural experts. Take twenty years to pay if you want to. We give free service—expert service—the valuable assistance of great demonstration farms, in charge of agricultural specialists employed by the Canadian Pacific for its own farms. This service is yours—free.

Water Rental Will Not Exceed \$1.25 per Acre Each water agreement will have approval of Dominion Government. Lands are located on or near established lines of railway. First payment of irrigated land is 1/20th of purchase price. At end of first year no payment is due on principal or water rental, only payment of interest is required. At end of second year, no payment of principal is required, but purchaser will be required to pay interest and water rental. At end of third year, the second payment of principal, interest and water rental will be required.

Here is where your opportunity lies. Don't delay. Mail coupon here at once. Best land will be taken first—time is precious to you. Write today.

W. T. THORNTON, Colonization Agent
Canadian Pacific Railway
Colonization Department
112 West Adams St., Chicago, Illinois

W. T. THORNTON, Colonization Agent,
Canadian Pacific Railway
Colonization Department,
112 W. Adams St., Chicago

Please send me your book of information on Irrigation Farming in Sunny Alberta.

Name.....
Address.....
Town.....
State.....



By-Products of the Apple

By C. L. Smith, Agriculturist of the Oregon-Washington Railroad & Navigation Company.

Canned Wagener Apples—Make a syrup of one cup of water to one cup of sugar. Pare, core and cut into eighths sound Wagener apples. Drop into the syrup and cook until clear. Pack closely into a glass jar, fill with the boiling syrup and seal.

Canned Pie Apples—Inferior fruit may be used, by carefully cutting away all the bad parts. Make a syrup as for canned apples. Pare, core and slice the apples, cook in the syrup until clear, pack closely in jar, fill with boiling syrup and seal. Any tart apple may be used.

Preserved Jonathan Apples—Pare sound Jonathan apples of medium size,

cook the skins in water to remove the color. To each cup of this water add two cups of sugar. Core and cut the apples into eighths, cook in the syrup until clear. Transfer carefully to jars, being careful not to break the pieces; boil the syrup down, pour over the apples and seal. They will be a dark, rich color.

Apple Conserve—Make a syrup of two cups of sugar to one-half cup of water. Use Jonathan, Yellow Newtown or Bellflower apples, pared and quartered unless the apples are large, then cut into smaller pieces. Boil the sugar and water until a rich syrup is formed, then add the apples and simmer until

The Little Wonder Steam Fruit Evaporator

The successful fruit grower of to-day and the future, is the man who will reduce the cost of production and

Save the Waste

We have designed an evaporator along original lines, that has all modern practical conveniences, without any of the draw-backs and delays so frequently found in other evaporators. The Little Monday has a capacity of from 1 to 10 tons per day according to the number of tunnels.

For high class finished products produced by the Little Monday there is no equal. The fastest, most economical, perfect and simplest evaporator on the market.

Demonstrations will be given at the Oregon State Fair, Salem, Sept. 2-Oct. 3; also at the office of the company, 207 Clay street, Portland, Oregon, by appointment, Sept. 1 to Sept. 24.

For further particulars, illustrated descriptive matter, prices, etc., write

Oregon Heating Company

207 Clay Street, Portland, Oregon

KINGMAN & HEARTY, Inc.

E. W. J. HEARTY, President

Commission Merchants

Box Apples a Specialty

20 Faneuil Hall Market (North Side)

BOSTON, MASSACHUSETTS

Ground Phosphate Rock

The Natural Plant Food and Permanent Soil Builder

1,000 pounds per acre once in each four years will cost about \$1.00 per acre per year. At Pennsylvania State College \$1.05 invested in Rock Phosphate gave increased yields of \$5.85—over 500%. At Maryland Experiment Station \$1.96¹/₄ gave \$22.11—over 1,000%. At Ohio Station each dollar paid for itself and gave \$5.68 profit. At Illinois Station \$2.50 gave the same return as \$250 invested in land.

Each ton contains 280 pounds of phosphorus, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

United States Phosphate Co., Salt Lake City, Utah

WRITE FOR LITERATURE

"Perfection of fineness in grinding," our motto

See the greatest Wild West Exhibition ever staged!

Never before has such a show been held in America! Every minute filled with exciting novel features. One thrilling feat after another, by broncho riders, cowboys and cowgirls. Hundreds of performers. Six bands. Indian races—cowboy races—buffalo chase, with real buffalo—Indian massacre—stage-coach holdup, etc. Plan now to attend

"FRONTIER DAYS"

WALLA WALLA, WASH.
SEPTEMBER 17, 18, 19!

The Walla Walla Fair comes September 14, 15, 16. Spend the week here. Horse races, running races, stock and fruit exhibits, "Buster Baby" contests, etc. Over \$20,000.00 in cash prizes! Write now for program and Reserved Seats to Secretary, E. H. JOHNSON, Walla Walla, Wash.



40 Rounds of boxing each night in front of the grandstand by representatives of the Amateur Athletic Clubs of the Northwest



clear. Take up carefully, lay on plates and let dry in the sun twelve hours, roll in sugar. Treat in this manner for three or four days, then pack in glass jars. This is fine to use in cake in place of other fruit.

Apple Honey—Pare, core and run through the coarse part of the meal grinder Wagener or other juicy apples. Add an equal amount of sugar, simmer gently for two hours, then seal in glass jars.

Apple Marmalade—Pare, core and cut into small pieces any coarse-grained apples. Cook until soft in barely enough water to prevent burning. Run through a sieve. Add an equal amount of sugar, boil until thick and put up in jars or glasses. Cover with paraffine. When cold this should cut like cream cheese. Lemon juice may be added while cooking if desired.

Apple Marmalade, Spiced—Spiced Marmalade is made the same as the plain, except that when the apples are cooking there is added a spice bag containing one teaspoonful of cinnamon, one of cloves and one-half teaspoonful each of nutmeg and allspice. This is removed when the marmalade is taken from the fire.

Apple Butter, Plain—Pare, core and slice the desired quantity of apples. Boil sweet cider until it is reduced one-half. While the cider is boiling add the apples. Cook slowly, stirring constantly. When it begins to thicken add one cup of brown sugar to each two quarts of butter. Boil until it remains in a smooth mass, when a little is cooled. About a bushel of apples to a gallon of boiled cider will be found the right proportion.

Apple Butter, Spiced—Spiced butter is made the same as the plain with the addition of a small amount of cinnamon and ginger.

Pickles, Plain—To one quart of cider vinegar add two cups brown sugar. When boiling add, a few at a time, apples which have been pared, cored and quartered. Boil gently until the apples can be pierced with a straw. Remove and pack carefully in a jar, pour over them the boiling vinegar and seal.

Pickles, Spiced—Make same as plain pickles, dropping into the vinegar a bag containing a little mace, cloves, pepper, allspice, celery seed, white ginger in small bits and ground mustard, leaving this in the vinegar until the pickles are done. Two or three whole cloves stuck into each piece of apple makes them attractive.

Apple, Cabbage and Celery Salad—Take equal parts of apple, celery and cabbage. Cut the apple into long, thin, narrow strips, shave the cabbage and cut the celery into small pieces. Have all cold and mix with a heavy mayonnaise dressing just before serving.

Mince Meat—To one pound of lean beef, boiled and finely chopped, add two pounds of chopped apples, one pint boiled cider, two cups brown sugar, one-half cup molasses, one cup of seeded raisins, one cup of currants, one-half cup chopped citron and a little

WELCH & WELCH 3-5 W. So. Water Street CHICAGO

SPECIALIZE ON CAR LOTS

Apples, Peaches, Pears

Get in touch with the
Livest House in Chicago
Write Today

Members { National League Commission Merchants
Western Fruit Jobbers and
International Apple Shippers Association

ground spice. To this may be added a little marmalade, preserves, spiced ginger, orange or lemon peel, or candied cherries. The above is a good formula to follow, but of course may be varied to suit individual taste and the materials at hand. If too rich add more chopped apples. In place of cider equal parts of vinegar and water may be used.

Preserved Apples, Whole—Use Whitney No. 20 apples. Wash and steam until they can be pierced with a straw. Place in a syrup made in the proportion of one-half cup of water to two cups of sugar, let simmer gently for a few minutes, remove the apples and pack carefully in glass jar, boil down the syrup and pour over them, seal.

Apple Chutney—Pare and core twelve sour apples, remove the skin from three onions, clean one bunch of celery, seed one cup of raisins. Run all through a meat grinder. Put on to cook with one pint of cider vinegar, juice of two lemons, one-half glass of currant jelly, two cups brown sugar, one tablespoonful of salt and one of ground ginger. After cooking one hour add a spice bag containing two tablespoonfuls of mixed spices. Cook one hour longer, stirring constantly. Seal same as canned fruit.

Apple Jam—Pare, core and chop one pound of apples, add one pound of sugar, one cup chopped raisins, chopped rind and juice of an orange and lemon. Cook until the apples are clear and the mixture thickens like jam when cooled.

Apple Relish—Three pounds of apples, pared and diced. Three pounds sugar, one pound raisins, one pound pecans, two oranges; remove peeling and grind it in the meat grinder; then cut the orange into small pieces. Cook for one hour, adding the nuts five minutes before removing from the stove.

Apple Relish No. 2—Pare, core and slice tart apples. Cook in a very little water until tender; rub through a sieve. To one quart of pulp add one cup of sugar, one cup boiled cider, one cup vinegar, one teaspoon ginger, one teaspoon cinnamon, one-half teaspoon each of ground nutmeg, cloves and allspice. Cook all together until it will cut when cold. This is fine to serve with cold or roast meat.

Apple Delight—Put two cups of chopped apple in a double boiler with two cups of brown sugar, juice and

“PEARSON’S”

(CEMENT COATED)



Honest Quality
and
Full Count
have made them
the
world's standard.

Always Specify
PEARSON'S

Accept no
Substitute

J. C. PEARSON COMPANY, Inc. THE U. S. STEEL PRODUCTS CO.
Old South Building San Francisco
Boston, Mass. Pacific Coast Representatives
Sole Manufacturers



You can buy an
Edgemont Lid Press from

WE WISH TO AGAIN CALL THE ATTENTION
OF FRUIT GROWERS TO OUR

Edgemont Lid Press

A press that is strong, durable, convenient
and moderate in price.

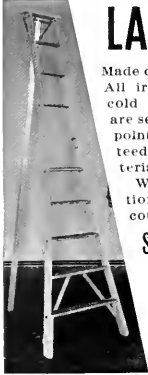
That a Lid Press with nail stripper and cleat box, brackets to hold lids where you want them, cleat hooks to hold cleats while nailing and a perfect treadle ratchet is appreciated by the growers, is shown by the sale of hundreds of them to growers not only of the Northwest but of nearly every fruit district of the United States.

Send for circulars and prices to

H. PLATT & SONS, Como, Montana

YAKIMA HARDWARE CO., North Yakima, Washington
PLOUGH HARDWARE CO., Wenatchee, Washington
BERGER & CARTER CO., 504 Mission Street, San Francisco
B. G. PRATT CO., 30 Church Street, New York City
INLAND SEED CO., 913 First Avenue, Spokane, Wash.

SCHLEE'S ORCHARD LADDERS



Made of select vertical grain fir. All iron work made of strong cold bent steel. The Ladders are securely braced in all vital points and absolutely guaranteed against all defects of material and workmanship.

Write for further description and prices. Special discount to the trade.

SCHLEE'S LADDER WORKS
267 Second Street
Portland, Oregon

Manufacturers of
Orchard Ladders, Step Ladders,
Extension Ladders,
Decorating Trestles, Ladder Jacks
Window Cleaning Ladders,
Root Jacks

Have You Read This ?

"At my home on Nob Hill I have two walnut trees which I purchased from your Company. They are now 13 years old; were one year old when planted. They have been bearing eight years. The trees are perfectly hardy, having withstood a freeze of 20 degrees below zero. I gathered over six bushels of nuts from these two trees last fall. My grower pronounced them superior in size and flavor to 'California nuts.'—E. W. Brackett, North Yakima.

Space here forbids much explanation, but if you will write us we will gladly explain the difference between the famous **BROOMAN PURE STRAIN FRANQUETTE WALNUT** and the common sort. You can afford and should have at least a few of these most desirable trees in your orchard. Write us—now. We also have, you understand, the largest assortment and stock of all kinds of fruits, berries, vines, roses, etc. In the West, **ORENCO** trees are planted from coast to coast, because they are known to be always—dependable—first class.

Oregon Nursery Company

ORENCO, OREGON

Dependable Salesmen Wanted

BUY AND TRY

White River Flour

MAKES

Whiter, Lighter
Bread

chopped rind of one orange, one cup of chopped raisins. Cook for one hour, adding one cup of chopped walnuts five minutes before removing from the stove. Pack in jelly glasses and cover with paraffine.

Apple, Celery and Nut Salad—Mix one cup of celery with three cups of apples cut into small pieces, with one cup of walnut meats cut fine. Dress with a boiled salad dressing and serve in apple cups or on lettuce leaves.

Apple and Nut Salad—Pare and core two large sour apples, cut in very small pieces and mix with one cup of walnut meats and mayonnaise dressing. Just before serving mix with one cup of whipped cream and serve on lettuce leaves.

Clarified Apples—Pare, core and cut into thick slices twelve tart apples; drop these, a few at a time, into a thick syrup made of four cups of sugar and two cups of water, cook until clear, remove and drain. Add the rind and juice of one lemon to the syrup and boil until thick and pour over the apples.

Crabapple Pickles—Choose medium sized Transcendent crabapples, wash, and prick the skins; steam until tender, then bring to boiling point in sweet spiced vinegar, such as is used for spiced apple pickles. Seal in glass jars.

Preserved Crabapples—Cut out the blossom but leave the stem on highly colored Hyslop crabapples. Make a syrup in the proportion of one cup of water to two cups of sugar. Cook a few apples at a time until tender, remove and place in glass jar. When all the apples are cooked, boil the syrup until thick, pour over apples and seal.

Coddled Apples—Take tart, ripe red apples of uniform size, remove the cores and place in an aluminum basin with a little water; spread thickly with sugar, simmer until tender, pour the syrup over the apples and serve cold.

Apple and Quince Preserves—Pare, core and quarter sweet apples and a third as many quinces. Boil the quinces in just enough water to cover, remove, and add to the water as much sugar as there are quinces and apples. Let boil, skim, and drop the quinces and apples in. Let boil fifteen minutes. Pack the quinces and apples in glass jars or glasses, boil the syrup until it jellies and pour over the fruit.

Apple Vinegar—Pure, clean apple cider stored in vinegar barrel for a year or longer makes the best vinegar.

Wagener Apple Cider—The Wagener and Snow apple cider in this collection were made by using only clean, sound fruit, run through the cider press, strained several times, allowed to settle, the cider syphoned off and bottled. A delicious cider is made by combining these two.

Apple Syrup—Slice and cook one dozen tart apples and one box of raspberries or one cup of raspberry juice in water enough to cover. Strain as for jelly, boil ten minutes, then add of sugar two-thirds the quantity of juice and boil five minutes longer. This is fine for pudding sauce or used as syrup.

KNOW YOUR STATE

Its Natural Advantages, Resources and Vastness.

No better way than to visit the

Washington State Fair

"The Show Window of the State"

the week

September 21st to 26th, Inclusive

North Yakima, Washington

Great Live Stock Exhibits

Horticultural, Agricultural, Mineral,

Dairy, Apiary, Machinery and Manufacturers,

Arts and Crafts, Birds, Children's Industrial

Spend your vacation in North Yakima the week of the Fair; bring the entire family. Special rates on all railroads. For further particulars address

J. E. SHANNON, Sec'y, North Yakima, Wash.

CARTERS TESTED SEEDS, INC.



DEAN D. BALLARD, N.W. Mgt.,
Arcade Bldg., Seattle, Wash.

Send for our catalog of these famous prize-winning English vegetable and flower seeds.

Invigorate Your Orchards

Better size, color and flavor assured. Acts quickly upon growing fruit. Positively removes all cherry gumosis. Will apply for 5 cents for four-year-olds, others 10 cents.

Write me quick.

W. D. MOREHOUSE
The Dalles, Oregon

H. HARRIS & CO.

Fruit Auctioneers

227 State Street

Boston, Massachusetts

Established 1847

Frank Moseley
Frank L. Ripley
Cutler B. Downer

Portland Wholesale Nursery Company

Rooms 301-302 Stock Exchange Building

Corner Third and Yamhill Streets

PORTLAND, OREGON

Save \$35 to \$50

Yes sir, I'll save you \$35 to \$50 in the first cost alone on the best, most modern, most sanitary and closest skimming cream separator ever built. When you buy this

New Galloway Sanitary—you pay just one small profit above actual cost of materials and labor. Why pay any dealer \$85 to \$110 for an inferior machine. Buy direct and save one-third. Get your money's worth.

Special 1914 Offer and 90 Days FREE TRIAL test of this machine right on your farm.

The new Galloway Sanitary skims to a trace, gears run in oil—easy to run—easy to clean. Solid drive. Backed by \$25,000 bond. Write for new catalog and special 1914 offer that will help you get your machine partly or entirely without cost in the end. Write today.

WM. GALLOWAY COMPANY Waterloo, Ia. 405
1053 Galloway Station



BALTIMORE THE SOUTHERN GATEWAY

Our location and facilities are in the 4A class.

We have also reservations in a new Cold Storage House for a number of cars of Box Apples—on which a liberal cash advance will be made.

"The Pioneer Box Apple House" **F. BORDER'S SON CO.**

Dried Apples—Select sound, well-matured fruit, pare, core and cut in rings. String and dry near the fire. If the winter apples are not keeping well it is a good plan to dry or can them to prevent waste. There is a time in the spring before fresh fruit comes when these apples will prove welcome. Although there is a prejudice against dried apples, they can be made very palatable with a little care.

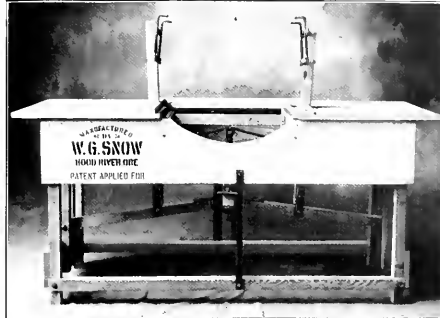
Candied Yellow Newtowns—Candied Jonathans—These two varieties were found to hold their shape and retain a fine flavor when candied. Pare, core and cut into eighthths medium sized apples; drop a few at a time into a rich syrup composed of two cups of sugar to one-half cup of water, let simmer gently until clear, remove and place on a plate to drain. Dry for a few hours then roll in granulated sugar; let stand over night, then roll again. Repeat this process until they will not absorb any more sugar, then pack in tin boxes lined with oiled paper. These are delicious as a confection or to use in fruit cake or puddings in place of other fruit.

Wagener Apple Jelly—Slice apples, without removing cores, put into preserving kettle with water enough to cover. Cook gently until soft, drain and strain, then boil for ten minutes and add an equal amount of sugar. Stir till the sugar dissolves and boil quickly until it will form a jelly on a spoon or cold dish. Pour into sterilized glasses and cover with paraffine.

Jelly Made With Wagener Apple Skins—When making apple butter, marmalade, etc., there will be a great many skins left. To avoid waste these can be utilized for jelly. Cover them with water in a preserving kettle and cook rapidly for half an hour. Let drain over night and proceed as for apple jelly.

Yellow Newtown Apple Jelly—Made the same as Wagener apple jelly. This gives a bright yellow jelly that is very clear and pretty.

Crabapple Jelly—Wash and slice crabapples. Put into a preserving kettle with just barely enough water to come to the top of the fruit. Cook rapidly for half an hour. Drain without pressure. Cook again for ten minutes, then add an equal amount of sugar and



THE IMPROVED HOOD RIVER BOX NAILING PRESS

Is the Best Device of its kind for the money on the market

The fact that Hood River growers by the hundreds use them, is our best testimonial. And those who have had experience with the press are satisfied; for by the elimination of box bruises it has aided in making the Hood River apple famous.

If you are in the market for a Nailing Press, it is to your advantage to investigate the HOOD RIVER PRESS and get our prices.

W. G. SNOW
Hood River, Oregon

The Hood River Apple Sizer

Apple buyers and consumers are demanding standardization and uniformity in the grading and sizing of apples. This work is usually done by hand, costing from five to fifteen cents per box. The apple industry demands economy in every phase of the business. Consequently an apple grower in Hood River has invented

The Hood River Apple Sizer

It will reduce the labor of grading and sizing from 20 to 20 per cent after crop is in the apple house, making the little machine save \$2.50 to \$5.00 per day.



The Hood River Apple Sizer is simple in construction and operation—with no complicated machinery to get out of order. It is small and compact, occupying a space of 4 1/2 feet so it can be used in any packing house, no matter how small. With extra help it has a capacity of 500 boxes per day and the cost of grading and sizing can be done for 3c per box. The price is so low that every grower, no

matter how small, cannot afford to be without it. ANY GROWER WITH A 1,000 BOX CROP CAN SAVE THE COST OF THE MACHINE IN ONE YEAR.

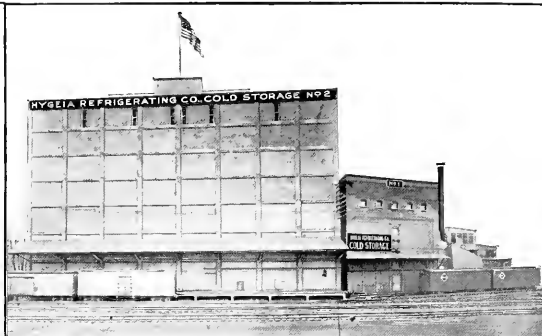
FOR PARTICULARS AND PRICES WRITE TO

J. F. VOLSTORFF, Hood River, Oregon

HYGEIA REFRIGERATING COMPANY

ELMIRA, NEW YORK

CAPACITY
35 CARS PER DAY
300,000 BOXES



EVERY FACILITY
is offered for the successful
storage and marketing of

Boxed Apples

for domestic and
export trade.

Fireproof Warehouse
Lowest Insurance Rates
Four Trunk Line Railroads
Special Outgoing Storage
in Transit Rates
Storage rates, etc., quoted
on application

SHIPPERS OF APPLES PEACHES PEARS PLUMS CHERRIES ETC.

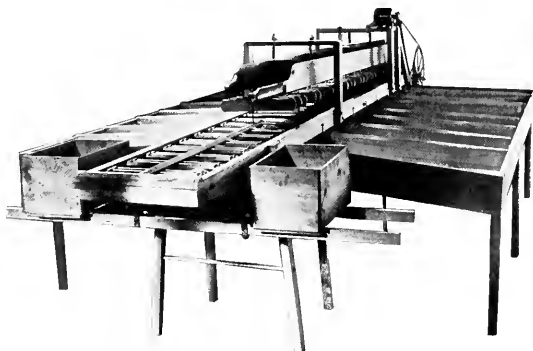
When wishing to use the Cleveland market, or desiring reliable information concerning same, write or wire us. We are among the largest receivers here.

SPECIAL FEATURES:

Absolute responsibility, reliable and prompt service. No house in any market excels us in making prompt remittances when goods are sold. Liberal and consistent advances made on consignments. Ample cold and dry storage facilities.

Myers, Weil & Co.
CLEVELAND, OHIO

The Pride of Oregon Apple Sizer



Is the most simple and economical sizer on the market today. Experience has demonstrated that sizing to eight divisions is more practical than a greater or less number of divisions and enables packers to pack the maximum quantity per day, thereby reducing the cost.

The sizing is done **ABSOLUTELY WITHOUT BRUISING.**

The sizer is strongly and simply constructed, with no complicated machinery to get out of order, and will last a lifetime.

The machines will make two grades at the same time and divide each into eight sizes.

The construction is so simple that the machine can be operated with $\frac{1}{2}$ -horsepower motor—either electricity, gasoline engine, or by hand.

For particulars address

The Pride of Oregon Apple Sizer

J. R. NUNAMAKER & CO.

HOOD RIVER, OREGON

boil to the desired consistency. Pour into jelly glasses. Crabapple juice added to quince, plum or peach juice makes a pleasing flavor. The crabapple contains a large amount of pectose and and therefore makes a firm jelly more readily than almost any other fruit. By sorting the apples according to color a bright red or clear yellow jelly may be made as desired.

Hyslop Crabapple Jelly—Made the same as crabapple jelly, this gives a dark red jelly of delightful flavor.

Apple and Quince Jelly—Take equal parts tart apples and quinces, or if the quinces are scarce use the parings and cores of quinces, reserving the quinces for preserves. Proceed the same as for apple jelly.

Apple and Mint Jelly—Wash and slice either crabapples or sour apples and cover with water. Boil until soft, then drain and cook ten minutes; measure juice, add an equal amount of warm sugar; boil rapidly until a little jellies on a cold spoon; then add several sprigs of mint and enough green vegetable coloring matter to make a delicate green. Strain into jelly glasses and when cold cover with paraffine. This is excellent to serve with lamb.

Spiced Apple Jelly—Wash and slice sour apples, put into preserving kettle with a little vinegar and a spice bag left from making sweet pickles or a few whole cloves and sticks of cinnamon. Let boil until the apples are soft, then strain; take equal parts sugar and juice and boil until it jells. This is fine to serve with meat.

Lemon Apple Jelly—To one quart of apple juice add the juice of one lemon and one quart of sugar; boil until it jells, then strain into jelly glasses. If the supply of jelly runs low toward spring, this is one way to use the apples that are lacking in flavor. Orange juice may be added in the same way.

Apple and Raspberry Jelly—Take equal parts apple and raspberry juice; let boil twenty minutes and add an equal amount of sugar. Let boil briskly until it jellies on a spoon. Blackberry, choke cherry, grape and rhubarb can be used in the same manner. Apple makes the best and most inexpensive foundation for all kinds of jelly.

Jonathan Sauce With Skins—Extract the color from Jonathan peelings by boiling in a little water. To each cup of this red juice add a cup of sugar. Quarter and core bright apples, cook in this syrup until tender and serve cold.

Baked Rome Beauties—The Rome Beauty is a good apple to bake, as it retains its shape. Wash and core. Fill the space, and cover, with sugar. Put in an aluminum baking dish with a little water and bake until tender.

Baked Wageners, Spiced—Pare, core and quarter medium sized Wagener apples. Mix a teaspoonful of cinnamon with a cup of sugar. Put a layer of apples in the dish and cover with the sugar, then apples, then more sugar; lastly a little water. Bake until tender.

Apples en Casserole—Pare, core and slice one quart of tart apples and put in a baking dish alternately with one cup of sugar and one-quarter cup of cold water. Cover and bake in a moderate oven. Serve either hot or cold with cream.

Plain Apple Pie—Sift one cup of flour and one-fourth teaspoon of salt into a bowl, rub into it four tablespoonfuls of shortening until the whole is reduced to a fine powder; add cold water slowly to make a stiff dough. Place on a slightly floured board and roll thin; spread with another tablespoonful of shortening and fold, then roll again. Cover tin loosely with this paste, brush over with white of egg, fill with thin slices of good cooking apples, sprinkle with one cup of sugar with which has been mixed a tablespoon of flour. Scatter over a few small lumps of butter, moisten edges with unbeaten white of egg or cold water, cover with crust, pinch the edges together with fingers or tines of fork, prick holes in center of crust, bake in moderate oven for half an hour.

Mince Pie—Make crust the same as for apple pie and fill with mince meat made as directed in recipe for mince meat given elsewhere in this article.

Apple Custard Pie—Put three cups of apple sauce through a sieve, mix with beaten yolks of four eggs and whites of two, and one and a half cups of sugar. Put in a tin with bottom crust only. Bake in rather quick oven. When nearly done, cover with meringue made with whites of two eggs, two tablespoonfuls of sugar and a few drops lemon extract, and let brown slightly.

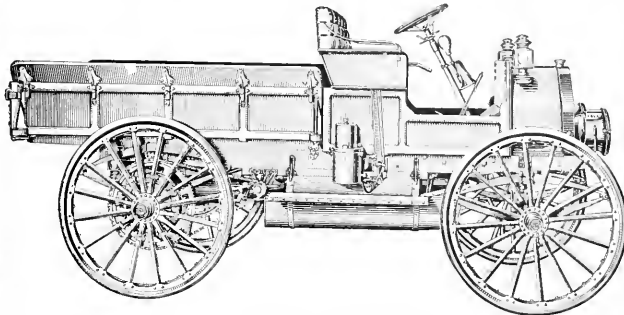
Chopped Apple Pie, Spiced—Chop or run through a meat grinder enough tart apples to fill a pie tin. Mix with a cup and a half of sugar, one teaspoonful of cinnamon and one heaping teaspoonful of flour. Line pie tin with crust, fill with the apples and cover with narrow strips of crust. Bake in moderate oven.

Apple Charlotte—Soak one-quarter of a box of gelatine in two tablespoonfuls of cold water. Add this to one pint of hot apple juice sweetened to taste. When it begins to harden, beat in one pint of whipped cream. Place a layer of apple conserve in bottom of mould, pour in the mixture and set away to cool.

Candied Apple Jello—Make lemon jello according to directions and when

Use An International Motor Truck

Many an up-to-date successful fruit grower will tell you that we are justified in saying this: Wherever fruit growing is a business, and produce is still handled by horse and wagon, there are respectable fruit profits going to waste.



The International Motor Truck

saves and makes money for thousands of firms in practically all lines of business. Your business deals in perishables that require timely, rapid, perhaps long-distance hauling.

Buy an International and be ready for your daily hauling problems and for emergency trips. The International is simple, sturdy, easy to operate. It is always ready to go, rain or shine, day or night, in all seasons on all roads. It does the work of three or four horse-and-wagon rigs, goes three or four times as fast as one. When it is not in use it puts you to no expense, and when you want it the International will be ready for you.

Our catalogue will tell you of many such features as these: Solid puncture-proof tires; simple, accessible, powerful motor; single lever control; wheels high enough for good traction and ample road clearance; any style of body, etc. If better business interests you write us for more information.

International Harvester Company of America
INCORPORATED

Chicago

U. S. A.

D. Crossley & Sons

ESTABLISHED 1878

Apples for New York and Export

CALIFORNIA, OREGON, WASHINGTON, IDAHO AND
FLORIDA FRUITS

Apples handled in all European markets at private sale. Checks mailed from our New York office same day apples are sold on the other side. We are not agents; **WE ARE SELLERS.** We make a specialty of handling **APPLES, PEARS AND PRUNES** on the New York and foreign markets. Correspondence solicited.

200 to 204 Franklin Street, New York

NEW YORK

LIVERPOOL

LONDON

GLASGOW



One of our houses

Look at the above Home You Can Build it Yourself!

Simply "follow our plans." They are simple and easy—anybody can do it. No building expense necessary just your time and a hammer.

Here's the way—we furnish the lumber, trim, finish, doors, windows, paint, stain, nails, hardware, plaster, or interior wall board—all numbered to fit the plans.

Follow the plans—you can't go wrong. The result—an economically built home, permanent, substantial and attractive. NOT a portable house. Satisfaction guaranteed.

Your own ideas carried out, if preferred. Plans for any sized house furnished. Send for illustrated catalogue. It shows homes you can build easily, quickly and economically. Write today.

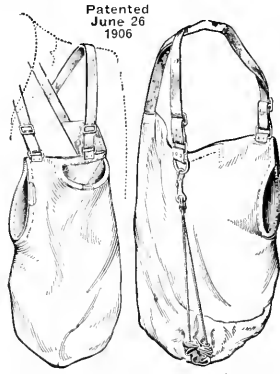
Ready Built House Company
978 Broadway PORTLAND, OREGON

YOU WANT THE BEST SPRAYER



You want to save time, temper, trouble and trees. You want to raise fruit that bring the highest prices. You want to know all about our sprayer before you buy. There is more you ought to know. Do You Want To Know The Price?

Write for Catalogue #6
REIBSON MACHINERY CO.
Manufacturers 182 Morrison St., Portland, Ore.



FRONT BACK

IDEAL FRUIT PICKING BAG

Made of heavy weight duck and so arranged as to equalize the load on both shoulders.

The openings are arranged so both hands can be used in picking, and the drawing is arranged so the fruit can be let out at the bottom in emptying the bag. The bag can be let down to the bottom of the box before opening the drawing, thus not bruising the fruit.

This is the best and handiest arrangement for picking fruit that has ever been offered. A trial will convince even the most skeptical.

SAMPLE, POSTPAID, \$1.00
AGENTS WANTED
Barker Manufacturing Co.
35 Ambrose St. ROCHESTER, N. Y.

nearly cold add small pieces of candied apple. Serve with whipped cream.

Brown Betty—Pare, core and chop six apples. Place a layer of bread crumbs in a well buttered baking dish, then a layer of apples, sprinkle with brown sugar and cinnamon; repeat fill the dish is nearly full. Pour on milk until it comes nearly to the top of the apples, add a few pieces of butter and bake about three-quarters of an hour. Serve with a hard sauce.

Apple Dumpling—Cut rich pie crust into four-inch squares. In the center heap half a cup of sliced apple, sprinkle with sugar and cinnamon. Moisten the edges with the white of egg, press the edges together. Bake about forty minutes. When nearly done brush with white of egg and sprinkle with sugar. Serve with pudding sauce or sweetened cream.

Apple Tarts—Fill tarts with apple custard and bake. When cold cover with a spoonful of whipped cream, put a spoonful of red apple jelly in center and serve.

Apple Cake—One cup sugar, one-half cup shortening, two eggs, one-half cup sour milk, one-half cup molasses, one cup thick, sweetened apple sauce, one teaspoon cinnamon, one level teaspoon soda, three cups flour, six level teaspoons baking powder. Cream the sugar and shortening, add egg yolks and beat, then add the sour milk, molasses and apple sauce, then soda dissolved in a little water. Sift the baking powder and cinnamon with the flour and add to the mixture; beat well, adding the well beaten whites last. Bake in dripping pan, loaves or in gem tins.

Apple Cobbler—Pare and slice sufficient tart apples to fill a pudding dish three-quarters full, sprinkle generously with sugar and a little spice if desired. Add a little water. Cover with a rich baking powder biscuit crust without rolling out. Leave a hole in the top for the steam to escape. Bake half an hour. Serve with rich pudding sauce.

Foreign Apple Markets

Last year arrangements were made by marketing organizations in the Northwest and permanent offices established in England to enable the shipping concerns of the Northwest to keep in closer touch with European consuming points. These representatives will undoubtedly be instrumental in increasing the exports of apples to such ports as London, Liverpool and Manchester in England, Glasgow in Scotland, Hamburg and Bremen in Germany, Paris in France, Christiana and Bergen in Norway, Stockholm, Gothenburg and Malmo in Sweden, Copenhagen in Denmark, Botterdam in Holland, Antwerp in Belgium and Helsingfors in Finland. From these large cities practically all of the smaller cities in these different countries can be supplied, and it is to be hoped the establishment of offices in England will be instrumental in effecting an increase in European consumption of apples.



Disk Tools for Intensive Tillage

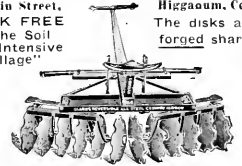
There isn't a farmer in America but who should own at least one Cutaway (Clark) disk harrow or plow.

Over 100 Styles and Sizes

Ask us about the DOUBLE ACTION ENGINE HARROW, the DOUBLE ACTION—REGULAR, the DOUBLE ACTION—EXTENSION HEAD—(for orchard work), the SINGLE ACTION—REGULAR, the SINGLE ACTION—EXTENSION HEAD—(for orchard work), the BUSH AND BEEG PLOW, the CORN AND COTTON HARROW, the RIGHT LAP PLOW, the CALIFORNIA ORCHARD PLOW, or the ONE-HOUSE HARROWS and cultivators, whichever it may be that you need. Ask your dealer to show you a CUTAWAY (CLARK) machine. Do not accept a substitute. Write us for catalog.

The Cutaway Harrow Company
Maker of the original CLARK disk harrows and plows

940 Main Street,
BOOK FREE
"The Soil and Intensive Tillage"



Higganum, Conn.
The disks are forged sharp

Store Your Apples in Spokane

The Natural Storage Center

Take advantage of storage in transit rate and the better market later. Write us for our dry and cold storage rate and information.

Ryan & Newton Company

Spokane, Washington

Perfect Trees Perfect Fruit

The fruit grower's greatest problem is to combat successfully the ravages of pests, insects and blight. Perfect fruit—the kind that produces the real money—is impossible where trees are affected or diseased. After years of experimentation and practical tests I have a product that is marvelously effective.

"Mustonia"

Powerful Antiseptic and Germicide Solution

For Blight, Codling Moth, Thrip, Green and Black Fly, Mildew, etc.

Spray with Mustonia three or four times a year and your trees will be healthy and vigorous; their producing efficiency will be increased to the maximum. Roses, flowers, plants respond quickly. Give Mustonia the hardest trial you can; absolutely warranted where simple instructions are followed. Write today for literature, instructions for using and helpful suggestions on tree planting, root trimming, etc.

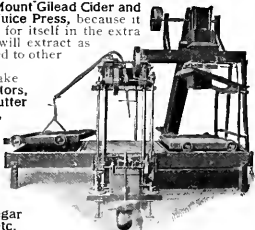
E. Leech, F. R. H. S.

Stevensville, Montana

BIG PROFITS in the Cider Business

with a Mount Gilead Cider and Grape Juice Press, because it will pay for itself in the extra juice it will extract as compared to other makes.

We make Evaporators, Apple Butter Cookers, Vinegar Generators, Spray-ers, Outfits, Cider and Vinegar Filters, etc.



Send for Catalog

THE HYDRAULIC PRESS MFG. CO.
60 Lincoln Avenue Mount Gilead, Ohio

Pacific Coast Representatives:
BERGER & CARTER CO., 504-506 Mission Street, San Francisco, California

Fairs, Apple Shows and Conventions

The Fifty-third Annual Oregon State Fair will be held at the fair grounds at Salem, September 28th to October 14th. The premium list, which has already been issued, is larger than ever before, with plenty of cash prizes for about everything a farmer produces. In fact the premium offers are so liberal that not only first and second cash prizes will be given but in many instances there are third, fourth and fifth prizes. This gives everyone a chance to win something. The Salem fair is rather a novel one on account of the beautiful grove in which the fair grounds are situated. The grounds provide ample and comfortable accommodations. Reasonable board can be secured in boarding houses and private families. In fact the Oregon State Annual Fair is a sort of picnic with the farmers, because everyone has a delightful time and the expense is small. Every farmer and fruitgrower in the State of Oregon should attend this fair.

The International Irrigation Congress will hold the Twenty-first International Session at Calgary, Alberta, October 5th to 9th. These meetings are always very interesting and instructive to a man who wants to learn something about the value of irrigation to America. Hundreds of thousands of acres of barren land and whole sections of countries are being made rich through irrigation.

California will hold the Fifth Annual Apple Show from October 1st to 11th, 1914, at Market and Eighth Streets, San Francisco, instead of at Watsonville. This is a splendid move because a much larger attendance can be secured, and the larger the attendance the better the apple show will be to the apple growers. Apple shows are certainly big factors in benefiting the fruit industry, and when held in large cities are instrumental in helping to increase a greater demand and larger consumption of apples. Every Californian should attend the California Apple Show. Those who live outside the state should arrange their trips to California, if possible, so as to attend the show. The feature exhibits are wonderfully attractive to everyone, whether interested in the fruit industry or not.

Washington State Fair.—Every year the State of Washington holds one of the most attractive fairs that is held anywhere in the Northwest. It will be held at North Yakima, in the heart of the wonderful Yakima Valley, the largest fruit-growing section of the Northwest, from September 21 to 27, 1914. Each year the exhibits of fruit are extremely attractive and the competition for valuable prizes is very keen. In addition to the fruit display, there will be a general display of all farm products. North Yakima is a

MARVELOUS

"K" Hand Power STUMP PULLER

(Hand machine sketched from photo.)

"K" is strongest Stump Puller known. Works like rowing boat. Krupp steel frame, hardened forged steel wearing parts; weight only 175 lbs. Weatherproof Engine cable (no chains to break). Cash or terms. Year guarantee.

If your stump can be pulled with inch steel cable "K" will do it. Man with "K" can pull 80 tons. U. S. Government use. "K" in Alaska. Good for all sorts of moving and pulling. Get special advertising low-price offer.

W. J. FITZPATRICK, Inc. "K"
1926 Second Ave. Seattle, Wash.

F. A. BISHOP, Secretary
HOOD RIVER ABSTRACT COMPANY
HOOD RIVER, OREGON
ABSTRACTS INSURANCE
CONVEYANCING

FIX YOUR ROOF

Send for this **FREE BOOKLET**
TELLS HOW TO DO IT EASILY AT SMALL EXPENSE

"KOTE-IT" a rubber-like patent for roofs, tin, paper or shingle, new or old, iron work, silos, tanks, posts, implements, etc.

APPLIED WITH A BRUSH
50⁺ GALLON DELIVERED IN QUANTITIES
Guaranteed for 5 years

STOP THE LEAK!
A.W. SMITH CHEMICAL CO.
OAKLAND—BOX 393 A-CAL.

LARGE HANDY **AXLE** **SMALL**

CAS **&** **CAN**

GREASE

WHITTIER COBURN CO. S.F. SOLE MFRS.

Harvey RACING Bolster Springs

Prevent damage to eggs, garden truck, fruits or live stock on road to market. Make any wagon a spring wagon. Soon save cost—produce brings higher prices—wagon lasts longer—horses benefited. Thousands in use. "My wagon rides like auto" says one user.

MADE LIKE FINEST AUTO SPRINGS

Same principle—same care—same high-quality steel to Harvey Bolster Springs as in finest automobile springs. In resiliency, durability and appearance they cannot possibly be excelled. The Standard Springs of America since 1859. Get a pair at your dealers. If not at dealer's write us. Insiston Harvey's. 40 sizes fit any wagon—sustain any load to 10,000 lbs. Catalog and full of proof free.

HARVEY SPRING CO., 784 17th Street, Racine, Wis.

GUARANTEED

THE PHILLIPS RAM

For Domestic Water Supply and Irrigation

Ask your dealer or write
PHILLIPS HYDRAULIC RAM CO.
Portland, Oregon

W. van Diem

Lange Franken Straat 45, 47, 49, 51, 61
ROTTERDAM, HOLLAND

European Receivers of American Fruits

Eldest and First-Class
House in this Branch

Cable Address: W. Vandiem
A B C Code used; 5th Edition

Our Specialties are
Apples, Pears, Navel Oranges

The Question of the Day

With the fruit grower is, how can he derive a revenue from his overripe and unsalable fruits?

It can be done. It is being done. How? By the use of the new and up-to-date process of

DEHYDRATING

Which is the cheapest, quickest and best process ever devised for preserving fruit without changing the taste or flavor; is clean and sanitary. There is always a market for this product. Can be operated by anyone. Capacity to meet all requirements.

For descriptive booklet address

Luther Vaku-Dehydrator Co.
SPOKANE, WASHINGTON

YOU CAN MAKE \$20.00 A DAY

AND JUST ONE MAN ON THE JOB WITH A KING OF THE WOODS DRAG SAW

Pushes itself up the steepest hill and over the roughest ground. One man writes he sawed 40 miles in 40 hours. Another sawed 60 cords in 9 hrs. Another sawed 80 cords in a day. Another writes his own claims will claim a size. THERE IS MORE YOU SHOULD KNOW. Write for testimonials and Catalog D-1

Reiseron Machinery Co.
Manufacturers, FORZLAND, OREGON.



Will the Blizzard last? Well, it looks that way

How long will a Blizzard Ensilage Cutter last? Nobody knows. Blizzards haven't been on the market long enough to wear out. Most of the Blizzards—the *original* blower cutters—built 12, 13, 14 years ago, are still going. James S. Wilson & Bro. of Paris, Ky., have a customer who has used a Blizzard fourteen years—without one penny repair cost. The

BLIZZARD Ensilage Cutter

is built to last. It is very simple. Little to get out of order or to cause repair cost. The parts that wear can be replaced at small cost. No other cutter so durable.

Big results with small power

A farmer's regular farm engine will run the Blizzard, handle the corn fast as the corn can be fed to the machine, and

hustle it to the top of any silo, no matter what its height is. Makes even-cut silage. Self feed table, takes the place of one man.



Come in, get a catalog and let's talk over the Blizzard

Buying an ensilage cutter is a mighty important thing. We've got some things to tell you about cutters that maybe you don't know.

MITCHELL, LEWIS & STAYER CO., Portland, Oregon

Please send me copy of Free Book—"WHY SILAGE PAYS."

My silo is feet high.

Name

Address

50c Free That's the cost of each copy of my copyrighted descriptive Catalog No. 6 of **Trees, Shrubs, Vines and Plants**

Write for a copy.

Mention this paper.

J. B. PILKINGTON, NURSEYMAN, PORTLAND, OREGON

Ridley, Houlding & Co.

COVENT GARDEN, LONDON

Points to remember when consigning apples to the London Market

- 1.—We Specialize in Apples
- 2.—All Consignments Receive our Personal Attention
- 3.—The Fruit is Sold by Private Treaty on its Merits

CABLE ADDRESS: BOTANIZING, LONDON

beautiful city, with splendid hotel accommodations and conveniences for all visitors. The people of North Yakima are known for their hospitality, therefore we feel justified in assuring everybody who attends this fair not only an interesting and instructive time but a very pleasant visit as well.

The Sixth National Apple Show will be held at Spokane from November 16 to 21, 1914. Spokane deserves credit for originating the first exclusive apple show ever held in the Northwest six years ago. The first show was a phenomenal success and the interest has been so great annually and the attendance so large, with so much of value to apple growers, that the Spokane business people, at considerable expense to themselves, have each year decided to continue the show which has now become a permanent annual event. Through a conference called by the National Apple Show of Spokane the North Pacific Fruit Distributors was organized. This year the apple show will endeavor to do something permanent for the by-product business in connection with the fruit industry. The committee appointed last year has accomplished a great deal in this line and are now prepared to present a general plan which they believe will meet with approval. This plan will assist the growers in taking care of the wastes, converting them into by-products and disposing of them. In addition to the wonderful exhibit which will be made, a splendid conference program is being arranged to discuss all of the important subjects in connection with the orchard industry. The Sixth National Apple Show of Spokane is one which deserves the earnest support of every fruitgrower in the Northwest. Every man who possibly can should make an exhibit and no grower in the Northwest should fail to attend.

The Manufacturers' and Land Products Show will be held in Portland, Oregon, from October 26th to November 11th, at the armory. Many fruit-growers and farmers will remember with much interest and pleasure the very successful Land Products Show held in Portland two years ago, which, notwithstanding the fact that the building was very unattractive, was a great success. This year the show will be held in the armory, which is a magnificent and spacious building and one especially suited for just such an exhibition as the Manufacturers' and Land Products Show intend to give. The show will comprise exhibits from all of the principal manufacturers of the Northwest and all kinds of products from the land. These shows are wonderfully interesting and extremely instructive, and in addition to this much pleasure is had by the visitor from the opportunity for personal contact with visitors from all parts of the country. The show will be held under the joint management of the Manufacturers' Association of Oregon and the Pacific

Northwest Land Products Show Association. A very able executive committee has been selected, Mr. David M. Dunne being president, who was formerly collector of reports, a man with splendid ability for just such a position, widely known and liked by all of his acquaintances. In addition to Mr. Dunne, the committee includes A. J. Kingsley, F. L. Thompson, John S. Beall and A. P. Bateham, with Louis W. Buckley as general manager. The very large list of directors includes prominent business men of the City of Portland. Every effort is being made to make this show a success and it should receive the support of the entire Northwest.

Packing Apples in Small Boxes for the English Trade

The Northwestern Fruit Exchange, through its London office, has been developing the possibilities and demand for Northwestern apples packed in small boxes. The best trade in London was canvassed with regard to the prospects for such a package in that market, but the general opinion is that such an experiment would not prove successful. The reasons given are: (1) That portion of the fruit trade in London which pays the highest prices is that which caters to the requirements of the West End clubs, hotels, etc. The preparation of this fruit is quite a special business and entails the use of a variety of packages of different shapes and sizes, according to the requirements of the clientele of any particular dealer. These fancy packages are made up with all kinds of fruit, the selection and packing taking place in the warehouse of the dealer. These dealers buy their apples and pears from us in the usual export cases and are prepared to pay the highest price for the best article. It is extremely unlikely that a small box such as has been suggested would be of any advantage to them over the bushel box, and if the latter worked out cheaper by comparison there would be very little demand for the small boxes. (2) Should the high-class trade be dull at any time, as it is on occasions, on account of the absence of the wealthy classes from town, we should be forced onto the ordinary trade and be compelled to accept prices which would not pay for the extra cost of packing. Although the above opinion is not a favorable one for the introduction of a small box, should it be decided to try the market with a few and thus gain practical experience a single-layer box, containing twelve apples, or possibly twenty-four, is suggested.

The European Fruit Crop

Reports from England received in July indicate that the fruit crop in that country would be about one-half a crop, owing to severe frosts which occurred during the month of May. France is a heavy producer of cherries, and during the year 1911 shipped more cherries than in any previous year for

Yakima County Horticultural Union

E. E. SAMSON, Manager
North Yakima, Washington

INDEPENDENT SHIPPERS

OF

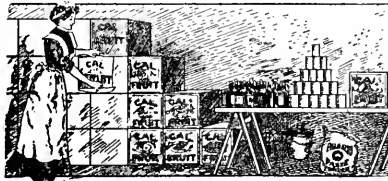
Straight and Mixed Cars Yakima Fruits

CONSISTING OF

Peaches, Pears, Apples, Plums and Prunes

WRITE OR WIRE US TODAY

Paste for Labeling—"Palo Alto" Paste Powder



added to cold water, instantly makes a beautiful, smooth, white paste. Ready for immediate use at a cost of ten cents a gallon. No labor. No muss. No spoiled paste.

Paste Specialists

Robinson Chemical Works
349-351 Eighth Street
San Francisco, California

GO EAST TO NOW VIA

Oregon-Washington Railroad & Navigation Co. O. S. L.—U. P. LOW ROUND TRIP FARES

Tickets on sale every day to September 30. Final return limit, October 31, 1914. Liberal stop-over privileges.

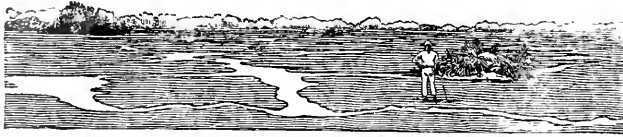
Superior service, unexcelled dining and sleeping car accommodations, through trains, direct routes, automatic block signals, every requisite for safety and comfort.

Visit Yellowstone National Park on your way East. Through sleeping car service to and from Southern entrance to the park.

For full information, fares, routes, train schedules, etc., call upon any agent of the

O-W-R. & N.





Man cannot make a waterproofer that equals asphalt made by Nature

We have tested all waterproofing materials during our thirty-five years' experience in the use of natural asphalt, and find that no man-made substitutes are permanent—they dry-out, crack and leak. The one absolute and lasting waterproofer is *natural asphalt*; and we use Trinidad Lake asphalt to make

Genasco
THE TRINIDAD-LAKE-ASPHALT
Ready Roofing

It is full of life; it gives lasting resistance to sun, rain, snow, wind, heat, cold, and fire. It is roofing of remarkable endurance and economy.

Get Genasco of your dealer—smooth or mineral surface; several weights. The KANT-LEAK KLEET method is the improved way to apply roofing—does away with cement and prevents nail-leaks. Write us for samples and the Good Roof Guide Book, free.

The Barber Asphalt Paving Company

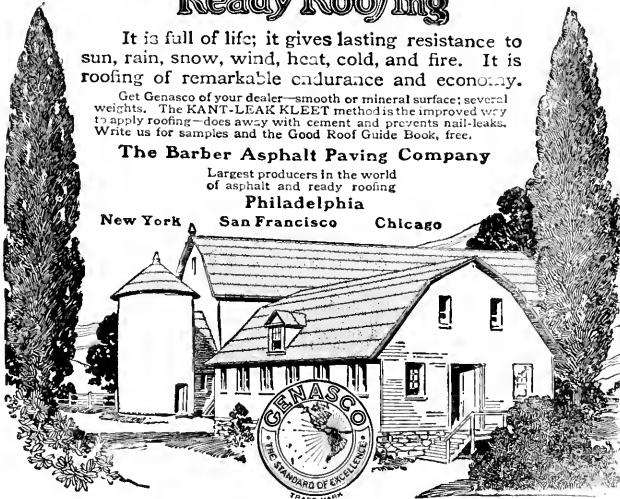
Largest producers in the world of asphalt and ready roofing

Philadelphia

New York

San Francisco

Chicago



ten years. France also grows some very fine pears and peaches. Many small orchardists make a specialty of producing fine quality fruit in a limited way. The fruit trees are frequently trained along the side of a building, perfectly cared for and thinned so that each fruit becomes very large. Some French cantaloupe growers suspend the melons from the ground and in this way produce a perfect melon over the entire surface. These high-class individual fruits are sold by many fruiterers at high figures.

"Better Fruit" Directory

The original plan of "Better Fruit" in reference to advertising was to make the advertising columns, as far possible, a directory for the fruitgrower for everything which he uses in his business, and as many things as possible which he consumes. We have stuck to this principle consistently, and in every edition of "Better Fruit," in advance of the season and during the season for which the articles are required for different features in the orchard business, we aim to secure, and generally have secured, advertising from manufacturers advertising the very best articles for the fruitgrowers. We also aim to acquaint the fruitgrower with the principal dealers engaged in the fruit industry throughout the United States, and to some extent we have secured advertising from first-class fruit dealers. It is with considerable pleasure we refer our readers to the advertising columns of "Better Fruit" as being a directory for them in their line of work. While it may seem like bragging, we think "Better Fruit" affords one of the best directories for the fruit-grower that has ever been published.

The seventh edition of Professor E. J. Wicksen's book entitled "California Fruits" has just been placed on the market. It is one of the best publications in existence in reference to the production of fruit; a very valuable book and one which every fruit grower should possess. Professor Wicksen has for many years been director of the experiment station at the University of California and is a man of national reputation. This book is published by the Pacific Rural Press, San Francisco.

Mr. Edison C. Mcerritt, manager of the Sebastapol Apple Growers' Union, Sebastapol, California, called at "Better Fruit" office recently. He stated that his association would ship about 500 cars of apples this year.

Almost the whole world knows of Hood River as a place that produces the best fruits, and all of Hood River Valley should know, and could know, that there is one place in Hood River, under the firm name of R. B. Bragg & Co., where the people can depend on getting most reliable dry goods, clothing, shoes and groceries at the most reasonable prices that are possible. Try it.

[Advertisement]

RHODES DOUBLE CUT PRUNING SHEAR

Pat'd June 2, 1903.

RHODES MFG. CO.,
520 S. DIVISION AVE., GRAND RAPIDS, MICH.

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

PORTLAND, OREGON

PORTLAND HOTEL

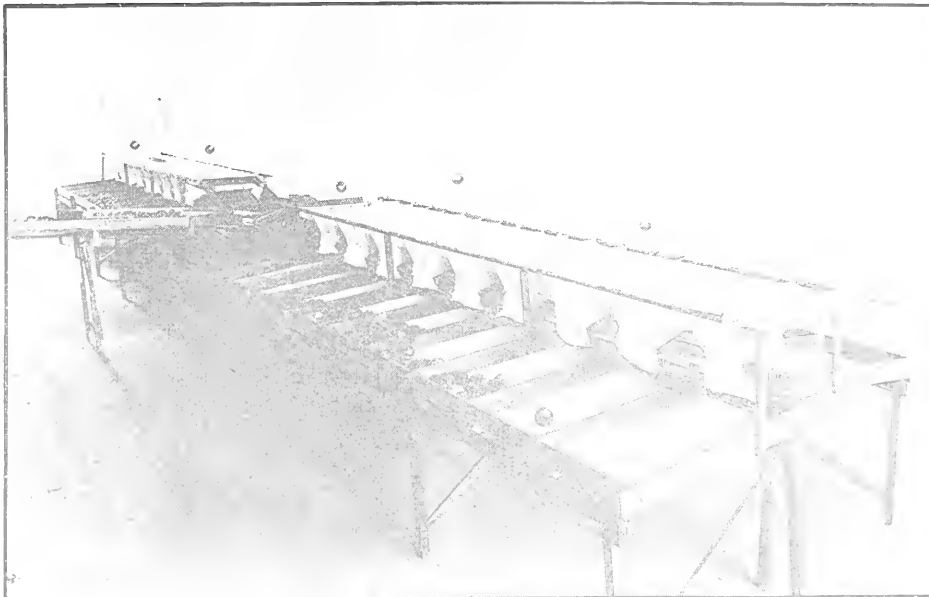
The hotel which made Portland, Oregon, famous
Most Desirably Located. In the Center of Shopping and Theatre District
Covers a City Block

Broadway, Sixth, Morrison and Yamhill Streets

EUROPEAN PLAN—\$1.00 per day and upward

Write for Portland Hotel Booklet **G. J. Kaufmann, Manager**

Made in 4 sizes, with capacities ranging from 350 to 2,000 boxes per day, with price to meet every need.



OUR MOTTO—To reduce the cost of putting fruit in the box, so that even a child could do the work and obtain the perfect pack.

This machine will save you from three to five cents on every box you pack. Sizes your apples into the 20 Northwest standard packs. We furnish a system of packing cards that will enable you, with our machine, to make a packer out of an inexperienced person in one hour.

We size the fruit by weight, which is the only scientific and correct way. It makes no difference to this machine if the fruit is flat, oblong, round or square. It is extremely simple in construction and design, nothing to get out of order, and no mechanic necessary on the job to look after it. Our grading table is so arranged that one or six men can be used; after the fruit is emptied on the table, the sorter never picks it up again; he simply judges the color and grade, and it passes down to the sizer and is packed up automatically and delivered to the packing bins. One man, on our grading table, can do the work of three to five in the old way, and do it better.

One grower said his crop run 45% one size from a box of his own pack. In size, we got 7 sizes, ranging from 96 to 161, after the demonstration his expression was: "I see some light." No other machine on the market can duplicate the work it does. Read the following letters, which speak louder than pages of advertising can:

Price Fruit Sizer Co., North Yakima, Wash.

Dear Sir:—Since installing the four size fruit sizing machines and roof of you we have had no time to give them a thorough trial. We have run 16,000 boxes of apples in only two days and the work is perfect and well suited to the trade. We have used these sizers in our own orchards on our entire satisfaction. As to cost, we find that they will size 1750 boxes of Elberta in the same amount of time as using the old sizers. We have reduced the amount of our bins on the floor of packing house and have reduced the price of our packs approximately 10% and the packers are making as much money as they made before.

In the future our packing house will be equipped with Price Fruit Sizing Machines, to the full of the requirement. Yours respectfully, Thompson Fruit Co.

Price Fruit Sizer Co., North Yakima, Wash.

Dear Sir:—From the time we received your machine in operation we were sure our trial of the product of your decisions fruit, although we had not seen it before. We knew we were getting original. After our trial we are sure we cannot be so thoroughly satisfied that we can find any other machine. The grading and packing of apples. A. W. Price, Price Fruit & Produce Company.

PRICE FRUIT SIZER COMPANY

Designers and Manufacturers of Throwing Machines for Sizing and Sorting Apples, other Fruits, Vegetables and Nuts

Works and General Sales Office, North Yakima, Washington, P.O. Box 931, Office No. 1 North Second Street

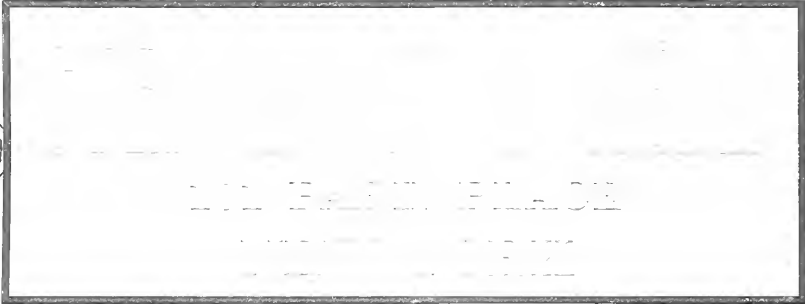
W. G. PRICE, President.

W. K. PRICE, Manager Works.

J. W. LAVIGNE, Sales Manager.

THE WORLD

OUR ORCHARD



Unquestionably the most
important factors in the
Fruit Industry of
the United
States



OUR MARKET

THE WORLD

BETTER FRUIT

VOLUME IX

OCTOBER, 1914

NUMBER 4



HARVESTING THE GREAT NORTHWESTERN BOX APPLE CROP
Picking Scene in Walla Walla Valley

BETTER FRUIT PUBLISHING COMPANY, PUBLISHERS, HOOD RIVER, OREGON

Subscription \$1.00 per Year in the United States; Canada and Foreign, Including Postage, \$1.50

Single Copy 10 Cents

The Palmer Fruit Grader and Sizer

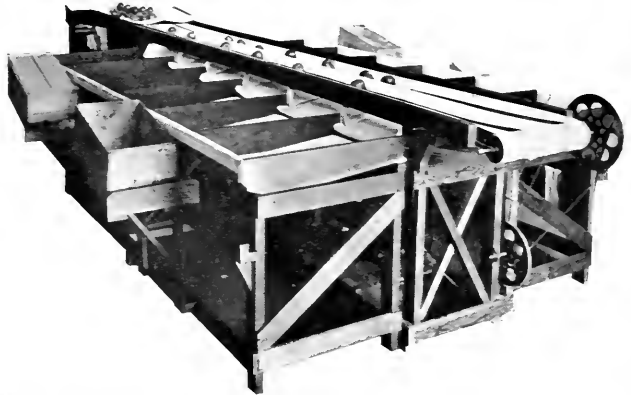
Price \$125, f.o.b. Hood River

Including packing tables, all complete, except Electric Motor, which will be furnished for \$15.00 extra

Makes two grades at the same time. Makes six divisions in sizes, which has been found by experienced orchardists and packers handling large crops to be absolutely the most practical number in division of sizes for efficient, rapid and economical packing.

Grades and sizes all kinds of fruit of all shapes and sizes—

Apples Pears Peaches, Etc.



Grades and sizes, absolutely uniform results.

Can be adjusted at two points, so the bins will fill evenly, whether fruit runs to large or small sizes. The Palmer Grader and Sizer is the only machine so far as we know having this extremely important feature.

The construction is simple, a boy can operate it and keep it in order.

Small and compact. The Grader and Sizer, with packing tables set up ready for operation, including space for graders and packers, occupies floor space 11x18 feet. Can be easily moved through a door 2½ feet wide.

Sorts to sizes, so packers of limited experience can do good work. Increases the efficiency of packers 30% to 50%.

Will save in grading, sizing and packing from 3 to 10 cents per box. A grower with 2,000 boxes of fruit can more than save the cost of a Palmer Grader and Sizer in one season by using one, and do his work quicker and better.

Capacity 1,000 boxes per day

Send for further particulars and descriptive literature.

Will make arrangements for exclusive territory with dealers or agents.

Address

PALMER BUCKET CO., Hood River, Oregon

A Money and Fruit Saver



Ready to Empty

A Higher Standard Better Fruit

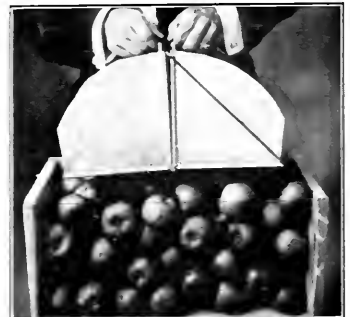
Successful orchardists of the Northwest are using the Palmer Bucket, because it prevents the bruising and saves time and money in emptying the buckets in field boxes.

Ask your dealer to show you how the bucket is operated—or send \$1.00 and we will forward one by express.

Special prices on quantities of one dozen or more.

Will make arrangements for exclusive territory with dealers or agents.

Address



Emptying

PALMER BUCKET CO., Hood River, Oregon

EXCLUSIVE TERRITORY



SOLUBLE SULPHUR COMPOUND

THE SULPHUR SPRAY PERFECTED

MANUFACTURED IN SEATTLE UNDER NIAGARA SPRAYER CO. PATENTS

Beware of Inferior Substitutes put up under deceptive labels and in similar packages

THIS LABEL ONLY IS USED ON THE PACIFIC COAST. ONLY ONE FACTORY—SEATTLE—WEST OF ROCKY MOUNTAINS



UNDER THIS LABEL ONLY IS SOLD THE GUARANTEED PRODUCT (NIAGARA) SOLUBLE SULPHUR COMPOUND

ONCE IT WAS SAID, even by chemists, that it was impossible to make a clear lime and sulphur solution. Niagara Lime-Sulphur Solution was the answer. First made on the Pacific Coast in Portland, it soon became known all over America. Out of that work, and by the same progressive efforts, has been produced the improved form of sulphur spray known as Soluble Sulphur Compound. This is another impossibility turned to the greatest success.

Much misinformation has been dispensed concerning the composition of Soluble Sulphur Compound. The following analysis is made by a national authority in his profession, Dr. H. G. Byers, of the University of Washington:

Sulphur freed by acids.....	51.4%
TOTAL SULPHUR	62.1%
SULPHUR AS POLLYSULPHIDE.....	42.3%

Sulphur as Thiosulphate.....	19.4%
Sulphur as Sulphate.....	0.4%
Sodium	22.1%
Ash	0.05%
Moisture	0.02%
Carbon Dioxide	0.0
Alkalinity equivalent to one gram of spray material, expressed in milligrams of acid.....	0.3082%

THERE IS ABSOLUTELY NO FREE ALKALI.

Note the high percentage of POLLYSULPHIDE sulphur—the most valuable constituent of a sulphur spray.

Soluble Sulphur is not a caustic soda preparation. The above analysis shows what it is.

Three years of successful work, during which time thousands of tons have been used, sufficiently proves its value.

Write for circulars and spraying instructions.

We supply the **BEST SPRAY**—You must spray in the **BEST WAY** and at the **RIGHT TIME** to succeed.

PORTLAND

THE CHAS. H. LILLY CO.

SEATTLE

Arcadia Irrigated Orchards

The largest and most successful orchard project in the entire West

7,000 acres planted to winter apples. Gravity irrigation. Located 22 miles north of Spokane, Washington, directly on the railroad. We plant and give four years' care to every orchard tract sold. \$125, first payment, secures 5 acres; \$250, first payment, secures 10 acres; balance monthly.

Send for booklet

Arcadia Orchards Company

Deer Park, Washington



When you get to Hood River stop at the

Mt. Hood Hotel

Occupying one-half block With a new brick annex

ROOMS SINGLE OR EN SUITE TWENTY ROOMS WITH BATH SPECIAL RATES TO FAMILIES

Trains stop daily in front of the Hotel Bus meets all boats

HOOD RIVER VALLEY NURSERY COMPANY

Phone 5634 Route No. 3, Box 227 HOOD RIVER, OREGON

Plantation four miles southwest of station, Belmont Road. We will be pleased to show you trees, apple trees that have a heritage, a quality that should be considered by everyone who plants a tree. Our trees are grown in clean hillside virgin red soil with clay subsoil, producing the most vigorous root system. Our buds are selected from the best bearing healthy Hood River trees that make the Hood River apple famous throughout the world. Our trees will give you satisfactory results in vigor, fruit and quality. Ask for catalog. We guarantee our products. Apples, pears, peaches, apricots, almonds and walnuts. A complete line of the best varieties of all kinds of fruits.

H. S. BUTTERFIELD, President

W. J. ENSCHEDE, Manager

SIMONS, SHUTTLEWORTH & CO., Liverpool and Manchester
 SIMONS, JACOBS & CO., Glasgow GARCIA, JACOBS & CO., London
 J. H. LUTTEN & SON, Hamburg
 Agencies and Representatives in Every Important European Market

European Receivers of American Fruits

FOR MARKET INFORMATION ADDRESS

Simons, Shuttleworth & French Co.
 204 Franklin Street, New York

Ira B. Solomon
 Canning, N. S.

Simons Fruit Co.
 Toronto and Montreal

Simons, Shuttleworth & Webbing Co.
 46 Clinton Street, Boston

OUR SPECIALTIES ARE APPLES AND PEARS

IF YOU WANT TO MARKET
 YOUR

FRUIT

RIGHT

ALWAYS SHIP TO

W. B. Glafke Co.

**WHOLESALE FRUITS
 AND PRODUCE**

108-110 Front Street
 PORTLAND, OREGON

W. H. DRYER

W. W. BOLLAM

DRYER, BOLLAM & CO.

**GENERAL
 COMMISSION MERCHANTS**

128 FRONT STREET

PHONES: MAIN 2348
 A 2348

PORTLAND, OREGON

LEVY & SPIEGL

WHOLESALE

FRUITS AND PRODUCE
 Commission Merchants

SOLICIT YOUR CONSIGNMENTS
 Top Prices and Prompt Returns
 PORTLAND, OREGON

STORAGE

Ship your Furniture
 to us to be stored
 until you are located

TRANSFER & LIVERY CO.
 Hood River, Oregon

The Old Reliable

BELL & CO.

Incorporated

WHOLESALE

Fruits and Produce

112-114 Front Street
 PORTLAND, OREGON

Richey & Gilbert Co.

H. M. GILBERT, *President and Manager*

Growers and Shippers of

**YAKIMA VALLEY FRUITS
 AND PRODUCE**

Specialties: Apples, Peaches,
 Pears and Cantaloupes

TOPPENISH, WASHINGTON



Stop at "The Oregon," Hood River
 Clean Rooms—Excellent Meals—One block from depot

Mark Levy & Co.

COMMISSION
 MERCHANTS

Wholesale Fruits

121-123 FRONT AND
 200 WASHINGTON ST.

PORTLAND, OREGON

A PANORAMIC VIEW

of the
 Famous Hood River Valley
 showing

13,000 acres of apple orchards,
 Mount Hood, Mount Adams and
 the Columbia River Gorge.

40 inches long Price \$1.00

SLOCUM & CANFIELD'S BOOK AND ART. STORE
 Hood River, Oregon

W. F. LARAWAY

DOCTOR OF OPHTHALMOLOGY

EYES TESTED  LENSES GROUND

Over 30 Years' Experience

Telescopes, Field Glasses
 Magnifiers to examine scale

Hood River Oregon and Glenwood Iowa

LESLIE BUTLER, President
 TRUMAN BUTLER, Vice President
 C. H. VAUGHAN, Cashier

Established 1900

Butler Banking Company

HOOD RIVER, OREGON

Capital \$100,000

4% interest paid in our Savings Department

We give special attention to good Farm Loans

If you have money to loan we will find you good real estate security, or if you want to borrow we can place your application in good hands, and we make no charge for this service.

THE OLDEST BANK IN HOOD RIVER VALLEY

The First National Bank

Hood River, Oregon

Capital and Surplus
 \$135,000

4% Interest Paid on Savings
 and Term Deposits

F. S. STANLEY, President
 E. O. BLANCHARD, Cashier

LADD & TILTON BANK

Established 1859

Oldest Bank on the Pacific Coast

PORTLAND, OREGON

Capital \$1,000,000.00
 Surplus 1,000,000.00

Officers

W. M. Ladd, President
 Edward Cookingham, Vice President
 W. H. Dunckley, Cashier

R. S. Howard, Jr., Assistant Cashier
 J. W. Ladd, Assistant Cashier
 Walter M. Cook, Assistant Cashier

INTEREST PAID ON TIME DEPOSITS AND SAVINGS ACCOUNTS

Accounts of banks, firms, corporations and individuals solicited. Travelers' checks for sale, and drafts issued available in all countries of Europe.

Through
 Service



Thorough
 Service

The accommodations given and treatment accorded our patrons are pleasing to them and appreciated by them. Ask them. Try the service and be convinced.

Have Your Ticket Read Northern Pacific Railway

Two daily through trains to Minneapolis, St. Paul, Chicago.
 One daily to Kansas City and St. Louis. Like service West-bound. Our famous Dining Service on all trains.

Westbound Colonist Fares

Effective from the East September 24 to October 8.

Write for Fares and full information.

A. D. CHARLTON, A. G. P. A., Portland, Oregon

“WE STARTED RIGHT
 AND WE ARE RIGHT”

6458 Acres

IN OUR ENTERPRISE

4178 Acres

ALL IN APPLES

Nine miles continuous rows of trees, the largest apple orchard ever planted.

All are one, two and three years old; the two and three year old all sold, amounting to over 3,000 acres.

We are now offering our one year at terms to suit you.

We give five years' from date of planting, free care. Our company is unlike others in the feature of staying with our purchasers after the free care period. Our plans make our interests mutual; we all work together for the interest of all.

Our Booklet will give you a simple statement of our dealings and methods. Write us for information.

DUFUR ORCHARD COMPANY

Northwestern Bank Building
 Portland, Oregon

The Tires Men Want

You'll Be Glad When You Get Them

You don't know what you miss—you men who are buying other than Goodyear tires.

All this sturdiness, this safety, this trouble-saving—you are bound to demand it sometime. Why not in the next tire that you buy?

How They Excel

It is evident that Goodyear tires excel. They hold top place in Tiredom—outsell any other. And none but the best tire built could do that, after millions have been used.

Their advantages are these:

The No-Rim-Cut feature—which we control—makes rim-cutting impossible. Tires which rim-cut mean enormous waste.

Our "On-Air" cure—used by us alone—ends a major cause of blow-outs. This one exclusive process costs us \$450,000 per year.

Our rubber rivets—formed by a patent method—reduce by 60 per cent the risk of tread separation.

Our All-Weather tread—used on Goodyears alone—is a matchless anti-skid. It is tough, double-thick and enduring. It is flat and regular, so it runs like a plain tread. It grasps wet roads with deep, sharp, resistless grips. No wheel should be without it.

Say That You Want Them

Say to your dealer that you want Goodyear tires and you'll get them. Then your major tire troubles will be wiped out or minimized. Hundreds of thousands have proved this, and have adopted this Goodyear tire. You'll be glad when we get you to join them.

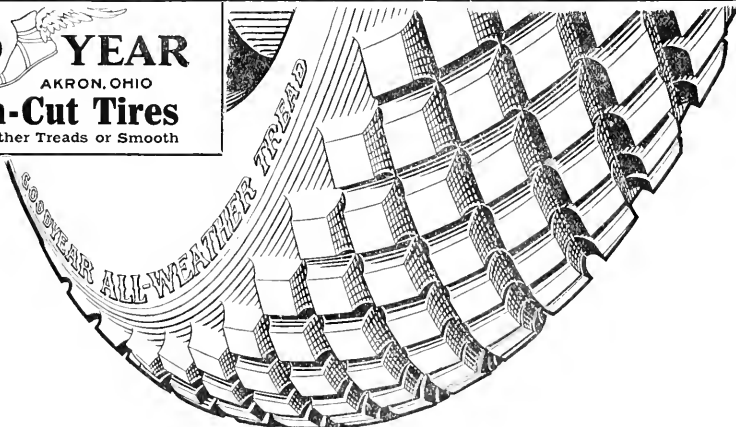
The Goodyear Tire & Rubber Company, Akron, Ohio

Toronto, Canada
Branches and Agencies in 103 Principal Cities.

London, England
Dealers Everywhere.

Mexico City, Mexico
Write Us on Anything you Want in Rubber

GOOD YEAR
AKRON, OHIO
No-Rim-Cut Tires
With All-Weather Treads or Smooth



BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

Pollination of Plants

By Dr. A. J. Cooke, State Commissioner of Horticulture, Sacramento, California

YOU will each and all recall the mechanism of a flower in its best development. As you know, each part of the floral envelope is a modified leaf. The close student often sees positive proof of this in a petal that is also at the same time a stamen. A double flower results from a reversion of stamens in a multilaminate flower like the rose back to petals. The outer circle of floral leaves—the sepals—are still leaflike as they usually retain the green color of the normal leaves. These sepals, except as they enfold and protect the bud, function solely as leaves. The next whirl of the floral envelope just within the calyx forms the corolla, which is made up of three or more variously colored leaves known as petals. These are what give beauty to the flower and are of real service to it in attracting insects to the important work of pollinating the flower, which is our theme at this time. Often the flower is very irregular, the separate petals varying greatly in form. This peculiar conformation, as Darwin explained years ago, has directly to do with pollination and so interests us greatly in this discussion.

Within the corolla are the stamens, the male equipment of the flower. These may be the same number as the petals when they are opposite or alternate with them. There may be a great number, as in most rosaceous flowers. Each stamen has a stem-like stalk, often thread-like, hence called the filament, and a head known as the anther. The anther bears the male element, the pollen, a fine dust of varying color, though more frequently yellow. Each pollen grain is a cell and corresponds to the sperm cell in animals. In the very axis of the flower we find the pistil, usually only one but sometimes as many as there are petals, and rarely, as in the strawberry, many. The pistil is the female organ of the flower. Its bulbous base is known as the ovary, which bears a slender appendage, the style. The latter is tipped with an unctuous enlargement known as the stigma. In the ovary grows the ovules, the plant eggs if we may so speak—the female elements of the plant. Like the pollen grain and the egg, these are cells which, when fecundated by the pollen grain, develop into the seeds. The sticky unctuous stigma captures and holds the pollen grains. From each pollen grain there develops a thread which pushes down the entire length of the style and enters an ovule. This is fecundation and is absolutely necessary to the formation of a seed. The

seed is the partially developed plant—an embryo—and as the animal egg cannot develop without the sperm cell, no more can this ovule or plant egg without the presence of this pollen thread. We thus see that no fecundation, or in other words no pollination, is the equivalent of no seeding, usually no fruitfulness.

Many plants are dioecous; that is, each flower is either male or female, not both. Of such are the oak, the walnut and some varieties of strawberries. In some cases, as the pepper tree, the sexes are on different trees or plants.

plants at another time be self-sterile. It is also interesting to note that the pollen of some varieties is more potent than others of the same species. Thus among cherries the Black Republican, Black Tartarian and seedlings are found, in some sections at least, to be strong pollinizers. The same may be said of Drake's seedling among almonds. The experiments of the Oregon station show that the Bing, Lambert and Napoleon (Royal Ann) are inter-sterile. Of course in our planting it would be most convenient to set varieties in solid blocks, but it would not be wise or scientific. We should always mix varieties, being careful to select varieties that bloom at the same time, also to secure those that are inter-fertile. Suppose the Bing or the Lambert or the Napoleon are thought to be the most profitable varieties, then a few sour cherries, or Black Tartarian or other efficient pollinizers, should be sparingly intermingled with the more desirable varieties. The same is true of our almonds. If we wish the Ne Plus Ultra and the IXL, we may well mix liberally here, as the Drake's seedling is a very desirable variety, for it has been found to be an efficient pollinizer. Very likely locality is important in this matter, and it is wise in planting to note what varieties are desirable for market and at the same time are inter-fertile each with the other in each locality. At present we are not sufficiently informed as to the potency of pollen from the several varieties of our fruit, but we know enough to make us sure that it is wise in all cases to mix varieties, and it may be wise in some cases to plant sparingly of undesirable varieties to make sure that we provide for efficient pollination.

From what we have seen above we know that efficient agents in this work of pollination must be good flyers, must desire and seek often the nectar of flowers and must be very numerous, as the flowers to be pollinated are multitudinous. In such flowers as the strawberry each blossom has several ovules to pollinate, and if any are missed the berry may be deformed. Of course all free-flying, sweet-loving insects are valuable to the horticulturist or agriculturist as collaborators in the pollination end of seed and crop production. All bees, honey, bumble and other wild bees, most if not all wasps, ants though handicapped by the absence of wings, many moths and most butterflies, such diptera as syrphus flies, nectar-loving beetles and not a few homoptera aid in this work of pollination.

Features of this Issue

- POLLINATION OF PLANTS
- FUNDAMENTAL PRINCIPLES OF CO-OPERATION IN AGRICULTURE
- UNFERMENTED APPLE JUICE
- PREVENTION OF WOOD DECAY IN FRUIT TREES
- CORRECT COST OF ORCHARD MANAGEMENT
- CONDITIONS AFFECTING BLIGHT AND THEIR CONTROL
- THE EVOLUTION OF THE CIDER INDUSTRY
- TIME TABLE FOR GIRLS WHO PRACTICE CANNING

In all such cases of course, even though a flower is fertile to the pollen of its own species, there must be marriage priests, as Darwin styled the bees, to carry the pollen from flower to flower or from tree to tree. In rare cases, as in some varieties of strawberries, all the plants are pistilate. Here pollen must be brought to them from other staminate plants.

In many monocious plants where the flowers are perfect with both stamens and pistil in the same flower, the flowers are infertile, or will fail to fruit, or at least to produce seed unless cross-pollinated. We say such flowers are self-sterile, or sterile to their own pollen. Our clovers and many, probably most, of our fruits are of this class. Most irregular flowers are so formed as to require cross-pollination. The very conformation of the flowers prohibit self-pollination and insure cross-pollination through the visits of nectar-loving insects. Often plants like the Bartlett pear are self-sterile in one locality and fertile to their own pollen in another. I have reason to believe also that plants may at one time be self-fertile and the same

In purely natural conditions there is a pretty safe balance, so that this service is provided for. The native insects suffice to pollinate the wild flowers of plain and forest. In our alfalfa fields and great orchards we have so massed the plants that the native insects are all powerless to perform this necessary function. Australia had no bumble bees and red clover would not seed until the bumble bees were introduced. The long flower tube placed the nectar beyond the reach of most insects. Even in Europe and America bumble bees are very scarce in the early season, and so we depend on the second crop for seed. Our alfalfa blooms are worked on by honey bees, and so any crop is fruitful of seed if honey bees are present in great numbers, but here the bloom is like the sands of the sea, and this is why we need the apiary close by the alfalfa field if we are to produce seed. It is usually wise to save the second, third or fourth crop for seed, not only to escape damaging rains but also that we may be sure that swarms of bees may properly pollinate the bloom. What a wealth of bloom of beauty crowns the orchard trees as they fling out their signal cry to all passing insects to come and dine and extend to them a life-saving service. How often our fruit trees bloom full only to set no fruit. No pollination, no fruit; no bees, practically no pollination. We see then that we must not only mix our varieties wisely, but we must secure bees in the near precincts of our orchards if we would secure large and profitable crops. As we have seen, generous cross-pollination is not only required for full crops, but perfect fruit often requires the same inter-pollination in field, garden and orchard.

We have a strange abnormality in the navel orange. The stamens produce no pollen; the fruit bears no seeds. Did the secondary orange which results in the navel estop the pollen thread in its way to the ovule and thus cause seedlessness? In this case, why does the tree still fruit? Occasionally other citrus trees exhibit the same behavior and a few vegetables are known to fruit without seeding. In these cases absence of pollination doubtless explains absence of seeds, but why the exceptional result of fruiting is yet to me at least a real puzzle.

As bees are the friends of the fruit-grower and of the rancher in general, we should foster their presence and well being at or close by the ranch. This as well as the best success in spraying for the codling moth will preclude spraying for this insect until the blossoms (petals) of apple, pear and quince fall from the tree. This is the proper time, and earlier spraying often kills not only the adult bees but also the brood. We all ought to adopt the motto, "Never spray our orchards with arsenites until the blossoms fall," and preach this to all our neighbors. We must remember that bees are the good and necessary friends to the successful pomologist. We should also remember that bees never injure sound fruit, but

are fond of ripe fruit and are quick to attack it when other insect, bird or weather wounds it.

A word regarding pear blight. It is quite certain that fireblight and twig blight of pome fruits are spread rapidly by insects, and bees of course aid in this dispersion. We have all observed how rapidly pome blight spreads at the season of bloom in pear, apple and quince orchards. That bees are the most numerous visitors of the flowers at this time is of course true. That the germs of the disease are thick in the nectar is also unquestioned. Yet other insects are just as able to carry the blight germs as are bees, and are sufficiently abundant to do most serious harm. If the bees were removed, the blight would spread very likely as rapidly and work as fatally as with the bees swarming on the bloom. Other insects abound sufficiently to spread the blight, but not in numbers requisite for proper pollination of the bloom or full production of fruit.

In years like the present we shall always find it necessary to fight this insidious bacterial disease in case it is

present in our neighborhood. The great and effective cure is very thorough pruning, so thorough that every vestige of the diseased tissue is removed from twigs, branches, trunk and roots, and we must be equally insistent that after each cutting, chisel, knife or shears is thoroughly disinfected by use of a one-to-one-thousand solution of corrosive sublimate — bichloride of mercury.

Co-operation of Ozark Fruit Growers

The satisfaction of the fruit growers in co-operation is evidenced by the fact that in 1912 the Ozark Fruit Growers' Association of Monett, Missouri, handled fruit from twenty-seven different loading stations and increased to forty-seven stations in 1913.

Blight in some districts of the Northwest has been rather more serious this year than in the past, while in other districts no cases of blight have been reported. In the districts where blight is prevalent an aggressive campaign has been organized for the purpose of controlling the disease.

Correct Cost of Orchard Management

Office of Information, United States Department of Agriculture

WHAT does it cost to run an orchard? Plan of cost accounting for apple-orchard operation for fruit-growers wishing to find out the annual cost of managing an orchard has been outlined by the United States Department of Agriculture. The method presented is the result of records covering nineteen years' work in several New York orchards. The bulletin gives details for two years' work on one of these orchards. The method is applicable to all similar operations. The orchard for which the details are given is over fifty years old and well located for the production of fruit. It consists of nearly fifteen acres and contains 527 trees. The total annual cost of the operation of the orchard during the two years covered by the detailed studies was divided into labor, cash and fixed costs. Nine hundred and thirty-seven marketable barrels of apples were produced the first season for a total operating cost of \$1,217.92. Two thousand one hundred and four barrels were produced the second year at a total expense of \$2,125.69. In the table given below, the labor costs refer to the man and horse labor; the cash costs cover the expense of manure, spraying, barrels and seed for cover crop; the fixed costs included the use of machinery, land rental and overhead expenses. The distribution of costs in the orchard during the two years was as given in Table I.

Two elements of cost have not been measured in these estimates, namely, the cost of creating the orchard and the depreciation of the orchard as its production declines as the result of advancing age. The presence of insect pests and fungous diseases and the thoroughness of their control also will have their influence on the life of the

orchard. The two years' study on the farm in question have not yielded sufficient data on this particular item to warrant definite conclusions. All apple growers, therefore, should bear this factor in mind. The item included under "fixed" costs should vary little from year to year. The land rental, including interest and taxes, is about six per cent. For this particular orchard it will be noted that the fixed costs approximate twenty dollars a year per acre. The details of the items of cash costs are as shown in Table II.

The cost of growing apples is lessened by growing them in connection with other farm crops and utilizing the man and horse labor on these other crops when they are not needed in the orchard. The experiences of the best apple growers in old apple-producing regions indicate that proper management of a well-diversified farm is as important a factor in profitable apple raising as the use of different cultural methods, reduction of packing cost, or even cheaper wages for help.

The farm in question consists of 122 acres. Fifty per cent of this area is devoted to general crops other than fruit, and of the 39 acres devoted to fruit only about 15 are used for apple raising. Enough hay, oats and corn are raised on the farm for feed. Potatoes are raised, but only for home use. Wheat and beans, as well as the fruit, are cash crops. Each year twenty or thirty sheep are kept and pastured during the summer. Lambs are raised and fattened during the early spring months. Six horses are kept for work and one for family use. One or two colts are raised each year.

The actual costs given are not the most important result of this study, as

other farms in the same community might show quite different results. The method of analyzing the various cost factors is the feature that is of most practical value. The Department's new publication aims to outline for the independent apple grower a method that will enable him to determine the actual cost of maintaining and operating his fruit enterprise on his own farm. It does not attempt to give a concrete ex-

ample of just what the costs will be. Beside the fact of the depreciation of the apple orchard already mentioned, other factors such as the variety, age and size of trees, the soils and the climate will influence the actual costs, but not the method of analyzing these costs. Apple growers will find much to interest them in the new publication which is being sent free of charge to such persons as apply for it.

(d) Pruning Tools, etc.—It has been demonstrated repeatedly that if we cut an active case of blight and then cut through a healthy limb, the latter may become infected. The percentage of such cuts that will result in new infections is much higher in summer than winter.

(e) Bloom—Repeatedly we have seen hundreds of cases of blight in a single tree from blossom inoculations. Also we have seen trees that failed to bloom almost free, while their neighbors that had blossomed showed many infections. Varieties that bloom early sometimes escape blossom infection, because the blossoms have fallen before the insects had had a chance to visit any of the bacterial exudate from the "holdover" cases, which sometimes do not give forth this liquid until an unusually warm day.

(f) Water Sprouts or Suckers—These are very tender and more liable to attack than slow-growing twigs. When growing around the base of the tree or upon large limbs, they often bring about the death of the tree by giving the blight a start near a vital region.

(g) Crown-gall—It has been observed repeatedly that galls are readily attacked by blight and trees thus attacked are badly damaged or entirely killed.

(h) Susceptibility of the Tree to Inoculation—It is a fact well known to plant pathologists that we inoculate a tree by wounding the bark and inserting virulent blight bacilli, or by putting them inside freshly-opened flowers, the disease will sometimes follow and sometimes not. Briefly, we may mention that some varieties are easier to inoculate successfully than others and that in a susceptible variety the disease is more readily produced in summer than in winter, in hot weather than in cold, in rapidly-growing parts than in slowly growing, and in small limbs than in large ones.

Of these conditions that influence the severity of blight after the attack is made there are at least five.

(1) Variety—This is the most important of all these factors. Perhaps no varieties are entirely immune, but some are so nearly so that they never suffer more than a little twig blight under ordinary circumstances, while in others, like the Alexander and Transcendant Crab, the disease runs into the large branches and trunks, even when the other conditions mentioned below are quite against the progress of the disease.

(2) Soil fertility.

(3) Soil moisture.

(4) Temperature.

Anything that contributes to a rapid growth of wood makes the tree more susceptible, and a rich soil under a high state of cultivation and abundance of moisture and hot growing weather, all work to this end. Dry, sod-bound, upland orchards often resist the blight so well that no attention is ever paid to it.

(5) Age—Young trees just coming into bearing seem to suffer most, while very old trees with slower growth and thicker and harder bark resist it much better.

ITEM OF COST

TABLE 1

ITEM OF COST	Total	Per acre	Per tree	Per bbl.
<i>First Year:</i>				
Labor	\$504.91	\$34.254	\$0.958	\$0.529
Cash	418.10	28.364	.793	.446
Fixed cost	291.91	20.007	.559	.315
Totals	\$1,214.92	\$82.625	\$2.310	\$1.300
<i>Second Year:</i>				
Labor	885.66	\$58.418	\$1.625	\$0.407
Cash	966.57	65.574	1.834	.459
Fixed cost	302.16	20.520	.571	.114
Totals	\$2,154.39	\$144.512	\$4.033	\$1.010

TABLE II—CASH COSTS ON 14.71-ACRE APPLE ORCHARD, CONTAINING 527 TREES, FOR TWO YEARS

ITEM OF COST	Distribution of Cost			
	Spray	Total	Per acre	Per tree
Manure charge (50% against 1911 apples).....		\$ 30.77	2.087	\$0.058
Spray materials used:				
First spraying—				
Lime and sulphur, 40 gals. at 4 cents.....	\$ 1.60			
Lime and sulphur, 100 gals. at 16 cents.....	16.00			
Tobacco extract, 3 pints, at \$1.652.....	4.95	24.85	1.686	.047
Lead arsenate, 32 lbs. at 8 cents.....	2.56			.026
Second spraying—				
Lime and sulphur, 43 gals. at 16 cents.....	6.88			
Lead arsenate, 102 lbs. at 8 cents.....	8.16	15.04	1.020	.029
Third spraying—				
Lime and sulphur, 32 gals. at 16 cents.....	5.12			
Lead arsenate, 77 lbs. at 8 cents.....	6.16	11.28	.765	.021
Fourth spraying—				
Lime and sulphur, 15 gals. at 16 cents.....	2.40			
Lead arsenate, 36 lbs. at 8 cents.....	2.88	5.28	.358	.010
Barrels, 937, at \$0.311.....	291.41		19.770	.553
Seed for cover crop.....	39.47		2.678	.075
Total for season.....		\$418.10	\$28.364	\$0.793
<i>Second Year:</i>				
Manure charge (50% against 1912 apples).....		\$ 18.16	1.252	\$0.035
Spray materials used:				
First spraying—				
Lime and sulphur, 80 gals. at 4 cents.....	3.20			
Lime and sulphur, 75 gals. at 11 cents.....	10.50	13.70	.929	.026
Second spraying—				
Lime and sulphur, 44 gals. at 11 cents.....	4.84			
Lead arsenate, 105 lbs. at 8 cents.....	8.40	14.56	.988	.028
Third spraying—				
Lime and sulphur, 52½ gals. at 11 cents.....	7.35			
Lead arsenate, 126 lbs. at 8 cents.....	10.08	17.43	1.182	.033
Fourth spraying—				
Lime and sulphur, 35 gals. at 11 cents.....	3.85			
Lead arsenate, 116½ lbs. at 8 cents.....	9.32	13.17	.919	.028
Barrels, 2,101, at \$0.421.....	885.78		60.091	1.681
Total for season.....		\$966.57	\$65.574	\$1.834

*Undiluted home-made solution: 36 lbs. lime, 86 lbs. sulphur, 50 gals. water. The cost of labor is included. Rate of dilution, 1 gal. lime and sulphur solution to 7 gals. water. †Undiluted commercial lime and sulphur: Rate of dilution, 1 gal. lime and sulphur solution to 10 gals. water. ‡Items of seed cost: Clover, 180 lbs. at 16c; oats, 22 bu. at 40c; turnips, 7½ lbs. at 25c.

Conditions Affecting Blight and Their Control

By Deane B. Swingle, Bacteriologist and Botanist, Montana Agricultural College

ONE of the most striking things about blight is its very different behavior under different conditions. This has led to an apparent disagreement of observations and a real disagreement of opinion, especially among those who have seen it in only one locality. Of the conditions that affect the severity of blight we have two kinds—those that influence the number of cases and those that influence the severity of the cases. Under the former should be listed factors responsible for the spread:

(a) "Holdover" Cases—The work of Mr. M. B. Waite and others has demonstrated that all, or nearly all, the new cases that appear each spring come from old ones where the organisms have survived the winter in that part of the bark where the diseased part joins the healthy. Some of these "hold-

overs" may be found in the orchard, where they are responsible for a local spread, and others occur on nursery stock and may carry the disease for hundreds of miles.

(b) Insects that accidentally take the disease germs from one case and start new ones. Of these the honey bee, ants, green aphid, bark-boring beetles and pear thrips have been accused by good authorities of being important carriers.

(c) Birds—Certain investigators, including the writer, have observed new cases of blight in pear trees, starting from fresh sap-sucker wounds in the bark. As these trees were in some instances well isolated from other cases, it seemed probably that the bird was responsible.

These facts explain in a measure why the disease will in some trees die out in the small twigs without injuring large limbs, while in other trees it will run through the bark to the roots.

Control—In a single sentence we can say that the only method of curing a blighted tree is to cut out and burn all the affected parts. This seems simple enough, but there are important details that determine between success and failure. As a matter of fact very few inexperienced men are successful, largely because they will not pay close enough attention to these important details. The following rules should, therefore, be thoroughly mastered and religiously followed:

(1) See that no blight is allowed to winter over in the trees. The most effective time of the year to cut it out is late fall or early winter, though summer cutting is advised also.

(2) In the dormant season the blighted branch should be cut off about a foot below any visible portion of the disease; in the summer two or three feet below. Even if this necessitates cutting off a larger limb it should be done. It is this rule that is transgressed most often and with the most serious consequences.

(3) After each cut the saw or shears must be disinfected. The disinfectant can best be carried in a milk bottle attached to a belt, and can be applied with a swab. Small corrosive sublimate tablets (four to a pint of water) make an excellent disinfectant. A 5 per cent solution of carbolic acid is also good.

(4) Burn all diseased parts promptly after cutting, especially in summer. It is a general belief that insects crawling over such material may reinfest the trees.

(5) Inspect every tree carefully after the orchard has been gone over. Even an expert, when cutting out blight, has to do this two or three times to get every case, and a case or two left may ruin the whole campaign by starting the blight in the blossoms the next season. A reinspection should always be made just before the buds open, as missed cases are often more easily found at that time. Never omit this.

(6) Pruning—Orchards in infected districts should be kept free from watersprouts at the foot of the trees, and from suckers and fruit spurs on the main limbs; otherwise the bacteria, entering through these tender parts, will quickly reach the roots or trunk.

(7) Tillage and Irrigation—Anything that favors a rapid, succulent growth of the tree makes it more susceptible to blight. It is therefore most important that blighted orchards should have no more tillage and water during the first half of the growing season than are absolutely necessary to the making of the crop. Barnyard manure should be applied only to the more resistant varieties.

(8) Kill the Green-Apple Aphis—Observation and experience have convinced us that the winged adult of this insect is the most important carrier of the blight after the bees stop working in the flowers. Thorough spraying

with tobacco extract for the green aphid should greatly reduce the spread of blight during the summer.

Preparing Fruit Exhibits

In a short time now an interesting part of the fruit grower's mail will consist of the premium lists issued by the various fair associations. A careful study of these will prove of value to all, but more especially to prospective exhibitors, as a thorough knowledge of the entry requirements and premium classes is necessary in making up a successful exhibit. Fruit fit to be taken to the fair must have been well grown. It is possible for a poorly cared-for orchard to produce a winning plate, but it is a rare thing, and, when it comes to the larger box classes, practically impossible. Well-grown fruit has been properly sprayed, cultivated, pruned, thinned and harvested. Too great emphasis is usually put on the matter of size by both the management of the fair and the entrant. The abnormal, whether it be an apple the size of a pumpkin or a five-legged calf, is of interest, but should never be made even an important feature and could well be left out entirely. Fruit for exhibit should be selected from a large quantity and in good daylight, should show the proper form, size and color for the variety, and the individuals should be uniform in the above characteristics. It should not be necessary to say that show fruit must be wholly free from injury or blemish of any kind, not even a limb rub or broken stem.

If the fair is placing emphasis on the commercial side of the fruit industry, pack becomes important and should have careful study, especially when the fruit is apples or pears. Proper packing presupposes correct grading, which should have been done in good light and with a large quantity of fruit at hand. It is the custom to give equal value to bulge, alignment, height of ends, compactness and attractiveness. In a commercial way, however, the amount of bulge and the compactness are more important than the other features. Most of the packed apples which win prizes have been put up by expert packers.

For the earlier shows the peaches, plums, grapes and other soft fruits should be made more important parts of the exhibits and the requirements of perfection for them more rigidly enforced. With them condition, including freedom from blemishes and the physical condition of the fruit, is of primary importance and must be carefully considered in choosing the show fruit. Oversize in this class is nearly always accompanied by defects of other kinds, and what the exhibit might gain for being quite large is likely to be lost because of split stone, cracked skin or similar defects. District displays are of value for advertising purposes and prove one of the most attractive features of many fairs. The whole district should join in preparing them, under the direction of a committee, and each contribute according to his ability.—R. J. Barnett, Pomologist, Washington Agricultural Experiment Station.

Time Table for Girls Who Practice Canning

THE housewife who desires to can fruits may make use of the following time table which the United States Department of Agriculture has issued for the girls who are members of its canning clubs. Before attempting to can, it is best to have a timepiece where it can be conveniently seen, for by keeping exact track of the minutes much better results may ordinarily be obtained than by "intuitive guessing." In the time table there is a column for each of four different portable canning outfits, and in each column are the number of minutes that various fruits and vegetables should be boiled in each particular outfit before they are properly prepared. Proper preparation means the complete sterilization by boiling so that the germ life which might cause the product to spoil will be absolutely killed.

Almost every housewife has a tin clothes boiler which she can easily convert into a convenient sterilizing vat in which to boil the products which she desires to can. The only things necessary are a tight-fitting cover and a false bottom. The false bottom is made of wire netting and is absolutely necessary in order to prevent the jars from coming into contact with the bottom of the boiler. If the jars come into contact with the bottom they will break during the boiling. To make these bot-

tombs the housewife may take an ordinary No. 16 wire netting of half-inch mesh which is cut to fit the bottom of the boiler. If the netting is not available, thin pieces of wood will answer the purpose. A patent open-door steam cooker is even more convenient than a clothes boiler. Even if she has neither of these, the housewife need not hesitate to can, for a deep sauce pan or tin bucket tightly covered will answer the purpose.

In the following table there are three columns (Nos. II, III and IV) in which the times for boiling are given for three different types of commercial canning outfits which the housewife might profitably buy. These are great labor-saving devices and their prices range from \$5 to \$15. A book of instructions accompanies each. The busy housewife who has one of these portable canners may do the work out of doors and is relieved from cleaning up the "muss" after each canning experience. Operators also have fresh air and the freedom necessary for good work instead of the heat and confinement of the kitchen. The water-seal outfit (No. II) is a combined hot water and steam canner with a self-sealed top which permits the products to be boiled at a temperature two degrees higher than the home-made outfit will. This means

that for many things the time of boiling is shortened. Corn, for instance, takes only 180 minutes, where it takes 240 minutes in the home-made outfit. The third or fourth canning outfits (Nos. III and IV) may also be obtained from a reliable dealer. These depend entirely on steam rather than hot water for cooking the fruit or vegetables, and are called "steam-pressure cookers." The cooker with five pounds pressure (No. III) does the work in much quicker time than the water-seal outfit, and the cooker with a pressure of ten pounds or more (No. IV), in some instances, will accomplish the work in half the time needed for the five-pound-pressure cooker. For example, corn

may be satisfactorily prepared in the five-pound-pressure cooker in sixty minutes and in the ten-pound-pressure cooker in forty minutes.

One valuable feature of these commercial portable canning outfits is that they may be handled by children as well as by older persons, and young girls who are trying to learn how to can may use them out of doors without interfering with the routine kitchen work. There is also a commercial portable hot-water bath outfit which may be purchased to take the place of the home-made outfit (No. I).

Select the outfit which seems to fit your needs best. If possible see it in operation before buying.

CANNING TIME-TABLE

[In "Size of Can" column, No. 2 and No. 3 are standard sizes, about equivalent to one pint and one quart, respectively.]

Products to be canned	Size of cans, No. 2, Pints, No. 3, Quarts.	I	II	III	IV
		Home-made hot-water bath outfit, at 212° Minutes	Water-seal outfit, at 214° Minutes	Steam pressure cooker, 5 lbs. or more Minutes	Pres. ure cooker, 10 lbs. or more Minutes
Apples, whole or sliced, for pie filling	3	15	15	12	6
Apricots	3	15	12	12	6
Asparagus and other greens	2 or 3	60	60	45	35
Apple cider	2 or 3	20	15	12	10
Beans, lima or string	2 or 3	90	60	60	30
Blackberries, dewberries	2 or 3	12	10	6	3
Cherries, peaches	2	15	12	10	5
Corn (without acids)	2	240	180	60	40
Grapes, pears, plums	2 or 3	15	15	10	6
Honey	3	60	50	40	35
Huckleberries	3	10	10	6	3
Okra and tomatoes combined	2 or 3	50	50	40	30
Peas, beets, carrots, etc.	2	60	60	45	35
Pineapple	2 or 3	30	25	10	10
Raspberries	2 or 3	15	12	8	5
Sauerkraut	3	50	50	40	25
Sweet potatoes	3	80	70	60	40
Strawberries	3	15	12	8	5
Tomatoes	2 or 3	22	20	10	6
Tomatoes and corn	2	80	70	60	40
Grape juice	2	15	15	10	5
Quince	2	30	25	15	10
Tomato juice	2	20	20	15	10
Pumpkin and squash	2	60	60	45	35
Fish, pork	2	200	200	120	60
Chicken, beef	3	250	240	180	40
Figs	3	30	20	10	5
Rhubarb	3	15	15	10	5

For altitudes of 4,000 feet or more above sea level add about 25% time to this schedule.

The Evolution of the Cider Industry

[Specially Contributed to "Better Fruit"]

INDUSTRIES which live and continue through many generations to be useful to man must pass through periods of evolution. These periods of evolution make for the industry the development which fits them for the conditions resultant of ever-changing time. Progress and conservation brings on these evolution periods. Conservative feeling has been foremost in the minds of prominent men for many years. The by-products of our mills formerly consigned to our scrap dumps are now being treated and much valuable material obtained therefrom. Forests at one time considered worthless only to be converted into a clearing are now being protected by the government. The same thing is true of our western land and of our mineral possessions. In the meat industry packers have gone so far as to conserve every part of the hog so that now there is "nothing left but the squeal." And lastly but not least, the farmer is cultivating fewer acres of land and producing more crops than ever before.

Neither has the apple grower been lax in adopting this conservation spirit. Apples which formerly rotted under

the trees are now made into cider, and from cider into vinegar, jelly and boiled cider. The latter is used extensively in making apple butter and for culinary purposes. To the orchardist who is enthusiastic with this conservation spirit, the cider press especially should appeal. As a people, we Americans are still woefully wasteful, but we are learning. Some of us have bumped into the fact that it is not only our products that count but our by-products as well.

There are no statistics to tell us how many millions of dollars have gone to waste in rotten apples. They have been allowed to drop from the trees and rot on the ground by the billion bushels. Occasionally some farmer has had the foresight to open the orchard gate and let the hogs in. With the further exception of a few mills with which few farmers ground and pressed the apples into cider the loss was total. By the old process of cider making the apple juice was permitted to remain in contact with the air so long that it was very difficult to keep it sweet; with the improved methods we can have sweet cider, vinegar, jelly and apple butter

for our New Year's dinner all made from the same load of apples.

The old log beam having a fulcrum at one end and raised by hand power was our primitive cider press. The pressure was obtained from the weight of the log, together with the weight of a man who was stationed at the other end of the log. Next in line came the screw and knuckle-joint presses, which served the apple grower long and faithfully. But these, too, came to the turn of the road and were supplanted by modern hydraulic presses. The old-style screw press of the small type is still used to some extent where it is desired to make a small amount of cider at odd times for private use. These presses will turn out from 40 to 100 gallons daily and are sold at prices ranging from \$10 to \$20.

The modern hydraulic press is equipped with a piston working in a cylinder. Water is easily pumped through a small pipe into the cylinder and the pressure being applied against the end of the piston or ram. The ram is thus forced out, pressing the apple pomace which has previously been prepared by a hand or belt-driven apple grater. An average of 4½ gallons of cider can be produced by these presses from a bushel of apples, and from 300 to 6,000 gallons made per day. The hydraulic press has put the cider industry on a paying basis. The price for making cider ranges from 1 to 3 cents per gallon; one day's run of 4,000 gallons, say at 2½ cents per gallon, would make the operator \$100. Treated cider sells as a soft drink at 50 to 70 cents per gallon; 100 bushels of apples unfit for market could thus be made to yield between \$200 and \$300 with very little labor.

Some of the useful products which come from the apple are vinegar, cider syrup, cider jelly, apple butter, pasteurized cider, etc. Below is given a brief description of these products:

Vinegar—The process of transforming apple juice into good cider vinegar is easily accomplished and can be produced in every household where the necessary temperature can be controlled. For vinegar, the windfalls may be used or the pomace of later pressing may be repressed, but for a superior article only sound, ripe apples should be used. Common experience teaches that if cider is exposed to the air it will soon ferment. Now by proper handling after the first stage of fermentation the cider may be converted to vinegar in a very short time. It is well understood now that fermentation is the work of myriads of bacteria that infest the cider and behave very much after the manner of yeast in bread making. Cider, in changing to vinegar, passes through two stages: First, the sugar of the juice is changed to alcohol. Next, the alcohol is changed to acetic acid or vinegar by further fermentation.

Cider Syrup—Evaporation is another method of treating cider. By this process the volume is greatly reduced and the resultant product is so concentrated that it will remain in a perfect

state of preservation for years. In this way two great advantages are secured: First, the product can be stored in much less space, and, second, it will keep indefinitely. When the cider has been reduced in volume in the ratio of five gallons to one the product is of such consistency as to be suitable for handling and in no danger of fermenting. This product is called cider syrup, or boiled cider, and is widely used in making apple butter, mince pies and the various products of the culinary art.

Cider Jelly—When evaporation is carried further, reducing the volume in the ratio of about seven to one, the product is known as cider jelly. In this form it is quite acceptable to those who like a jelly somewhat tart. By adding sugar it may be made to please the taste of those who like jelly of a milder, sweeter taste. The jelly may be flavored to suit various tastes by using any flavoring material that will not evaporate readily. Apple jelly is usually marketed in glass jars holding two or three pints.

Apple Butter—One of the chief uses of apple syrup is in the making of apple butter. Everybody knows the "goodness" of apple butter. Fond memory will hark back to "bread, butter'n apple butter." This apple product, combining as it does the essentials of the best fruit known to man, well deserves high rank as a staple food and table delicacy. The slow, laborious method our mothers used—making apple butter in a big copper kettle—has given place to the new steam cooker. A copper coil quickly and easily converts a quantity of pared apples and cider syrup to a clearer, smoother and more delicious product than even mother was able to give us for our "piece." In the old method heat caramelized some of the sugar, which gave the butter a dark color and a burnt-sugar taste. By the use of the simple, inexpensive apple-butter cooker these objections are overcome.

Pasteurized Cider—Still another method of treating cider is the process known as pasteurization. Many at-

tempts have been made to preserve cider sweet and pure, just as it comes from the press. The use of preservatives is very unsatisfactory and often dangerous. It is well known that a fruit juice can be preserved by heating it and sealing it up, but the chief difficulty in this is to heat to the proper temperature and at the same time exclude the air. A temperature of 160 degrees Fahrenheit is sufficient to destroy bacterial life and prevent fermentation, but a temperature higher than 170 degrees Fahrenheit will give to the cider a baked-apple taste, rendering it undesirable as a drink. A simple pasteurizer will perfectly sterilize, filter and seal up cider so that it will keep indefinitely and retain the same flavor that it had as it came from the press. The health-giving properties and the medicinal qualities of pure apple cider give rise to a popular demand for the product of a pasteurizer. Pasteurized cider retails at prices that net the cider maker a handsome profit.

Fundamental Principles of Co-operation in Agriculture

By G. Harold Powell, Manager California Fruit Growers' Exchange, Los Angeles, California

THIS discussion deals with some of the fundamental principles of co-operation as applied to business problems in American agriculture. By co-operation in the business of agriculture is meant that form of effort under which a number of farmers associate themselves together as members, create an incorporated agency called an association, a society or an exchange, or by other similar terms, through which the business of the members is transacted at cost. The operations of the corporation are conducted under the form of an industrial democracy for the benefit of the members. The members may share equally in the responsibility of the organization by having an equal voting power, though in some organizations the voting power is proportional to the amount of business each transacts through the association. The money received for a product which a member distributes or sells through the association is returned to him after the actual operating expenses are deducted, including possibly a charge for depreciation on the property, a reserve fund and the usual rate of interest on the capital used in the business; this interest being limited to a reasonable compensation for the use of the money. The things he buys are purchased at cost; either at the wholesale cost plus the overhead charge, or at the prevailing retail or competitive prices with a refund at the end of the year of the earnings or surplus pro-rated on the volume of his business.

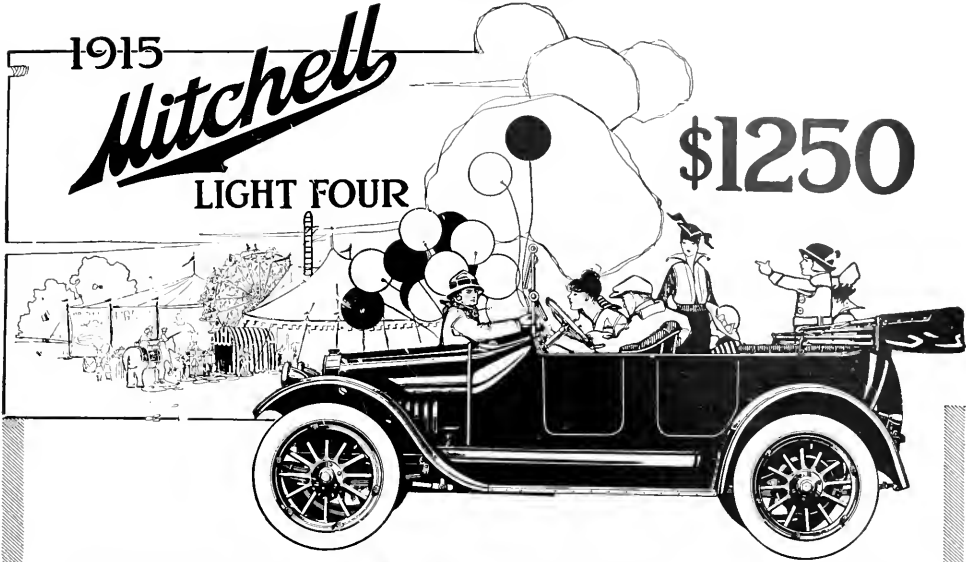
The co-operative organization differs fundamentally from the capital stock corporation conducted for profit. A capital stock corporation for profit is organized to return an earning and a profit on the capital used in the business. The basis of administration, control and the distribution of earnings is

the capital invested in the undertaking. In a co-operative organization the basis of control is the membership, where each votes equally, irrespective of the volume of his business; though the basis of control is often made the product of the members, where each votes in proportion to the volume of business contributed, while the earnings in either case, if they occur, are returned to the member in proportion to the volume of business he transacts through the organization. The basis of the co-operative organization is men; of the capital stock corporation, money. Capital cannot co-operate; products cannot co-operate; only men can co-operate. When the degree of co-operation of a member is measured by the capital or the volume of business contributed, then the members as men are not co-operating; either capital or a product is the basis of co-operation, through the member as the medium.

There is much confusion in the use of the term "co-operation" as applied to agricultural efforts. It is commonly applied to any group of farmers who associate themselves together. They may organize as members of a voluntary unincorporated association of individuals, or as an incorporated capital stock association to handle farm crops for profit or for other purposes, or as nonprofit corporations without capital stock. In California, for example, the term is applied to both profit and nonprofit corporations organized to handle farm products, whether organized and controlled by the producers themselves or by others. In other parts of the country the same uncertain use of the term is applied to various kinds of agricultural movements. The term needs to be defined by the federal and state statutes. It is believed that its use as applied to business organizations in

agriculture should be restricted to incorporated associations, societies, exchanges or agencies which are formed exclusively for the benefit of the members; whose voting power is based on equality of membership; whose membership is confined exclusively to active producers, the membership ceasing to exist when the producer withdraws from the organization, and whose earnings are distributed on the basis of the product, rather than on the capital contributed by each member, after a fair rate of interest is paid for the use of capital actually employed in the business, if any, and other overhead charges are deducted. A co-operative organization, therefore, is not a corporation in which the capital is contributed primarily in order that it may earn a profit; nor one composed of producers and nonproducers; nor one in which the producer's product is handled by a corporation for the benefit of the stockholders rather than the members; nor one in which the membership is not under the control of the organization; nor one in which the members do not actually control the organization. It is an association of farmers who unite in an effort to handle their common interests through an agency which is controlled by them, on the principle of an industrial democracy, and exclusively for their benefit.

A co-operative association may be incorporated as a capital stock corporation or as a nonprofit corporation without capital stock. If formed as a capital stock corporation it may still be legally co-operative if the laws under which it is formed permit the members to manage its affairs along co-operative lines, or if the statute provides the method of voting, the method of transferring stock, the limitation of membership and the distribution of earnings



\$1250 will buy this superb car

The high quality, low cost car of the year—light weight—accessible—extremely flexible—and with the exclusive "Bate two-unit, three point Suspension Construction."

Read These Remarkable Features:

- Chrome Vanadium Steel Construction
- Long Stroke, High-Speed L-Head Motor
- Three-point Motor Suspension
- Full Floating Rear Axle
- Two-unit—Three-point Construction
- Vacuum Gasoline Feed
- Silent Electric Starter
- Electric Lights
- Silent Chain Drive Shaft to Generator and Distributor
- Positive Helical Gear Drive to Cam Shaft
- Water Pump on Fan Shaft
- Dimming Search Lights — Noa-Glare System
- Electric Horn
- Speedometer
- Gasoline Gauge
- Mitchell Power Tire Pump
- One-Man Top
- Integral Rain Vision Two-Piece Windshield
- Quick-Action Side Curtains
- Crowded Fenders
- Portable Exploring Lamp
- Demountable Rims
- Extra Tire Carrier in Rear
- License Brackets

This is the new Mitchell 1915 Light Four. A snappy—smart—long rakish car—Crown fenders—new sloping Cowl and curved hood—flush doors with disappearing hinges.

A car that looks like \$2000 worth for \$1250.

There's more Chrome Vanadium Steel the lightest and the toughest metal known used in the construction of this car than in any other of like size and Power.

Light Weight But Safety First

That's one reason why it is such a light car.

Then Steel Stampings and drop forgings instead of heavy metal castings have been used wherever possible.

Will underweigh cars of similar size and power from 400 to 1000 pounds. And yet it's a rough country car—and absolutely safe—it will keep the road.

Bate Two-Unit Construction

The most efficient Construction in the world for Creating Power and for turning Power into mileage.

The Three-point Suspension Construction anticipates the twists, jars and bumps of rough country going—saves the car—saves repairs—reduces Upkeep Costs and keeps the tire and gasoline bill to a minimum. And because of the simplicity of the design every part is accessible—

The Personal Touch

See this car for yourself—ask our dealer to demonstrate it for you—drive it yourself—feel the thrill of the wheel get the Personal Touch.

Then remember the features you see—the advantage you experience are *there to stay*—

Write for literature and demonstration information. Address Dept. 115

The Mitchell Line for 1915

Mitchell Light Four—two and five passengers—4 cylinders—35 horsepower—116 inch wheel base—34x4 tires.	\$1,250
Mitchell Light Four—6 passengers—same as above	\$1,300
Mitchell Six De Luxe—7 passengers—6 cylinders—141 inch wheel base—60 horse power—37 x 5 tires. \$2,350	
Mitchell Special Six—5 passengers—6 cylinders—50 horse power—132 inch wheel base—36x4½ tires.	\$1,895
Mitchell Special Six—6 passengers—same as above	\$1,995

F. O. B. Racine

Mitchell-Terris Motor Co.
Racine, Wis., U.S.A.

according to co-operative principles. There has been little effort by the states to enact laws that will permit the organization of purely co-operative associations of farmers. It is therefore impossible in most states for an association to be formed that can operate securely along co-operative principles, though as a matter of fact many asso-

ciations so formed do, by the consent of the stockholders, actually operate co-operatively.

The stock corporation as defined by the statutes of most states is not the form under which to incorporate a farmers' business organization, though most of the so-called co-operative associations have been incorporated under

the stock corporation statutes. The stock corporation laws have been enacted primarily to meet the needs of capital, not primarily for the benefit of those who may use the facilities of the corporation. The membership in such organization is not under legal control, because the right to sell the stock is a legal incident of its ownership. A stock-

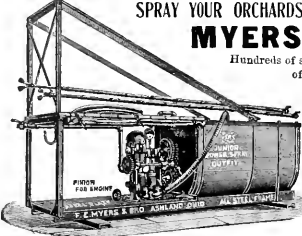
**SPRAY YOUR ORCHARDS AND VINEYARDS THIS FALL WITH A
MYERS POWER SPRAY RIG**

Hundreds of successful fruitmen and gardeners are using them because of their completeness, ease of operation, large capacity and high efficiency.

MYERS SPRAY RIGS are built in two styles and three sizes and are completely equipped including—
pump, tank, steel tower, mechanical actuator, hose, and all fittings, ready for the wagon tracks and quick connection with gasoline engine (any style).

If you have extensive orchards or do custom work, you are interested in a Myers Power Spray Rig. Write us for late Catalog showing our complete and proven line of Buckets, Barrel and Power Pumps for every spraying requirement. Ask for your copy at once and name of our nearest dealer.

**120 Orange Street
ASHLAND, OHIO**
Ashland Pump and Hay Tool Works



F. E. MYERS & BRO.

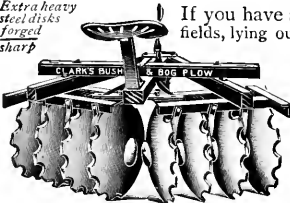
Have You Any Bush or Bog Land?

Extra heavy steel disks forged sharp

If you have any bush or bog fields, or parts of fields, lying out as waste land, or if you have any tough sod that you want to thoroughly chop up, or if you have any other disking that heretofore you considered impossible, put the **BUSH AND BOG PLOW** on the job. You will be astonished at what this big, strong, heavy plow or disk will do for you. Let us tell you more about this tool. Write today for catalog and B & B. circular.

Cutaway
CLARK'S

CUTAWAY HARROW CO., 490 Main St., Higanum, Conn.
Makers of the original CLARK double-action harrows



holder may sell his farm and continue to be a stockholder in a stock corporation and still have the right to examine the affairs of the association, or he may sell his stock to someone who is not interested in the organization, or who may even be antagonistic to it, or he may withdraw his membership and still remain a stockholder. There is no legal way by which the stock, and therefore the control of the corporation, can be confined to the membership after the stock has once been issued, unless the association is able to take over the stock and hold it as a trustee, until it can be resold to a member. Neither is the voting power of the stockholders under control in a stock corporation, because the voting power is generally proportional to the number of shares held by each stockholder.

As a matter of fact most of the so-called co-operative associations of the country have been incorporated as capital stock corporations in the absence of other statutes under which they could be incorporated, and many of them operate by mutual agreement expressed in the articles of incorporation or in the by-laws, on strictly co-operative principles; others vote in accordance with stock ownership, fix a maximum amount of stock to be owned by any member, and apportion the stock on the bearing acreage of the members, but make no profits on capital. These organizations usually provide that a withdrawing member shall offer his stock to the association before he can sell it outside, a provision that is useless if the association is not able to take it over.

They may provide also that all the earnings shall be returned to the members, pro-rated on the business transacted by each, after interest is paid on the capital invested and other overhead

charges are deducted. The stockholders may vote equally by agreement and the capital invested may be paid only a fair rate of interest for its use. The difficulty in such organizations lies in the fact that some of the conditions to which they agree are not, in case of trouble, enforceable in the courts, and the organization ceases to be co-operative when the stockholders desire for any reason to exercise their legal privileges along non-co-operative lines.

As a result of organizing a so-called co-operative association under the usual stock corporation laws, many of these organizations often pass into the hands of nonproducers or of rival interests, following the withdrawal of members through the sale of farms and the sale and transfer of stock, or a partial control may be held by dissatisfied stockholders who have withdrawn as members.

In other states, especially in California, the statute provides for the incorporation, organization, management and co-operation of agricultural nonprofit associations which do not have capital stock and whose business is not carried on for profit. These associations issue certificates of membership to each member, but the membership cannot be transferred or assigned to any other person, nor is the purchaser of a property of a member entitled to membership by virtue of such purchase. In such associations the basis of voting and the control of the membership is subject to rules made by the association. These associations may accumulate a capital with which to transact business, though the capital is not in the form of a paid-in capital stock. It may be accumulated pro rata from the proceeds of the shipments of the members, or in any other way agreed to by the members.

In Nebraska co-operation has been defined and given a legal status. The law says, "for the purpose of this act, the words 'co-operative company, corporation, or association' are defined to mean a company, corporation or association which authorizes the distribution of its earnings, in part or wholly, on the basis of, or in proportion to, the amount of property bought from or sold to members, or of labor performed, or other service rendered to the corporation." It differs from the general incorporation law of Nebraska by providing that every co-operative corporation has the power "to regulate and limit the right of stockholders to transfer their stock; and to make by-laws for the management of its affairs; and to provide for the distribution of its earnings."

In Wisconsin a law was passed in 1911 (Chapter 368, Laws of 1911) which provides for the formation of "a co-operative association, society, company or exchange, for the purpose of conducting agricultural, dairy, mercantile, mining, manufacturing, or mechanical business on the co-operative plan." It "may buy, sell and deal in the product of any other co-operative company heretofore organized or hereafter organized" as a co-operative association. The law provides that "no stockholder in any such association shall own shares of a greater par value than one thousand dollars * * * or be entitled to more than one vote." It provides that the directors shall apportion the earnings, subject to revision by the association at any time, "by first paying dividends on the paid-up capital stock not exceeding six per cent per annum, then setting aside not less than ten per cent of the net profits for a reserve fund until an amount has been accumulated in said reserve fund equal to thirty per cent of the paid-up capital stock, and five per cent thereafter for an educational fund to be used in teaching co-operation, and the remainder of said net profits by uniform dividend upon the amount of purchases of shareholders and upon the wages and salaries of employees, and one-half of such uniform dividend to nonshareholders on the amount of their purchases, which may be credited to the account of such nonshareholders on account of capital stock of the association; but in productive associations such as creameries, canneries, elevators, factories and the like dividends shall be on raw material delivered instead of on goods purchased. In case the association is both a selling and a producing concern, the dividends may be on both raw material delivered and on goods purchased by the patrons." The law provides that no corporation or association doing business for profit shall be entitled to the use of the term "co-operative" as part of its corporate or business name unless it has complied with the provisions of the act.

One of the common difficulties in a so-called co-operative association formed as a stock corporation results from the payment of dividends on the paid-in

capital above a fair interest for the use of the capital, especially where the capital contributed by the members is not proportional to their individual shipments. The tendency in such organizations is to pay high dividends on the stock. The stockholders generally demand an unusual earning on the capital contributed. They acquire the dividend habit and deduct an amount from the proceeds from the fruit of all members, or from the earnings of the company, to pay the dividend, before returning the proceeds to the growers. In some fruit growers' organizations dividends of twenty, thirty, or even fifty per cent have been paid on the capital stock.

The difficulty over the payment of dividends usually arises with a member who is a small stockholder and at the same time a large shipper, or when a stockholder ceases to be an important shipper. A grower becomes dissatisfied when he realizes that the payment of a profit to capital, whether taken from the proceeds of his fruit or made as an earning on his purchases, are used to enrich a stockholder who has money invested in the corporation but who has not contributed to its success except in the original investment. Another source of trouble in the stock corporation is that the grower becomes dissatisfied after receiving a liberal dividend on his stock if the business condition of the organization does not warrant its continued payment. In the citrus industry these difficulties have usually been avoided by paying no dividend on the capital, or at least a dividend not in excess of the customary rate of interest.

A farmers' organization that has been organized under the usual stock corporation laws is on an uncertain foundation, not alone from the lack of control of the membership, but also because of the conflict between the capital and the product of the members whenever the proceeds derived from the latter are reduced to pay an unusual rate of interest on the capital contributed.

There are many so-called co-operative organizations (shrewdly formed) that make an earning for the corporation on the product of the grower by retaining the control of the facilities through which the growers' fruit is handled. The packing houses may be controlled by the organizers and a large dividend paid out of the proceeds of the product on the capital invested. The purchase of supplies may contribute a profit, low grade supplies may be sold at the price of high grade material, and profits may be made in many other indirect ways. An organization that pays a profit to capital from the growers' product, either for the use of packing facilities or for any other service, is not co-operative. It is a stock corporation, operating for the grower for profit on capital, while a co-operative organization is operated by the producers wholly for their own benefit, the benefits being pro rated on the use which the member makes of the organization.

FERTILIZE YOUR STRAWBERRIES AND INCREASE YOUR YIELD FIFTY PER CENT

Last June, Mr. A. M. Gooch, of Hood River, wrote us that by using our fertilizer on his strawberries, he believed he would realize 50% more berries than last year.

We have heard from Mr. Gooch again, and read what he writes now:

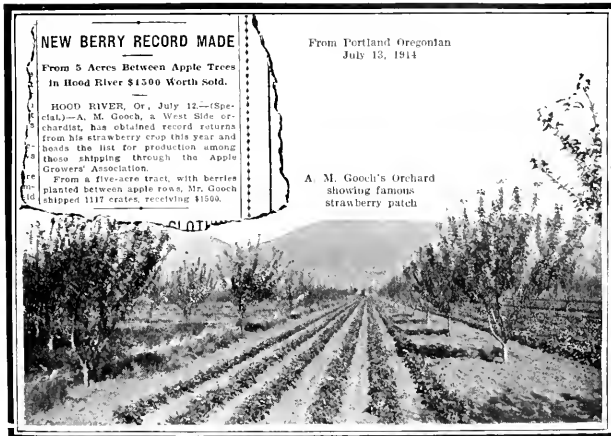
UNION MEAT COMPANY, North Portland, Ore.

Hood River, Sept. 14, 1914.

GENTLEMEN: On seeing your ad in "Better Fruit" I want to make some corrections. The \$1500 was only a guess. At that time I had not received statement of my berries. The true statement from the Association for the crop was:

\$1855.98	11 cases sold for \$4.00.
\$1866.98	Total.

Yours-truly, A. M. Gooch.



NEW BERRY RECORD MADE

From 5 Acres Between Apple Trees
in Hood River \$1500 Worth Sold.

HOOD RIVER, Or., July 12.—(Special.)—A. M. Gooch, a West Side orchardist, has obtained record returns from his strawberry crop this year and sends the list for production among those shipping through the Apple Growers' Association.

From a five-acre tract, with berries planted between apple rows, Mr. Gooch shipped 1117 crates, receiving \$1500.

From Portland Oregonian
July 13, 1914

A. M. Gooch's Orchard
showing famous
strawberry patch

Mr. Gooch's success can be your success if you use

BEAVER BRAND ANIMAL FERTILIZERS

"A Fertilizer for Every Crop"

The results obtained by the use of our fertilizer in Hood River Valley are not theories, but cold, hard facts. Ask Mr. Gooch or anybody else who has fertilized their berries how they increased their yields by using BEAVER BRAND ANIMAL FERTILIZERS.

Write for our booklet No. 37 and let us show you what animal fertilizers can do for you.

PREPARED BY **UNION MEAT COMPANY** NORTH PORTLAND, OREGON

A co-operative organization of farmers must be founded on economic necessity if it is to be permanently successful. The reason for its existence must lie in some vital service which it is expected to perform if it is to have strength enough to live in the face of the competition to which it will be instantly subjected. It must compete with existing organizations and this competition will be directed towards eliminating it; it will be viciously attacked; every conceivable form of misrepresentation will be leveled against it; the officers will be attacked by insidious rumors concerning their ability or integrity; the banks, especially in the newer sections, may be controlled by competitors, and may refuse to furnish the necessary credit; and every weapon known to competition, either legitimate or disreputable, will be used to put it out of business.

The average producer is not a business man, nor is he skilled in the arts of competitive business. He is naturally a strong individualist. He is slow to delegate authority over his affairs to anyone, and when he is face to face with the skillful arguments of those who aim to break the organization and keep him working as an individual, he

is likely to weaken and finally leave the organization unless he had felt the effect of hard times, a helplessness on account of a combination of those who buy or sell his products, excessive freight or commission charges, or other forms of oppression. It is an historical fact that the investment of the farmer must have been threatened by existing conditions before he had been able, in the past, to overcome his individualism sufficiently to work with his neighbors in co-operative team work. The country is strewn with the wrecks of co-operative organizations that were born prematurely and which died by the wayside, because the farmer himself deserted in the first real conflict with the established agencies that have handled his business. Co-operation, to be successful, must be founded not only on economic necessity, but it must grow through gradual evolution. It must have a small beginning and grow in strength through experience step by step, rather than by leaps and bounds. The fundamental mistake that is being made in many localities is to form a farmers' organization all at once on a plan of an organization that has taken years to develop. The plan may be sound, but a co-operative organization

FENCE DIRECT TO THE CONSUMER

American Steel and Wire Company's Products

Do you want a Good Farm Fence at a Low Price? We have a new light weight field fence made of high grade galvanized wire. We can save you money on all kinds of fencing. Write us for descriptive matter and prices.

We Contract to Erect Fence

National Fence Company
Foot of Columbia St., Portland, Ore.

HEIGHT	SPACING	21 BARS	58	NOTES	HIGH
5	5	20	53	NOTES	HIGH
5	4 1/2	19	48	NOTES	HIGH
4 1/2	4 1/2	18	43	NOTES	HIGH
4	4	16	35	NOTES	HIGH
3 1/2	3 1/2	15	24	NOTES	HIGH
3 1/2	3	14	24	NOTES	HIGH
3	3	13	24	NOTES	HIGH
3	2 1/2	12	24	NOTES	HIGH
2 1/2	2 1/2	11	24	NOTES	HIGH
2 1/2	2	10	24	NOTES	HIGH
2	2	9	24	NOTES	HIGH
2	1 1/2	8	24	NOTES	HIGH
1 1/2	1 1/2	7	24	NOTES	HIGH
1 1/2	1	6	24	NOTES	HIGH
1	1	5	24	NOTES	HIGH
1	3/4	4	24	NOTES	HIGH
3/4	3/4	3	24	NOTES	HIGH
3/4	1/2	2	24	NOTES	HIGH
1/2	1/2	1	24	NOTES	HIGH

"Specialize" says Henry Ford

Of the Ford Auto Company, "and you will succeed."
That is why we succeed in growing the finest

Grafted Vrooman Franquette Walnut Trees

On the market. All of our trees are grafted on selected California black roots. We are the walnut specialists in regard to varieties, culture, soils, location, etc. We grow no other nursery stock. Our walnut nursery receives our entire attention, and our trees are in a class by themselves.

C. W. Noble, of Toronto, Ontario, planted 2500 of our trees near Salem, Oregon, and every tree grew. Write for prices or information to

FERD GRONER & McCLURE, Hillsboro, Oregon

can only succeed when given the unflinching support of the members who through years of experience have acquired an appreciation of the fundamentals that underlie a successful association of this kind. The success of any organization depends on its members, not on its form.

The membership in a co-operative organization should be confined exclusively to those who are producers and who, as producers, use its facilities. The members should be acquainted and have confidence in each other. It should never include those who contribute capital alone to it. Many organizations are formed by bankers, fruit dealers, or others, who promote an organization for the purpose of making a profit from it. They may be formed in good faith by business men who realize the value of the co-operative movement and who are willing, as a service, and not for profit, to furnish the capital for its organization. The need for such an organization must spring from within, from the necessity of the industry, and not from a desire of a commission merchant or broker, or of an ambitious manager who sees an opportunity of capitalizing the co-operative movement for his personal benefit. There are many organizations of the latter type that masquerade under the co-operative banner, but which are formed, managed and controlled either directly or indirectly by those who make a profit on the packing organizations, on the sale of fruit, on the purchase of supplies, on railroad claims or trade rebates, or in other indirect ways. Such organizations are always kept prominently before the growers

as co-operative, a situation which, when it exists, is almost prima facie evidence that the co-operative features are for the benefit of a few, rather than for all the members.

Membership in a co-operative organization must carry with it a responsibility on the part of the member strong enough to carry it through adversity of every kind. To feel this responsibility, the member must of course feel the necessity for the organization; he must feel that he is a part of it; that the organization is his, developed and managed to promote and protect his interests. If the association is formed by the members to meet their economic needs, this feeling of responsibility pervades the membership, but if the association is formed to promote the welfare of the officers or any other class of people, or if financed by well-meaning people who really desire its success, an association cannot depend on the loyalty of its members in time of adversity.

One of the problems that a co-operative association always has before it is keeping alive the interest of the members. They must be a vital part of the organization. They must take an active part in its development. They must keep posted on the details of the business; the business methods of the organization must be an open book to them. There can be nothing mysterious about the management of the business. Contracts, salaries, trade or other legitimate rebates, railroad claims, profits or earnings of every kind—these must be of such a nature that every grower can know about them if a co-operative association is to

maintain the loyal support and confidence of its members. It must, of course, win that support by the results it accomplishes, and these results must be obtained by a business record that keeps free from suspicion regarding the integrity of its methods, and as free as possible from criticism regarding its business efficiency. Every defect of the organization will be kept before the members by its competitors, and imaginary defects created by willful misrepresentation by those who aim to break down the membership will always be prominently featured.

In a strictly co-operative organization a fundamental principle should be "one man, one vote." It should be a real industrial democracy in which the members trust each other and lean upon each other's judgment as men. In such an organization neither the capital contributed nor the volume of business transacted should be the basis of the responsibility or influence of the individual member, because neither can co-operate or be made a basis for lasting co-operation. In the European co-operative associations the "one man, one vote" principle is applied as a test to separate the strictly co-operative associations from the pseudo co-operative. Since co-operation is founded on men, not on capital or products, there is no fundamental difference in principle where capital is eliminated and product is substituted as a basis of voting and control. The control of a co-operative association should be founded on the equality of membership, whether the member contributes a large or a small volume of business. It is the members, who as men, co-operate in these organizations. The history of the co-operative movement in Europe and in California shows that this fundamental basis is sound. In the latter state one organization, the California Fruit Growers' Exchange, which was formed as a stock corporation but which operates strictly on co-operative principles handles a business of twenty million dollars, more or less, annually on the "one man, one vote" principle of voting. The directors each represent a business that varies widely in volume and in value, but the "one man, one vote" principle of representation has stood the test of business experience and has been one of the foundation stones on which the success of this organization has been built. The directors reserved the right when they organized to vote pro rata on the shipments represented by them, but this method of voting has never been used in twenty years of business experience. The California statute governing the non-profit corporations without capital stock permits the voting power of members to be equal or unequal. In many of these organizations the voting power and property rights of the members is proportional to the contribution which each makes to the investment necessary for operation, the by-laws in some citrus fruit organizations providing that "members will contribute to the investment neces-

Continued on page 22

BASIC PRINCIPLES

A marketing organization, like an individual, should have "a reason for the faith within" it. The 8,310 growers affiliated with the North Pacific Fruit Distributors do have reasons for the faith within them. The basic or fundamental (and, as we believe, sound "horse sense") business principles that they are earnestly and intelligently working towards in the marketing of their fruit are:

FIRST—That the growers, through their own duly elected representatives, shall make the price on their own products.

SECOND—That the growers shall sell their own fruit through their own salaried representatives in the Eastern markets.

THIRD—That the growers shall finance themselves through their own Northwestern banks rather than by mortgaging their fruit to an Eastern buyer and thereby to that buyer's one market.

FOURTH—That the growers shall provide their own Northwestern storage in order to avoid mortgaging their fruit to an Eastern storage concern and thereby to that storage concern's tributary market.

FIFTH—That the growers shall receive from their own representatives complete information on markets, prices, crops, etc., as well as a complete account sales, etc., of their own business affairs through regular daily bulletins and reports.

SIXTH—That the growers shall increase their trade connections through having an all-districts organization through which they can sell to any buyer, any quantity of fruit, of any variety, of any grade, from any district, with a guarantee of quality and uniformity.

SEVENTH—That they shall manage their own affairs through their own fruit-grower-representatives chosen by the growers and accountable only to the growers.

Does the shipping organization that represents the grower not affiliated with the North Pacific Fruit Distributors do these things for its growers?

Are not these basic, "horse sense," business principles? Should not the fruit grower handle his own business just as every other trade or profession handles its own business?

North Pacific Fruit Distributors

A Co-operative Central Selling Agency for
115 Local Fruit Growers' Associations

Spokane, Washington

BETTER FRUIT

HOOD RIVER, OREGON

Official Organ of The Northwest Fruit Growers' Association
A Monthly Illustrated Magazine Published in the
Interest of Modern Fruit Growing and Marketing
All Communications Should be Addressed and Remittances
Made Payable to

Better Fruit Publishing Company

E. H. SHEPARD, Editor and Publisher
H. E. VAN DEMAN, Contributing Editor

STATE ASSOCIATE EDITORS

OREGON	
C. I. Lewis, Horticulturist.....	Corvallis
S. H. Jackson, Pathologist.....	Corvallis
H. F. Wilson, Entomologist.....	Corvallis
WASHINGTON	
A. L. Melander, Entomologist.....	Pullman
O. M. Morris, Horticulturist.....	Pullman
COLORADO	
C. P. Gillette, Director and Entomologist.....	Fort Collins
E. B. House, Chief of Department of Civil and Irrigation Engineering, State Agricultural College.....	Fort Collins
E. P. Taylor, Horticulturist.....	Grand Junction
IDAHO	
W. H. Wicks, Horticulturist.....	Moscow
S. H. Thorner, Horticulturist.....	Leviston
UTAH	
Dr. E. D. Ball, Director and Entomologist.....	Logan
Leon D. Batchelor, Horticulturist.....	Logan
MONTANA	
O. B. Whipple, Horticulturist.....	Bozeman
CALIFORNIA	
C. W. Volckworth, Entomologist.....	Berkeley
W. H. Yelch, Entomologist.....	Watsonville
BRITISH COLUMBIA	
R. M. Winslow, Provincial Horticulturist.....	Victoria
SUBSCRIPTION PRICE:	
In the United States, \$1.00 per year in advance	
Canada and foreign, including postage, \$1.50	
ADVERTISING RATES ON APPLICATION	
Entered as second-class matter December 27, 1906, at the Postoffice at Hood River, Oregon, under Act of Congress of March 3, 1879.	

The War.—During the first sixty days of the war much uncertainty prevailed in business. Our imports have decreased; our exports have decreased. It is generally more or less believed that this is temporary. It is hoped in the near future business conditions will become normal. At present the condition is such as to require deliberate judgment and conservative methods in all lines of business. The crops in America this year are large. If these crops can be handled in an intelligent business way and if transportation on the sea continues open and sufficient transportation facilities are secured the crops of the United States can be moved to good advantage with a fair profit to all. We, as fruit growers, at the present time are directly interested in how the war will affect the market price of apples during the coming winter. Few assume to be very definite in their expressions of prices. The prices obtained this year will in a large measure depend upon the judgment and ability with which the apple crop is handled. It seems wise to suggest to the growers, first, that every expense connected with harvesting and marketing the apple crop should be done at a minimum. Economy in every feature of the business should be our watchword. Second, extreme care should be exercised not only by the grower but by the packer and shipper in seeing that the apples are packed and graded strictly in accordance with the rules. It is a year when only good stuff should be packed, a year when everything in the nature of a cull should without a single exception be sent to the vinegar factory. Third, it seems wise to call the growers' attention to the fact that the best results will be achieved by able, intelli-

gent and wise marketing. Fourth, it is a year when every grower should select for his marketing concern one that has ability; one that is absolutely straightforward in business; one that has his confidence and is entitled to it to the fullest extent. If the grower will carefully follow these suggestions and act in good business judgment, then he can reasonably expect a fair price, which will pay a reasonable profit on the investment and for his year's work. Only the best results can be secured by such procedure and by such procedure there is a reasonable certainty, but by haphazard methods the only thing certain would be uncertainty.

Mr. H. C. Sampson.—It is announced that Mr. H. C. Sampson, secretary of the North Pacific Fruit Distributors, has resigned his position to engage in business for himself. Mr. Sampson was one of those who took an exceedingly active interest in the organization of the North Pacific Fruit Distributors and it may be truthfully said that no one connected with the association has worked harder or more earnestly for its success. He is certainly entitled to his share of credit for the organizing of the North Pacific Fruit Distributors. Mr. Sampson in his official capacity has visited and addressed the fruit growers of practically every fruit growing section in the Northwestern territory. Wherever he has gone he has invariably created a splendid impression. Mr. Sampson commands the good will and confidence of the growers throughout the Northwest, and we honestly believe all those who are associated with the Distributors will sincerely regret his retirement. Mr. Sampson enters his new field of work with the best wishes of all connected with the fruit industry of the Northwest.

The European War.—War means loss of life, loss of property, loss of business and devastation, in accordance with the magnitude, the number of people engaged in the war and its duration. Every nation engaged in the war suffers severely in every one of the particulars above referred to. The feeling in the United States over this war is one of sincere regret. America is universal in the hope that this war will be quickly and decisively settled, for the all-important reason that the quicker the war is over the less the loss will be in every respect. The present European war is so extensive that already the nations engaged have several million men actively engaged in warfare. It is to be regretted, nevertheless it is a fact, that the producing capacity of each one of these nations will be largely reduced, both in foodstuffs and other commodities, consequently there is a duty which the United States should assume, and that duty is to bend its energies to produce all of the necessities of life, so as to be in a position to furnish these nations, which will become depleted, with necessary supplies. In addition the United States has another role to play, which is equally important, if not

more so. It is the only one of the big powers not engaged in the present war, therefore the United States should follow the wise suggestion made by President Wilson in remaining neutral, not only in action, but in expression of public opinion, always holding itself in readiness so that at the earliest opportunity it will be in position to extend its services as peace-maker to be acceptable as such to the nations engaged in war. The United States must remain mentally free from prejudice and keep itself in a frame of mind to render justice in its advice to all nations engaged.

1914 Apple Crop Estimates.—It seems to be an invariable custom with everyone connected with the apple business to furnish estimates each year during the blooming season. The judgment of this is being questioned by many on account of the false impression which it invariably creates. It is a well known fact that an apple orchard may blossom profusely and still produce very little fruit. It is a fact that only one or two apples at the most in a cluster of eight or ten blossoms will make marketable apples. Every blossoming season is usually followed by a very heavy shedding, and even after this comes a dropping after the apples are formed.

This year the estimate went out unusually heavy and many are still maintaining that the crop will equal the blossom estimate. In other words, it is always extremely difficult to correct the first impression, even though it be erroneous. Early in the season the estimates from the Northwest in carloads were placed by some as high as 25,000 cars. Later they were reduced to about 15,000 cars, and at present it is claimed by some of those connected with the large organizations that the Northwest will not ship more than nine or ten thousand cars. A very recent estimate published in the newspapers gave Colorado something like 7,000 cars. On good authority we understand Colorado does not expect over 1,500 cars. A recent estimate put Oregon down for about 5,500 cars. The writer, who is very conversant with Oregon conditions, does not believe the crop of marketable apples in Oregon will exceed 2,500 cars for the year 1914. Without question the unsettled marketing conditions existing at the present time will result in high class grading rules being adhered to very strictly, which will mean that only the best quality will be packed and shipped to market, the balance going to the canneries, evaporators and vinegar plants. This will be a large factor in reducing the quantity to go on the market.

The Woolly Aphid of the Apple

The woolly aphid is one of the most insidious and dangerous of apple pests. It occurs on the roots and above ground, also on the branches. The branch form can be easily controlled by contact insecticides, but it is practically impossible to stamp out the aphids on the roots. Winter weather of Eastern Washington is usually severe enough to destroy

what individuals are above ground, so that developing colonies in the spring come from wingless aphids of the roots or crown. These aphids are apt to locate on a bruise on the bark and soon become conspicuous because of a growth of "wool." Their feeding poisons the tree and results in a local swelling and ultimately in a weak tree with small sized fruit. After a couple of generations some winged individuals appear, which migrate to other apple trees, thus spreading the pest. The summer generations are less vigorous, and in early fall other winged migrating individuals are produced. These rarely seek apple trees, but are attracted to elms, if near by, and there give birth to wingless sexual aphids, the females of which produce a single egg, which is laid for the winter deep in a crack of the bark. The following spring the insect inhabits the leaves of the elm, forming rosettes of curled leaves. Its third generation is the winged spring migrant that returns to the apple tree.

The woolly aphid is prevalent on nursery stock, and thus gets access to a new region. Apple stock showing swellings or galls should not be planted, and elm stock should be carefully searched for black eggs. When the woolly aphid occurs above ground it can be destroyed by a light swabbing of alcohol, gasoline or kerosene, or if numerous by a spraying of tobacco-soap, such as is given for green aphids. The underground form cannot be effectively reached and is consequently most dangerous. Kerosene emulsion, lime-sulphur or an abundance of tobacco dust applied to the roots have been recommended, but give only partial benefit. Plowing and cultivation to force the roots down are thought to be helpful, since the aphids do not thrive much below a foot. Northern Spy trees are remarkably free from attack, and such stock would prove valuable in a badly infested district. The woolly aphid is too delicate and weak to force its way through the soil, but it will work along cracks and roots and thus spread through the orchard or nursery row. To prevent branch infection from below, the trunk may be banded with equal parts of rosin and castor oil melted together and applied on burlap or cotton strips, or if in a dusty district where this method would be inapplicable, it has been suggested to pack around the trunk of the tree a good layer of sand, through which the aphids cannot crawl.—A. L. Melander, Entomologist, Washington State Experiment Station, Pullman.

Crude Oil Emulsion for Winter Spraying

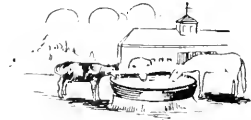
In reply to numerous inquiries received at the State Experiment Station, Professor A. L. Melander has prepared the following statement: In those districts of the state where sulphur-lime has failed to give satisfactory results as a winter spray against scale insects, aphids, red spider and the like, it may be advisable to give a trial of crude oil

emulsion. Although these emulsions have not been tried for many years on the Pacific Coast, yet where they have been used they have given excellent results. The oil spray covers the tree better than sulphur-lime does, so that it does not require so much to complete the spraying. It penetrates into cracks and crevices and, since it is not watery like sulphur-lime, it wets the eggs and bodies of the insects.

In the preparation of crude oil emulsion, California crude oil, which has an asphalt base, should be used. The emulsion is made by dissolving twenty pounds of fish oil (or whale oil) soap

in twenty-five gallons of hot water. Four pounds of 98% lye is then dissolved in a couple of gallons of water, added to the soap, and enough water run in to make the full amount up to 177 gallons. This mixture, in the spray tank, requires an efficient agitator, of the propeller kind, to emulsify the oil. The agitator is started running, and when at full speed the oil is slowly poured into the tank. Twenty gallons of the crude oil complete the formula, and when this has been churned to an emulsion the spray is ready for use. After the oil has been added nothing else must be put into the tank, or some

Mitchell
Water Systems Satisfy



A PLENTIFUL SUPPLY OF WATER on the farm is the best investment a farmer can make.

FROM A FINANCIAL STANDPOINT it means more healthy stock, big saving in your own time and labor, protection of your buildings against fire and increase in selling value of your property.

FROM A FAMILY COMFORT STANDPOINT it means that the most desirable of city conveniences are placed within your reach, as a result of which the city loses much of its appeal to your boys and girls and they are far more contented to stay with the farm. Running water relieves your wife and daughters of a great deal of drudgery and makes their housekeeping a pleasant task, just as it decreases your work in the barn-yard, dairy house or garden.

MITCHELL WATER SYSTEM OWNERS, to the number of a thousand or more, will testify to the truth of these statements. From them you can learn that a water system is beyond question a thing that every farmer should install as soon as he can possibly do so. They will tell you of the proven reliability of the Mitchell Water System and of the stability and square dealing policy of the house which for six years has been selling and installing Mitchell Pneumatic Systems. They will tell you that the first cost of the Mitchell System is very reasonable and the second or operative cost comparatively nothing.

IF YOUR HOME IS WITHOUT WATER under pressure you should look into these things. Let us send you our new booklet *Through the Eye of a Camera*. From cover to cover this booklet is full of pictures of Northwestern homes supplied with water under pressure by the Mitchell System. Let us send this booklet together with our catalog showing the principle of operation and make-up of our system. **We want you to have these books** whether you are thinking of installing a water system or not. We will send them without obligation, free and post-paid. Isn't it worth your while to sign and send in the coupon attached to this ad.?

Mitchell, Lewis & Staver Co.,
Portland, Ore.,
Spokane and Boise.

Gentlemen: **BF**
Please send me your free book, "Through the Eye of the Camera."

Name _____
Spokane and Boise. _____
P. O. _____

LILLY'S
BEST GRADE
GRASS AND CLOVER SEEDS
99 PER CENT PURE
FOR FALL SOWING
THE CHAS. H. LILLY COMPANY, SEATTLE

Get these books before you build
If you're thinking of building a new house send for the **H. L. F. Prize Plan Book** Worth \$1. Outside views, floor plans, descriptions, estimates of 100 good homes.
H. L. F. Barn Builder's Guide Twenty good barn plans, descriptions, estimates for etc. Save big money on lumber and millwork. Buy direct of **HEWITT-LEA-FUNCK CO.**
210 Union Ave., Seattle, Wash.

Orchardist Supply House
Franz Hardware Co.
Hood River, Oregon

ORCHARD
Wanted—Situation as manager of new or young commercial orchards. The very best references. Over 25 years among orchards and fruit trees. 6 years in irrigation district. 3,800 acres of orchards prove my work. Specialty—Preparing land, cultivation, handling of men and teams, planting, tree diseases, etc. "J. M." care "Better Fruit."

Ship Your Apples, Pears, Peaches Plums, Prunes, Etc.
to
C. H. WEAVER & CO.
65-67 West South Water Street
Chicago, Illinois
For 50 years one of Chicago's leading commission firms

of the oil might separate and thus make the spray dangerous to use.

There are several ready-made soluble oils on the market, in which the oil has been combined with the alkali and soap so as to be ready for use by simply adding water. There are also prepared soaps that need merely the addition of the oil and water to make the complete spray; but in any case a good agitator will produce a finer emulsion than merely stirring in the oil and water.

Critical experiments conducted last spring showed the great value of the oil spray, killing the scale almost immediately, where the sulphur-lime failed to show any practical effects for weeks after the application. However, in districts of Washington the standard lime-sulphur still is proving satisfactory, as it quickly kills the scales, and in such places there is no object as yet to be radical in changing the methods of insect control.—Washington State Experiment Station Bulletin.

Alfalfa in the Orchard—Silage

By W. S. Thornber, Lewiston, Idaho

THE seeding of orchards to alfalfa has in the past been regarded by most orchardists as a hazardous risk for the best good of the orchard in the future. However, later and more thorough investigations reveal striking advantages in favor of alfalfa in orchards under certain definite conditions. In fact, many examples are now on record that go to prove without a doubt that profitable returns may be realized from alfalfa as an intercrop or mulch crop in the orchard. An analysis of the benefits of alfalfa in orchards shows a three-fold advantage to this method for orchard tillage. A brief summary is as follows:

1. For the good of the soil: (a) By adding nitrogen and humus; (b) By making more plant food available; (c) By loosening hard subsoils; (d) Increasing water-holding capacity; (e) As a soil cover during hot, dry parts of the season.

2. Alfalfa directly benefits the tree: (a) Prevents rampant, excessive wood formation; (b) By checking the wood growth increases permanent as well as early fruitage; (c) Prevents winter injury by causing early maturity; (d) Increases the color and quality of most orchard fruits; (e) In pear orchards is recognized as one of the approved methods of combatting pear blight; (f) In apple orchards is the most satisfactory remedy known for rosette, little leaf or winter desiccation.

3. Alfalfa in the orchard may be made a source of income: (a) By compelling earlier and better fruitage; (b) By producing from two to eight tons of marketable or usable hay per acre.

Just as alfalfa in the orchard may become highly beneficial as well as financially profitable, there is danger of it becoming very detrimental to the permanent good of the orchard. Examples of this kind are frequently found where alfalfa is sown among very young trees or too close to trees that are not especially vigorous. Another danger is sometimes seen in over-irrigated orchards, especially where large quantities of water are applied for the benefit of the alfalfa regardless of the welfare of the trees. Under no circumstances should alfalfa be sown in non-irrigated orchards unless the soil is extremely well sub-irrigated.

Silage bears the same relation to hay and dry fodder as canned vegetables do to dried ones. It is juicy, tender, and is relished by stock. The acids of silage

help to keep the digestive tract in a healthy condition, and also act as an appetizer. In winter silage furnishes a green feed; in summer it saves the pasture and affords feed during a dry season. It is a roughage, and lacking in protein, and hence should be fed with some ground grain, alfalfa meal, cotton seed meal, oil cake or some concentrate. Silage is kept in the silo much as fruit is kept by canning. Bacteria can live only if they have a supply of air. The fresh silage ferments for a few days until the air contained in the inter-spaces is exhausted. If the silo is tight so that no more air can enter, there is no further fermentation, and the silage will keep in this condition indefinitely. Tests have proven that if it has been kept airtight, silage several years old is as palatable and nutritious as that put in the current year.

In building the silo the points to be observed are that it shall keep the moisture in and the air out, and be strong enough to withstand the pressure from the silage as it settles. The bottom and sides must be smooth and perpendicular, so the silage will settle evenly. If there are projections, or if the walls are not absolutely straight, the silage will settle unevenly, leaving air pockets around which there will be some spoiled silage. The round or cylindrical silo is the best form, as it has less wall space, hence less silage surface to guard against spoilage. Round silos are more easily filled, as it is impossible to pack silage into square corners.

The following table gives the amount of daily ration of silage required for wintering and fattening cattle, feeding dairy cattle, and for sheep:

	Pounds
Wintering calves, 8 months old.....	15 to 25
Wintering breeding cows.....	30 to 50
Fattening beef cattle, 18-22 months old—	
First stage of fattening.....	20 to 30
Later stage of fattening.....	12 to 20
Feeding dairy cattle.....	30 to 50
Wintering breeding sheep.....	3 to 5
Fattening lambs.....	2 to 3
Fattening sheep.....	3 to 4

Winter Pruning of Fruit Trees

The average farmer and fruit grower has very little conception of the proper pruning of fruit trees. It is generally done at any time during the winter season when the tree is dormant. If no time is at hand it is delayed for another year. This system of pruning is disastrous. The fruit trees should be regularly pruned, regardless of the amount of pruning required. If pruning is done

every year the tree will get into the habit of producing a certain amount of wood and fruit, and there is little occasion for severe pruning. If the pruning during the first three or four years of an orchard after planting is properly performed, there will subsequently be little need for removing large branches. The pruning will then consist merely of the removal of superfluous shoots or branches that interlace, and this kind of pruning does not upset or disturb the growth and fruiting habits of the tree. Winter pruning should be delayed until March or until after cold weather has passed. Pruning during December and January is often disastrous in Eastern Colorado, as the wounds are apt to crack from the cold and thus make lodging places for diseases. Further, the wounds made at this time will not heal over so rapidly, while if pruning is done late in the season the wound will not crack and will heal over as soon as growth starts. If the removal of large branches is necessary, the wounds should be painted, using common thick white paint. Severe pruning in the winter also tends to increase and encourage the growth of water sprouts.—E. P. Sandsien, Colorado Agricultural College, Fort Collins.

Fall Treatment of Grasshoppers

The past summer has been unusually free from ravages by grasshoppers, but that is no guarantee that there will be no damage next year. The wise farmer will use the fall and winter months to put in practice methods of control. The only way to treat the grasshopper during the winter is to plow the ground where the pods and eggs are deposited to a depth of three or four inches. Generally the eggs are more abundant in some localities than others. This is very apt to be true regarding sod places along fences and ditch banks. With a spade in hand the farmer may investigate the various localities where eggs are apt to be found and discover their presence by examining the ground to the depth of two inches. After such a survey he will know whether certain sections need treating or not. It has been found at the agricultural college that if the eggs are exposed to the weather during the fall and also winter the greater proportion of them will be killed by birds and unfavorable climatic conditions.—S. Arthur Johnson, Colorado Agricultural College, Fort Collins.

Pruning for More Fruit at Less Cost

The purpose of pruning is to get more fruit and better fruit at less cost per box, said Professor V. R. Gardner of the Oregon Agricultural College, in addressing an apple growers' association. The shaping of trees is done by training, and we prune to modify fruit habits and control the amount and quality of the fruit. We can control this fruiting habit of trees only as we control the machinery for fruit production. The fruit spurs are the mechanism that the tree usually employs in its work of fruit-bearing. And pruning is generally regarded as the practice through which

The Little Wonder Steam Fruit Evaporator

The successful fruit grower of to-day and the future, is the man who will reduce the cost of production and

Save the Waste

We have designed an evaporator along original lines, that has all modern practical conveniences, without any of the draw-backs and delays so frequently found in other evaporators. The Little Wonder has a capacity of from 1 to 10 tons per day according to the number of tunnels.

For high class finished products produced by the Little Monday there is no equal.

The fastest, most economical, perfect and simplest evaporator on the market.

Demonstrations will be given at the Manufacturers' Land and Products Show, Portland, Oregon, October 26 to November 14, 1914; also at the office of the company, 207 Clay street, Portland, Oregon, by appointment.

For further particulars, illustrated descriptive matter, prices, etc., write

Oregon Heating Company

207 Clay Street, Portland, Oregon

Statement of the Ownership, Management, Circulation, Etc. of "Better Fruit," Published Monthly at Hood River, Oregon

Required by the Act of August 24, 1912.

Note: This statement is to be made in duplicate, both copies to be delivered by the publisher to the postmaster, who will send one copy to the Third Assistant Postmaster General (Division of Classification), Washington, D. C., and retain the other in the files of the post office.

Editor, E. H. Shepard. Post office address, Hood River, Oregon.

Managing Editor, E. H. Shepard.

Business Manager, E. H. Shepard.

Publisher, Better Fruit Publishing Company; E. H. Shepard, sole owner and publisher. Post office address, Hood River, Oregon.

Owners: (If a corporation, give names and addresses of stockholders holding one per cent or more of total amount of stock.) E. H. Shepard, sole owner.

Known bondholders, mortgagees, and other security holders, holding one per cent or more of total amount of bonds, mortgages or other securities: None.

Average number of copies of each issue of this publication sold or distributed through the mails or otherwise, to paid subscribers during the six months preceding the date of this statement: (This information is required from daily newspapers only.)

E. H. SHEPARD, Editor and Publisher.

Sworn to and subscribed before me this 5th day of October, 1914.

(Seal)

ERNEST C. SMITH,
Notary Public for Oregon.

My commission expires August, 1916.

we directly influence fruit spurs. All fruit growers know that we can prune them out and reduce their number. Many believe that we can stimulate their formation and vigor by certain pruning practices. These beliefs are founded upon careful observation and experience.

Nitrate of Soda on Old Meadows

On an old meadow which has not been properly fertilized a top dressing of nitrate of soda is almost certain to show very marked results. The farmer is likely to be so enthusiastic over the showing made that he at once concludes that nitrogen is the one factor needed to make his hay crop a profitable one. Right here lies the danger. While the first application of nitrate of soda may show these marked results, it is not by any means safe to conclude that nitrogen is the only element of fertility needed. Repeated applications of nitrate of soda may soon result in no apparent benefit, and even result in a final condition worse than the original condition. The first application of nitrate of soda shows such marked results

because there is a marked deficiency of nitrogen in the soil; but there is sufficient of the other fertilizing elements, particularly phosphorus and potassium, to balance the nitrogen used. The increased crop yields from the use of nitrate of soda make an increased drain upon the available phosphorus and potassium of the soil. No effort being made to replace these elements thus removed, the time very soon comes when no response is received from the application of nitrate of soda, because the phosphoric acid and potash have been depleted, or, in other words, are the limiting factors. As a rule, where nitrate of soda is used as a fertilizer it is a safe principle to use in connection with it some form of phosphorus and potassium, having in mind permanent results rather than a temporary increase due to the nitrate of soda.

PRACTICAL

orchard man and farmer open for position. Will consider working interest in equipped farm or orchard. Address "B," care of "Better Fruit."

Marketing Machinery of the North Pacific



L. J. BLOT
District Manager
Minneapolis



M. W. MUMFORD
District Manager
Butte



H. J. SCHIFFERLE
District Manager, Omaha
Later, City Sales, Chicago



WILMER SIEG
District Manager Oregon Division
Portland



E. A. FERHAM
Sales Manager
Spokane

Fundamental Principles, Etc.

Continued from page 16

sary for operation in true proportion that the number of bearing acres of citrus orchard owned or controlled by each member respectively bears to the whole number of bearing acres for which citrus fruits are delivered or engaged to be delivered to the association any time during the year such mem-

berships are issued. Even with such a provision in the by-laws, the "one man, one vote" principle is generally used in voting on the business operations of the organization.

There is a strong sentiment against the "one man, one vote" principle of voting when first presented to the average grower. The large grower fears control by smaller interests; the small land holders, domination by their larger neighbors. The history of the co-operative movement, both in Europe and in the United States, shows clearly that this adverse sentiment is a prejudice rather than an actual weakness in practical operation. Equality of membership strengthens the desire to co-operate, and men work together in business harmony just as they now do in the equal control of churches, schools and in governmental responsibilities.

A co-operative organization to be successful must be held together by a membership agreement or contract binding the members together for business purposes. In no other way can an association attain that degree of stability that is necessary in a business undertaking. The association must know definitely what it is expected to do, the volume of business to be handled, the expenses to be incurred and the preparation necessary to be made to transact its affairs in an orderly, economical manner.

Voluntary membership is usually suicidal in a co-operative association. In the last analysis the association can only succeed when the average member believes that the co-operative principle is sound; and that conviction must be strong enough to hold the members together when their opponents attack them insidiously and persistently. This faith must be founded on the sound business results of the organization, as well as on its larger influence on the development of the industry as a whole. Unless the benefits of the organization are large enough

to keep the organization intact, the members cannot be held together indefinitely by any form of contract; but the human nature of the average farmer has not evolved to that ideal point when a temporary advantage offered him by an opponent may not blind him to the permanent advantages of the association to which he belongs. A membership agreement is a steady influence on a grower who might be led astray by misrepresentation or by temporary dissatisfaction. Then, too,

Horticulturist and Farm Manager

Orchard or general farm manager seeks re-engagement this fall. Have had several years of practical experience in the management of a large commercial orchard. Am also thoroughly familiar with grain and livestock growing. Graduate of Western agricultural college. Address "B," care Better Fruit.

Mr. Fruit Grower

There are sprayers and sprayers, but ours is a sure

"Friend"

It matters not whether it's a large power sprayer or small—large hand sprayer or small—fittins and accessories for your present sprayer—or a new motor pump, tell your needs to the California Spray Chemical Company of Watsonville and they'll tell you the cost and serve you right.

"Friend" Mfg. Co.
Gasport, N. Y.



WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

J. & H. Goodwin, Ltd.

APPLE IMPORTERS

- Commercial Sale Room, Deansgate, Manchester, England.
- Floral Street, Covent Garden Market, London, England.
- Fruit Exchange, Victoria Street, Liverpool, England.
- Humber Dock Street, Hull, England.

AMERICAN ADDRESSES:

- 97 Warren Street, New York, N. Y.
- Youngs Hotel, Boston, Mass.

Consignments and Correspondence Solicited

The Paris Fair

Hood River's Largest and Best Store

RETAILERS OF

EVERYTHING TO WEAR

AGENTS FOR

HAMILTON & BROWN AND THE BROWN SHOES

HART, SCHAFFNER & MARX CLOTHES

MANHATTAN SHIRTS

JOHN B. STETSON HATS

NEMO CORSETS

Strictly Cash—One Price to All

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

t Distributors — Some of the Sales Staff



E. SMITH
Manager Central Division
Chicago



S. B. MOOMAW
European General Agent
London



C. W. HUBBARD
District Manager
Regina, Canada



J. T. RONAN
Traffic Manager and Claims Agent



DEPARTMENT MANAGERS
P. D. SPENCER
Auditor

there are large numbers of farmers who are opportunists. They have no interest in the industry as a whole. They are interested only in their own immediate success. In handling their crops they are rampant speculators. They follow a sharp-shooting marketing policy, trying to hit the high spots presented by an association, a buyer or a commission merchant and giving but lukewarm allegiance to any individual or association. The opponents of the co-operative system understand this

psychological trait perfectly, and unless the producer has formally bound himself to his association by a definite contract to handle all his produce through it for a given period of time they draw heavily from the membership by promising a larger return, or by playing upon his prejudices in other ways. It is an historical fact that a large proportion of the troubles and failures in the co-operative movement have been due to the irresponsibility of the membership whenever an association has been subjected to fire; and no one not experienced in the movement can have any conception of the degree to which misrepresentation, insinuation and other forms of creating disaffection are persistently kept before the co-operative producers by those who make an abnormal profit when his product can be handled individually. The same kind of misrepresentation is used in building up one association as against another when those who handle the business of a co-operative association are interested in profits, or derive their compensation from the volume of business handled.

The success of a co-operative organization depends primarily on the loyalty and stability of the membership; it depends further on efficiency in management. Efficiency in management cannot exist without stability of membership; nor can it be developed unless the members appreciate the necessity of providing an efficient management. The difficulty in most co-operative organizations is the lack of appreciation of the need of a high order of organizing and business ability on the part of the employes of the association. The common failure of co-operative associations is usually attributed to inefficient management; as a matter of fact it is due to the membership itself which has fallen short in securing skillful employes. The individual producer is likely to gauge the requirements of management by the size of his own business. He falls short in his

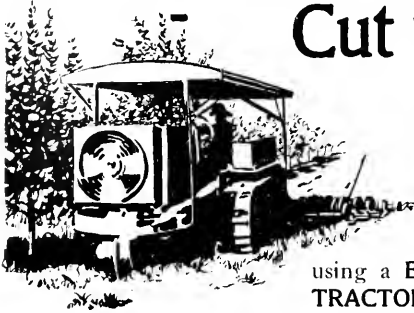
estimate when he acts on a board of directors and is charged with the responsibility of providing a management to handle successfully a collective business. Inefficient management is a measure of the degree of business efficiency of those who are charged with the direction of the affairs of the association; and unless the membership will sustain a board of directors in employing men of a high order of ability a co-operative association is short-lived.

Buy Your Plumbing Supplies
AT WHOLESALE
and install them yourself, which is easily done if you follow our suggestions.
A big saving guaranteed (quality considered) and money-back guarantee of complete satisfaction.
Write today and learn how we supply you direct from the factory. All kinds of pipe and fittings. Estimates furnished free.
STARK-DAVIS CO.
212 Third—249 Salmon
Portland, Oregon

Things We Are Agents For
Knox Hats
Alfred Benjamin & Co.'s Clothing
Dr. Jaeger Underwear
Dr. Deimel Linen Mesh Underwear
Dent's and Fownes' Gloves
Buffum & Pendleton
311 Morrison Street
PORTLAND, OREGON

**The J. B. Holt
Fruit Picking Sack**
(Patented)
I invented this picking sack and have used it in my orchard, handling from five to ten thousand boxes, during the last four years.
I am convinced it is the most practical and convenient picking receptacle on the market. It does not bruise the apples. It is not in the way of the picker, like a bucket. The picker can reach the highest limbs without inconvenience. It empties into the bucket slowly and carefully, without bruising. It has wide shoulder straps like suspenders, and does not have to be hung on the limb with a hook.
You can buy these of
OSCAR HILL, North Yakima, Washington.
C. H. ROSS, Wenatchee, Washington.
S. B. SIMONTON (address Hood River, Oregon), Hood River, Mosier, White Salmon and Underwood.
New agents' names will appear in September issue of "Better Fruit."
Price 75c. Pullman, Washington, \$1.75.
Special prices quoted on large quantities.
For further particulars and illustrated descriptive literature, write
J. B. HOLT
PULLMAN, WASHINGTON

**Vehicles and
Agricultural Implements**
THE BEST OF
ORCHARD AND GARDEN TOOLS
A SPECIALTY
Gilbert Implement Co.
HOOD RIVER, OREGON



Cut the Cost Per Box

Increase your profits by raising a bigger crop of better quality fruit.

You can do this by using a **BABY CATERPILLAR TRACTOR** to plow and cultivate.

The **BABY CATERPILLAR** is built for orchard work. It is only 58 inches high (without the canopy). It works close under the trees without hurting the branches. It turns short from one row into the next and works right up into the corners. The two track friction clutches make the difference—one side can be stopped while the other does all the driving. This track has more than eight times the bearing surface of round-wheel tractors—less pressure per square inch than a horse's hoof. Nearly a hundred orchard-

ists on the Pacific Coast are using the **CATERPILLAR** and increasing their profits.

The **BABY CATERPILLAR** has many uses outside the orchard—for plowing, hauling, clearing land, and for any sort of stationary work. There are two larger sizes—60 and 75 h. p.—for the heavier work, such as harvesting, logging, grading roads, etc.

There are other tractors, yes, but there's only one **CATERPILLAR**—**HOLT** builds it. Learn all about the **CATERPILLAR** in Catalog BE133.

The HOLT MFG. CO.

(Incorporated)
Spokane, Wash. Calgary, Alta.
Portland, Ore. Stockton, Cal.

CATERPILLAR

Reg. U.S. Pat. Off.

The management of a co-operative organization is more difficult than an ordinary corporation. The stockholders, not being experts in the affairs of the latter, do not often take an active interest in its details. The producer, on the other hand, is vitally interested in his own business and he is likely to take an active part, at least in giving advice concerning the conduct of the business. This is one of the most valuable assets in a co-operative organization if the manager is big enough to utilize it. Through the knowledge of the producer in the affairs of his association his interest and sympathy can be kept vital. If the management becomes autocratic, the interest of the member dies; if he is not big enough to work out a broad, progressive business policy, using such suggestions as are made by the producers in addition to his own knowledge and experience and the experience of his associates, he in turn loses his position. A management must possess tact, constructive ability, foresightedness, fearlessness in the conduct of the business and a clear conception of the real underlying purpose of the organization, if it is to succeed. The integrity of the management must be beyond reproach; it must be free

from entangling business alliances; it must be free from the participation in any secret profits arising directly or indirectly from handling the business of the organization; in short, the dealings of the management with the organization must be an open book, free from questionable business practices of every kind. The influence of the management, next to the loyalty of the members, exceeds all other influences and the success of a co-operative association depends on their working out in mutual confidence an efficient business system that is able to meet successfully all conditions as they arise.

A co-operative organization must be founded on a special crop and the loyalty in which it handles the product must be comparatively restricted. Special industries involve common problems to be solved by the producers, similar difficulties to overcome, similar trade practices and similar trade connections. The members of an organization that is formed to handle fruit, vegetables, poultry and general farm crops have no common ground to stand on, and these general associations have not been successful up to the present time because the membership cannot be held together. The citrus fruitgrowers of

California are all interested in increasing consumption, in extending markets, in reducing the cost of distribution and marketing, in securing reasonable transportation costs, and in the same public policy questions that affect the industry. They have therefore developed a vitality in their organizations that has been attained in no other agricultural industry in America. An organization founded on different crops, on the other hand, has a series of totally different problems to meet at one time, different business connections to form and different classes rather than one class of opponents to meet.


Sunshine Lamp
300 Candle Power **FREE**

To Try In Your Own Home
Turns night into day. Gives better light than gas, electricity or 18 ordinary lamps at one-tenth the cost. For Homes, Stores, Halls, Churches. A child can carry it. Makes its light from common gasoline. No wick. No chimney. Absolutely SAFE.

COSTS 1 CENT A NIGHT
We want one person in each locality to whom we can refer new customers. Take advantage of our SPECIAL FREE TRIAL OFFER. Write today. AGENTS WANTED.

SUNSHINE SAFETY LAMP CO.
241 Factory Bldg., Kansas City, Mo.





You Can Build This Home Yourself

We furnish the lumber, trim, windows, doors, cut and numbered to fit our plans.

Also paint, finish, stain, nails, hardware, plaster or interior wall-board.

Follow the plans with a hammer, easy, simple, quick, economical.

A permanent, substantial and attractive home results. Not portable. Satisfaction guaranteed. Illustrated catalogue FREE. Write today.

Ready Built House Company
978 Broadway, PORTLAND, ORE.

BARTLETT PRUNING TOOLS

are designed on scientific principles, made of the highest grade materials and sold on their merits.

We make a complete line, including our **JOINTED TREE TRIMMER**, and will be glad to send catalogue and booklet on pruning upon request.

No. 18, Pruning Saw
Price \$1.75

No. 777, Two-Hand Pruner
26-in. Ash Handles, \$2.00

Your dealer can supply you. If he does not, mail money order to us and we will ship prepaid.

No. 18 **BARTLETT MFG. CO.** No. 777
Boydell Building DETROIT, MICHIGAN



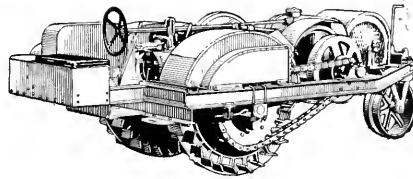
To be successful a co-operative association must sustain and develop the individuality and initiative of the different localities in which it operates. The units of the organization must therefore apply to a locality in which the soils, the climate and other conditions produce a similar grade of product. If the products vary widely in color, texture, form or in other character, on account of the conditions under which they are grown, the producers cannot be held together because the grades cannot be made similar. The attempt to have a single organization cover a wide territory is therefore likely to fail. No amalgamation of the farmers of different localities in a common organization has ever been successful. On the other hand, the orange growers of one locality, or of similar parts of a locality which produce similar grades of fruit, may organize to prepare their products for market under distinct local brands. Those of another may do the same thing, and a large number of local units may be formed as long as the unit embraces a produce of similar grade and character. Then as a matter of economy and efficiency these local units may federate and create a central agency through which they handle their common problems. But each local unit preserves its local character and develops its local pride and reputation by selling its product under a brand that is the exclusive property of the local association. In addition to its local brand it may also add a brand of the central agency in order to give it greater selling power in all parts of the country; but no local unit should use the brand of a central agency exclusively without using its own brand at the same time.

The outcome of a co-operative organization formed to handle the growers' product will succeed or fail on the skill and integrity with which the product is harvested, handled, graded and packed. The limits of this discussion will not permit this part of the subject to be handled in detail. A few fundamental principles, however, can be stated:

1. In the average association, the individual grower does not possess sufficient skill to harvest, handle, grade or pack his product carefully, uniformly or attractively enough to permit the association to establish a standard of quality, and therefore acquire a reputation for its brands or grades. A uniform standard of quality in the brands shipped by an association is fundamental to success. This seems like a self-evident axiom, but the fact is that this is the rock on which many co-operative organizations have been dashed to destruction. Poor handling in harvesting, improper handling in preparing the product for sale, careless or dishonest grading, or lack of skill and knowledge in grading and packing,—these are common rather than unusual conditions in the product of many co-operative associations where the handling of the product is controlled by the individual members. The output of an association, therefore,

RUMELY

Power Farming Machinery



Like the Horse's Hoof

The patented ToeHold drive wheels grip the soil without packing it, and give the flat backward pressure that enables the ToeHold to deliver maximum power at the draw-bar.

The ToeHold is low, narrow and light, weighs 8400 lbs. without extensions or shields; 10,000 lbs. fully equipped. Height with limb shields is 5 ft. 3 in. and with extensions it is only 8 ft. 6 in. wide.

It is designed especially for orchard and vineyard cultivation, but is equally good for plowing, hauling and other power jobs.

All parts are protected from dirt. An air clarifier keeps dust out of carbureter. The ToeHold is made on the coast, and used everywhere. It burns gasoline.

Ask for Rumely catalog F 33, a complete description.

We have good stationary engines, too. The Rumely-Falk burns kerosene, and stove-tops, and the Rumely-Olds burns gasoline. Both are leaders. Every Rumely machine is backed by Rumely service—49 branches and 11,000 dealers. Supplies and parts without delay.

RUMELY LINES

Kerosene Tractors	Engine Gang Plows	Gasoline Engines	Cream Separator
Gasoline Tractors	Threshing Machines	Oil Engines	Corn Machines
Steam Engines	Clover Hullers	Baling Presses	Lighting Plants

RUMELY PRODUCTS COMPANY
Chicago (Incorporated) Illinois

You Men Who Ship—Listen!

Do you know how much money you could save in one year if you would sell your own products through the BLUE BOOK, with the assistance of the PRODUCE REPORTER Co.?

We Will Help You Figure It Out

Write us frankly just what your situation is, and we will tell you exactly how we can help you—we will tell you what it will mean to you to be a member of this organization, and to have, right on your own desk, the latest BLUE BOOK with its mass of valuable information.

THE PRODUCE REPORTER CO.

NEW YORK
Fruit Trade Building

"The Fruit and Produce Man's Best Friend"

CHICAGO
Bell Telephone Building



**No Other Like It
In the World!**

If you alight from the train at Durham, N. C., the first thing you note is the delightful aroma and sweet fragrance which hangs over the whole town. This proceeds from the "Bull" Durham factory. Never was there so distinctive and lingering a flavor as that of "Bull" Durham; there is no other like it in the world.

"Bull" Durham smokers notice this, the moment they roll a cigarette and light it. The smoke has a delicious, relishable aroma that is wholly unique and individual. You get it in no other tobacco. It is produced by a generations-old process known only to the makers of "Bull" Durham.

**GENUINE
"BULL" DURHAM
SMOKING TOBACCO**

"Bull" Durham has been the standard smoking tobacco of the world for three generations. "Bull" Durham hand-made cigarettes are a distinctive form of tobacco enjoyment. Their flavor and freshness are delightful. Get "the Makings" today and "roll your own."

Ask for FREE
book of "papers"
with each 5c sack



FREE An Illustrated Book-let, showing how to "Roll Your Own," and a Book of cigarette papers, will both be mailed, free, to any address in U.S. on postal request. Address Room No. 1105, "Bull" Durham, Durham, N. C.

THE AMERICAN TOBACCO COMPANY

acquires no stable merchandizing value. The brands are not a guarantee of quality.

2. A reputation for uniformity in grading and packing can only be acquired when the product of all of the members is handled under uniform conditions. The standardization of a product can result only from standardizing its handling, grading and packing.

3. A uniform product can be established by having the product of the individual members handled by the members, under the supervision of the association, or for the members by the association. The former method is employed successfully in some deciduous fruit associations; the latter is the usual method in the citrus fruit associations. The conditions which lead to either method is a local as well as an industry question. In the citrus industry the crop is harvested over a long period of time, it is comparatively non-perishable and it is possible to systematize the methods of handling, assemble the product in a central packing house and grade and pack it under standard rules. Without this standardization of handling, grading and packing, no co-operative association can acquire an asset in the reputation of its brands. With standardization, it can acquire a reputation which makes its output sought after and for which the trade will pay a premium. A practical difficulty in handling a co-operative association lies in the fact that every member thinks that he produces a product that is the equal or superior to that of every other member. The handling of this condition is one that tests the tact of the most successful manager. It is a practical condition, however, and not a theory that must be met with firmness, with justice and with patience by every co-operative association.

There are many other fundamental questions that might be discussed in this article. All of the important ones have not been touched, but the few that have been discussed are considered among the most vital to a co-operative organization.

Apple Boxes

Growers who have not placed their orders are now liable to require

Rush Shipments

The product of a dozen mills is at the service of our customers. We can SHIP QUICK.

All Western Soft Pine

Write us at once, and let us get your order on file, so you can view to Rush Shipment when you know just what you will need.

Western Pine Box Sales Co.

614-615 Empire State Building
SPOKANE, WASH.

Mention "Better Fruit"

WELCH & WELCH 3-5 W. So. Water Street CHICAGO

SPECIALIZE ON CAR LOTS

Apples, Peaches, Pears

Get in touch with the Livest House in Chicago Write Today

Members { National League Commission Merchants
Western Fruit Jobbers and
International Apple Shippers Association

Big Waste of Fertilizing Material

(Office of Information, United States Department of Agriculture)

SEVENTY-FIVE per cent of a highly valuable fertilizing material in the form of tankage and blood from the country slaughter of food animals is being wasted throughout the country districts. In addition \$22,000,000 worth of ammonia from which ammonium sulphate, another valuable fertilizing material could be made, is annually wasted by the practice of making coke in the bee-hive type of oven, according to a recent bulletin of the Department of Agriculture.

Tankage, a product of slaughter houses consisting of such waste material as bones, horns, hoofs, hair, etc., contains a large percentage of nitrogen and other products used in commercial fertilizer, and in the larger packing houses is carefully saved. In country

killing, however, only 25 per cent of the tankage and blood are saved for fertilizer. The nitrogen content of tankage is said to vary from 5 to 8 per cent and its phosphoric acid content between 5 and 12 per cent. Dried blood is perhaps the richest in nitrogen of all the organic materials used in the fertilizing industries. Unadulterated blood when quite dry contains 14 per cent of nitrogen, but as obtained on the market its content varies from 9 to 13 per cent. From the figures estimated by the Bureau of Animal Industry, Department of Agriculture, as representing the total slaughter of cattle, calves, swine and sheep in the United States, in 1912, it has been calculated that if all the materials rendered available by this slaughter had been saved and converted into tankage and dried blood, they would have produced 222,535 tons of tankage and 79,794 tons of dried blood. The introduction of a co-operative system among American farmers undoubtedly would result in an increased utilization of blood and tankage for fertilizing purposes. In Denmark country killing is being practiced on a co-operative basis in small country abattoirs and the blood is carefully preserved.

The loss of ammonium sulphate, which compares favorably with sodium nitrate as a plant stimulant, in the distillation of coal for the production of coke, is described in the bulletin as follows: "In the main, coal is distilled in this country in that form of coke oven, the bee-hive oven, which does not admit the recovery of the distillation products. Instead, they are allowed to go to waste. So we are indebted to the by-product recovery oven for the main supply of ammonium sulphate. The amount recovered is valued at about \$4,000,000, while the recoverable ammonia annually destroyed in the coking processes by the bee-hive ovens is valued at \$22,000,000. . . . At the beginning of 1912 there were 1,624 by-product coke ovens in operation in the United States and 698 building."

The great product of Chile, sodium nitrate, possesses less nitrogen content

(15.5 per cent) than ammonium sulphate. The United States, however, imports a great quantity (in 1911, 70,000 tons) for use in agriculture, owing to the deficient supply of other fertilizers in this country. This is only a small part of the total amount of sodium nitrate America imports yearly from Chile, as it has many other uses. The more intensive agriculture of re-

The Question of the Day

With the fruit grower is, how can he derive a revenue from his overripe and unsalable fruits?

It can be done. It is being done. How? By the use of the new and up-to-date process of

DEHYDRATING

Which is the cheapest, quickest and best process ever devised for preserving fruit without changing the taste or flavor; is clean and sanitary. There is always a market for this product. Can be operated by anyone. Capacity to meet all requirements.

For descriptive booklet address

Luther Vacu-Dehydrator Co.
SPOKANE, WASHINGTON



Main 8582 - A 2695

Vacuum Cleaners

DUNTLEY AND OTHERS

Electric and hand power. The only Exclusive Vacuum Cleaner Store in the state. If we haven't what you want, we will get it for you. All machines fully guaranteed. Other machines taken in exchange.

W. L. BENTLEY & CO.
No. 473½ Washington St.
Portland, Oregon

Save \$35 to \$50

Yes sir, I'll save you \$35 to \$50 in the first cost alone on the best, most modern, most sanitary and closest skimming cream separator ever built. When you buy the

New Galloway Sanitary
—you pay just one small profit above actual cost of materials and labor. Why pay any dealer \$95 to \$110 for an inferior machine. Buy direct and save one-half. Get my

Special 1914 Offer and 90 Days FREE TRIAL

test of this machine right on your farm. The new Galloway Sanitary skims to a trace, gears run in oil—easy to run—easy to clean. Sold direct. Backed by \$25,000 worth of money for one catalog and special 1914 offer that will help you get your machine partly or entirely without cost. In the soil. Write today.
WM. GALLOWAY COMPANY
1053 Galloway Station Waterloo, Ia. 463

YOU WANT THE BEST SPRAYER

You want to save time, temper, trouble and trees. You want to raise fruit that brings the highest prices. You want to know all about our sprayer before you buy. There is more you ought to know. Do You Want To Know The Price?
Write for Catalogue free
REIDSON MACHINERY CO.
Manufacturers 182 Morrison St., Portland, Ore.

SPRAY
The Morrill & Morley Way
Use an Eclipse Spray Pump.
Used by the U. S. Department of Agriculture. Its construction is perfect. Illustrated catalogue free.
Morrill & Morley Mfg. Co.
Box 12 Benton Harbor, Mich.
Eclipse Spray Pump

Bean Power Sprayers



"The Bean Is The Best"

You want a sprayer that will throw the mixture on at the necessary high pressure—a sprayer that will stand the wear and tear of hard service in the field—a sprayer that will last—a sprayer that is easy to operate and does not require constant repairing and adjustment. Then get a "BEAN." Made in five sizes—all very reasonably priced.

Send for Catalog 28-A—Just Issued

It illustrates and describes the entire BEAN line of Hand and Power Sprayers and Pump Accessories, and explains the 21 Distinctive Bean Features; Porcelain-lined Cylinders, Rustless Ball Valves, Underneath Suction, Steel Frames, Pressure Regulator, Bean Patented Cut-off, etc., the result of 27 years' experience. Get Catalogue 28-B for Centrifugal Pumps; 28-C for Opposed Gas Engines.



BEAN SPRAY PUMP CO.

213 West Julian St., San Jose, California
Eastern Factory: Berea, Ohio

cent years has emphasized the demand for nitrates, and the fact that the Chilean beds of nitrates have been surveyed and figures have been obtained which make possible a fairly close estimate of the amount of nitrate remaining there, should stimulate the manufacture of nitrogenous substances suitable for fertilizer manufacture and serve as a warning against undue waste.

Artificial nitrates have become commercially important to supply the demand in this country, calcium cyanamide being perhaps the most nitrogenous material manufactured for fertilizer purposes. It is prepared from calcium carbide and free nitrogen, the latter being prepared from the atmosphere by the removal of oxygen. This industry is considered to be as yet only in its infancy, and with the increased capacity of existing factories and extensions now under way should prove an important factor in the present source of nitrogenous fertilizers.

Fall Plowing for Insect Pests

Fall plowing is one of the most effective remedies known for insect pests. It is, however, more of a preventive than a cure, for the insects destroyed by this method are, for the most part, in a dormant or resting stage, doing little or no damage, but getting ready for the next season's depredations. This remedy alone is not to be relied upon for the complete eradication of any insect, but as a supplementary method of combat it is of considerable value, and against some insects it is the remedy of first importance. All of the following insects, recognized as more or less injurious to various crops in our state, can be controlled to a considerable extent by fall plowing:

Colorado Potato Beetle. This insect is only too well known to people from the Eastern and Middle states. It has at last established itself in Washington. The mature insect is a half-round beetle about the size and shape of the half of a garden pea, and has ten longitudinal black stripes down its back. The larval stage is a plump, slimy slug found feeding on the potato leaves and vines. The insects winter in the ground and fall plowing will destroy many of them, but as the summer treatment is so effective, the practice of fall plowing is rarely followed.

Corn Ear Worm. This is the common injurious worm found in ears of corn, especially sweet corn, in all parts of the country. When fully grown the worms drop from the ear to the ground, where they remain over winter just beneath the surface. The very best treatment for this pest is fall plowing, which turns some of them to the surface, where they are killed by exposure to the weather, while others are turned under and crushed.

Cut Worms. These caterpillars are more or less injurious to most all kinds of garden, field and orchard crops. They work mostly at night, and hide in the soil during the day. They winter

MILTON NURSERY CO.

A. MILLER & SONS, Inc.—MILTON, OREGON

Pear, Cherry, Apple, Prune, Peach. Full line Shade & Ornamental Stock

Quality in Nursery Stock is a condition, not a theory; it is something we put into our trees, not say about them. Thirty-five years' experience enables us to do this.

SALESMEN WANTED

A Catalog and Special Prices on Request

The Orchard Heater that Lights Itself

Announcement to Fruit Growers



It Lights Itself

After many years of experimenting, we have succeeded in perfecting, and are now able to offer to the FRUIT GROWER, our **AUTOMATIC ANTI-FROST STOVE**; the Best and Cheapest Insurance against damage by Frost to trees in bloom or setting fruit. The **AUTOMATIC ANTI-FROST STOVE** is the **ONLY SELF-LIGHTING** and **OPERATING ORCHARD HEATER** in the world.

Send for Catalogue and Price List

The Anti-Frost Stove Co.

621 Main Street, CINCINNATI, OHIO

in the ground. Fall plowing will not only kill many of these cut worms, but will also destroy any weeds upon which they might feed the next spring. In this way any worms not killed outright will starve the next spring or have to move to other land to obtain food.

Grasshoppers lay their eggs in the fall in the uncultivated ground, such as pasture land or wild scab land on the hillsides and along the roadsides and fenceways. Wherever the grasshoppers have been at all plentiful the past summer one should look for the female grasshoppers, with their abdomens sticking down into the ground, in the act of egg-laying. Where there are many of these females laying eggs in this manner the land should be plowed in the late fall to turn under the eggs and thus prevent a crop of grasshoppers the coming year.

Strawberry Crown Miner and Strawberry Root Borer. These two insect pests are well known to all strawberry growers. The only effective remedy for these pests is fall plowing of the infested patches. Plow up and destroy the vines found infested.

Tomato Worms. The large caterpillars commonly found destroying the tomato vines are, in most instances, easily destroyed by hand picking, but if it is practicable this treatment may well be supplemented by fall plowing to expose the "jug handled" pupae overwintering in the ground.

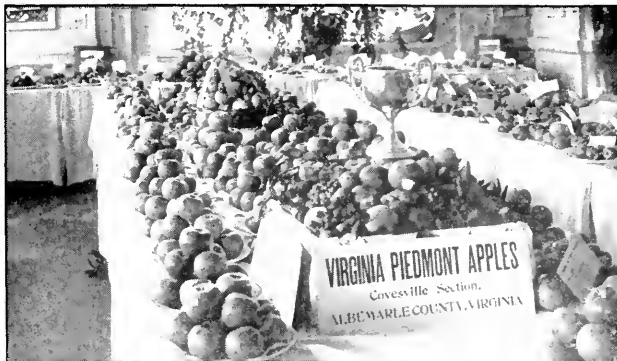
White Grubs. These are the larvae of the "June bugs" or "May beetles." They are most frequently found in new land. The most effective remedy for this pest is to break up the sod land in the late fall and turn hogs in on it to devour the exposed grubs. Late fall plowing alone will destroy many of the grubs, especially if the weather is very cold when the plowing is done and for some time afterward.

Wire worms are among the most difficult insects to combat. They are the long, slender, whitish brown grubs found in the soil in all parts of the country. The adult insect is the click or snapping beetle. The larva transforms to pupa in the fall and remain in that stage over winter. The most effective remedy for this insect is fall plowing. If this practice is followed for a couple of years the wire worms will be worked out of the land.

More detailed information on any of the above insects or any other injurious insects will be given upon request by M. A. Yothers, Assistant Entomologist Washington Experiment Station, Pullman, Washington.

Importance of Live Stock and Crop Rotation

The importance of keeping live stock and of practicing a rotation of crops in maintaining the producing capacity of the soil is becoming more apparent each year on the State College farm. Three plots show this fact very strikingly. One plot has been growing wheat continually every year since



Virginia Apples Win Grand Sweepstakes

AT THE Annual Meeting of the International Apple Shippers' Association, held at Boston, August 5-7, 1914, an exhibit of 20 varieties of apples grown in the Covesville orchard district of Virginia and exhibited by Dr. J. B. Emerson won the **Grand Sweepstakes Cup** over all exhibits from North America.

Covesville is located in Albemarle county, Virginia, in the famous Piedmont section. Equal advantages for fruit growing are also found in the

Mountain and Piedmont sections of Virginia, North Carolina, Georgia, Alabama and Tennessee. This territory is all tributary to the

Southern Railway's Lines

Prof. H. E. Van Deman, formerly U. S. Government Pomologist and now Associate Editor, Green's Fruit Grower, Rochester, N. Y., says:

"There is not in all North America a better place to plant orchards than in Virginia. There are no apple lands that I have seen in any state that quite come up to the rich mountain coves of the Appalachian mountains."

Good Orchard Lands from \$15 an Acre Up

The Great Markets of the East and the Atlantic export points, being so near to the apple districts of the South, save at least 50 per cent. in cost of transportation over Western fruit growing sections. Fast freight service puts perishable Southern fruits on Northern Markets in 48 hours.

M. V. RICHARDS, Land and Industrial Agent, Room 13 Washington, D. C.

What he says of Virginia applies to all Southern orchard districts.

It is possible in some sections to obtain good orchards in full bearing at far smaller costs than equally as good orchards in other sections. It does not require a fortune to start an orchard in this nature endowed region. You can purchase

Further Information on the South as a fruit growing, farming and industrial section will be promptly supplied. Ask for our free magazine the "Southern Fields" and booklets on the states of Virginia, North and South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee and Kentucky.

Wanted Position

As foreman or superintendent, by an expert fruit grower and packer. Also familiar with vegetable, stock and other farm crops. College and practical training. Distance no objection. References. Address S., care "Better Fruit."

F. A. BISHOP, Secretary
HOOD RIVER ABSTRACT COMPANY
HOOD RIVER, OREGON
ABSTRACTS INSURANCE
CONVEYANCING

Ground Phosphate Rock

The Natural Plant Food and Permanent Soil Builder

1,000 pounds per acre once in each four years will cost about \$1.00 per acre per year. At Pennsylvania State College \$1.05 invested in Rock Phosphate gave increased yields of \$5.85—over 500%. At Maryland Experiment Station \$1.96 $\frac{1}{2}$ gave \$22.11—over 1,000%. At Ohio Station each dollar paid for itself and gave \$5.68 profit. At Illinois Station \$2.50 gave the same return as \$250 invested in land.

Each ton contains 280 pounds of phosphorus, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way

United States Phosphate Co., Salt Lake City, Utah

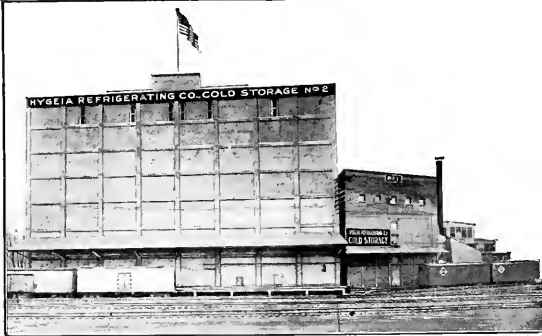
WRITE FOR LITERATURE

"Perfection of fineness in grinding," our motto

HYGEIA REFRIGERATING COMPANY

ELMIRA, NEW YORK

CAPACITY
35 CARS PER DAY
300,000 BOXES



EVERY FACILITY
is offered for the successful
storage and marketing of
Boxed Apples
for domestic and
export trade.

Fireproof Warehouse
Lowest Insurance Rates
Four Trunk Line Railroads

Special Outgoing Storage
in Transit Rates
Storage rates, etc., quoted
on application

1899 without any manure or other fertilizer being applied. The second plot has grown wheat every year since 1899, but has had a light application of manure plowed under each fall. The third plot has had no manure applied and has grown a crop every year, but a rotation of wheat one year, oats one year, clover two years and corn one year has been carried on since 1899, the 1911 crop being wheat.

The important lesson to be observed at this time is that the plot that has grown wheat continually without manure promises a very low yield. To the

observer, the plot that has been manured and the plot that has not been manured, but has grown a rotation, show manured, but has grown a rotation, show an equally good growth of wheat at this time and show a better growth than they did fifteen years ago.

The plots show (1) that the fertility of the soil may be maintained either through the use of barnyard manure or by a rotation of crops that includes clover or some equally good soil-improving crop; (2) that it is kept in a high state of fertility. It is not necessary to practice summer fallowing with the rainfall received at Pullman, either to give the land a rest or to conserve the moisture of two seasons for the growth of one crop. If the soil is sufficiently fertile, one inch of rainfall may carry more food into the plants than two inches of rainfall may dissolve and carry to the plants from a very poor soil. This is beginning to be very apparent in the field practice on the college farm. Except in small experimental plots, summer fallowing is no longer practiced on the state farm, but a rotation is followed that involves cropping annually with clover, alfalfa and peas grown periodically to improve the soil and corn to serve as a soil-cleaning crop (corn is a soil-cleaning crop only when it is properly cultivated—corn itself has no effect in cleaning the soil).

One twelve-acre field lying on a south slope was in summer fallow in 1891. It has grown a crop every year since. Every five years a well cultivated corn crop has helped to keep the soil in good tilth and free from weeds, while peas and clover, interspersed at about like periods, have served to keep up the supply of nitrogen and humus. The field now produces much better than when it was first taken over by the college. In 1911 it yielded forty-seven bushels of wheat per acre. In 1912 it yielded forty bushels of peas per acre. In 1913 it yielded forty-six bushels of wheat per acre. At present there is an excellent crop of oats growing on this field that will produce a very satisfactory yield if the season is fairly normal from now till harvest.

The rich color and rank growth of nearly all crops on the farm are beginning to show the effect of the use of barnyard manure and the growing of

peas, alfalfa and clover. One of the fields last purchased has not yet received a treatment of clover or alfalfa, and the yellow, more spindling growth of the barley shows a striking contrast to the ranker growth on the other fields.

The importance of maintaining a high state of fertility applies equally well to the semi-arid regions and to the moist regions of Western Washington. While it would be impossible to grow a good crop annually with the very limited rainfall of Central Washington, it is quite possible for the low rainfall to be much more efficient with plenty of fertility available to dissolve and carry to the plants. The number of crop failures can be very materially reduced and the average yields greatly increased by keeping more live stock, saving and applying the manure carefully and by growing soil-improving crops to keep up the fertility. Many sections of Western Washington might grow two crops per year or three crops in two years where they are now scarcely able to grow one good crop, if the soil were kept in a higher state of fertility.—Washington State Experiment Station Bulletin.

Fruit Boxes

OF ALL KINDS

APPLE BOXES

OUR SPECIALTY

Bridal Veil Lumbering Co.
Hood River, Oregon

Hood River Nurseries

Have for the coming season a
very complete line of

Nursery Stock

Newtown and Spitzenberg propagated from selected bearing trees. Make no mistake, but start your orchard right. Plant generation trees. Hood River (Clark Seedling) strawberry plants in quantities to suit.

Send for Prices

Rawson & Stanton
Hood River, Oregon

HILL MILITARY ACADEMY

A Select Non-Sectarian Boarding and Day School for Boys. Military Discipline; Small Classes; Men Teachers. Careful supervision secures results that are not attained elsewhere. Send for catalog.

PORTLAND, OREGON

Store Your Apples in Spokane

The Natural Storage Center

Take advantage of storage in transit rate and the better market later. Write us for our dry and cold storage rate and information.

**Ryan & Newton
Company**
Spokane, Washington

BALTIMORE THE SOUTHERN GATEWAY

Our location and facilities are in the 4A class.

We have also reservations in a new Cold Storage House for a number of cars of Box Apples—on which a liberal cash advance will be made.

"The Pioneer Box Apple House" **F. BORDER'S SON CO.**

Unfermented Apple Juice

By Professor W. V. Creuss, University of California

THERE is probably more unfermented apple cider drunk in the United States than all other unfermented fruit juices combined. Most of this is, however, used in the fresh state and at the time of the year when the weather has turned cool and the need of cold drinks is diminishing. If apples

were abundant and cheap during the summer months there would be little need in preserving the unfermented juice; but since the fruit is scarce during the hot months and the demand for the juice should then be greatest, we should try to meet this demand by preserving the juice in the most acceptable form.

The problems that are presented in the manufacture of unfermented apple juice are practically the same as those met in the production of unfermented grape juice. They are, preservation of the juice against spoilage by molds, yeasts or bacteria; rendering of the apple juice permanently clear and bright, and retention of as much of the original apple flavor as possible without the introduction of any foreign flavors, especially the dreaded "cooked" taste. The production of a juice of maximum quality is the first and most essential step in the popularizing of any fruit juice and applies very particularly to apples.

Three methods are in use for the preservation of the juice against spoilage, namely, (1) refrigeration, (2) preservatives such as benzoate of soda, and (3) sterilization by heat. The first, refrigeration, is expensive and will keep the juice only temporarily. The second is unfortunately the prevailing commercial method of preserving apple cider. The preservation of the juice by use of benzoate in this way harms the growth of the industry immeasurably by restricting consumption of the juice. Furthermore, the maximum amount of sodium benzoate allowed by the United States government does not prevent spoilage of the juice permanently according to tests made by Mr. H. C. Gore of the United States Department of Agriculture. Juice in his tests treated with .1 per cent benzoate, the limit allowed by law, spoiled in six weeks. Thus, if the apple juice preserved with sodium benzoate keeps indefinitely in the bottle, the drinker may reasonably suspect that the juice contains more of the preservative than allowed by law. The use of benzoate is objectionable in every way

and its use should be discouraged. The third method, involving destruction of the germs in the juice by application of heat and excluding their entrance to the juice thereafter, is the one we wish to take up more in detail, as it is the method that is most effective and least objectionable.

Selection of the apples is the first consideration. The varieties chosen should have good flavor and high

BUY AND TRY

White River Flour

MAKES

Whiter, Lighter Bread

W. van Diem

Lange Franken Straat 45, 47, 49, 51, 61
ROTTERDAM, HOLLAND

European Receivers of American Fruits

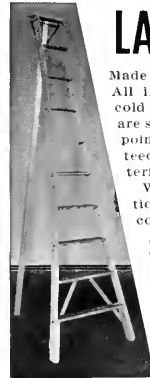
Eldst and First-Class House in this Branch

Cable Address: W. Vandiem
A B C Code used; 5th Edition

Our Specialties are

Apples, Pears, Navel Oranges

SCHLEE'S ORCHARD LADDERS



Made of select vertical grain fir. All iron work made of strong cold bent steel. The Ladders are securely braced in all vital points and absolutely guaranteed against all defects of material and workmanship.

Write for further description and prices. Special discount to the trade.

SCHLEE'S LADDER WORKS

267 Second Street
Portland, Oregon

Manufacturers of
Orchard Ladders, Step Ladders,
Extension Ladders,
Decorating Trestles, Ladder Jacks,
Window Cleaning Ladders,
Roof Jacks

QUALITY BOXES

FOR

QUALITY APPLES

Stanley Smith Lumber Co.
Hood River, Oregon

Perfect Trees Perfect Fruit

The fruit grower's greatest problem is to combat successfully the ravages of pests, insects and blight. Perfect fruit—the kind that produces the real money—is impossible where trees are affected or diseased. After years of experimentation and practical tests I have a product that is marvelously effective.

“Mustonia”

Powerful Antiseptic and Germicide Solution

For Blight, Codling Moth, Thrip, Green and Black Fly, Mildew, etc.

Spray with Mustonia three or four times a year and your trees will be healthy and vigorous; their producing efficiency will be increased to the maximum. Roses, flowers, plants respond quickly. Give Mustonia the hardest trial you can; absolutely warranted where simple instructions are followed. Write today for literature, instructions for using and helpful suggestions on tree planting, root trimming, etc.

E. Leech, F. R. H. S.
Stevensville, Montana

Dutch Bulbs



for
Winter
Blooming
and
Earliest
Spring
Flowers

Hardy,
Easily
grown and sure
to bloom

We import direct from the best growers the latest, most complete stock carried on this coast, and our prices are low. The best values offered anywhere.

Our 64 Page
Autumn Catalog

of BULBS,
ROSES,
FRUIT AND
ORNAMENTAL
TREES,
BERBERIS,
VINES,
FERNS and
HOUSE
PLANTS is
the most
complete we
have ever
issued, listing
only such
varieties as
have proven
satisfactory.
You will find
this Catalog
a safe and
dependable
guide to your
purchases.

Mailed free on
request.
Ask for Cata-
log No. 201

Portland Seed Co.

Front and Yamhill Sts.
PORTLAND, ORE.



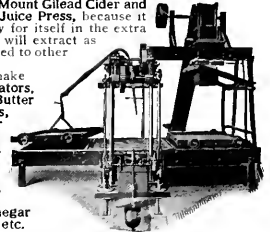
acidity. High acid is the main requirement because it improves the flavor by its tart taste, renders sterilization more effective and protects the flavor of the apple against injury during sterilization. The apples should also contain a fair amount of sugar. A desirable composition has been found to be 12 to 16 per cent sugar by the Balling test and over .5 per cent acid by chemical test. Of the standard varieties of California apples, the Pippin has shown up best in analysis. It is not the best variety of apple for the purpose, but as apple orchards are not planted for cider making we will have to use the apples that are available. They should be pickled according to chemical test or taste so that both acid and flavor will be obtained. It might be possible to use ripe apples to give flavor and blend them with slightly underripe apples to bring up the acid. The apples must be perfectly sound; blemished and dirty fruit, poorly flavored apples, etc., should be used for vinegar and not for cider. Moldy apples are objectionable further because they infect the juice with mold and make it difficult to sterilize. For the same reason all conveyors, crushers, presses, tanks, etc., used for the unfermented juice manufacture must be scrupulously clean. The press cloths especially should be washed and scalded before each day's run. The same machinery as used for apple vinegar making is employed to crush and press the apples. The grated or ground apples should be pressed in heavy press cloths so that the juice will have the smallest possible amount of pulp. The press cake can be fermented and re-pressed later for vinegar making.

From the time the juice leaves the press it must be handled with the objects of making it permanently clear and bright, retaining as much of the apple flavor as possible and preserving it against spoiling. The freshly-pressed juice is more or less viscous in nature and filters very slowly and imperfectly. It can be filtered clear, but only with great difficulty. Furthermore, when sterilized by heat it will turn cloudy again because of the material thrown out of solution by the heat. Therefore it becomes necessary to clear the juice after it has been sterilized. However, it is desirable to remove as much of the small pieces of pulp, starch grains, etc., that make the fresh juice cloudy, as possible, before it is sterilized the first time. This can be done by straining through a coarse filter, centrifuging in a milk centrifuge or by allowing the juice to settle for 24 to 36 hours. The last method is most convenient and most effective. During this settling process, fermentation must be prevented, because the gas of fermentation would keep the liquid stirred up and prevent settling. This can be done by the same method recommended for unfermented grape juice manufacture, namely, by the addition of a small amount of sulphurous acid. The amount used must be very small and only sufficient to prevent fermentation for 36 hours or less. The most convenient form in which to use it is

BIG PROFITS in the Cider Business

with a Mount Gilead Cider and Grape Juice Press, because it will pay for itself in the extra juice it will extract as compared to other makes.

We make
Evaporators,
Apple Butter
Cookers,
Vinegar
Generators,
Spraying
Outfits,
Cider
and Vinegar
Filters, etc.



Send for Catalog

THE HYDRAULIC PRESS MFG. CO.
60 Lincoln Avenue Mount Gilead, Ohio

Pacific Coast Representatives:
BERGER & CARTER CO., 504-506 Mission Street,
San Francisco, California

Established 1893

W. P. KRANER & CO.

Importers and Tailors

2nd Floor Couch Bldg.

109 Fourth Street

Portland, Ore.

GEO. E. KRAMER — C. W. STOSE

ROSES

“Orengo Roses”

Our new illustrated Rose Catalogue is ready for mailing. It contains a complete list of the new and desirable varieties; also practical information on planting, pruning and general care of Roses, and a convenient tabulated list of colors and classes alphabetically arranged. You will want to keep this splendid Rose Catalogue for a reference book. Send 10 cents in stamps now, and arrange to order early, if you want large, choice bushes that will bloom next summer.

We carry the most complete stock of ornamental trees, flowering shrubs, vines, etc., in the Northwest.

Oregon Nursery Company

ORENCO, OREGON

Dependable Salesmen Wanted

HOOD RIVER APPLE VINEGAR CO.

HOOD RIVER

YELLOW NEWTON VINEGAR

AND SWEET CIDER

EVAPORATED APPLES

Made from Choice Hood River Apples

If your jobber cannot supply you
send your order to

Hood River Apple Vinegar Co.

HOOD RIVER, OREGON

potassium metabisulfite, a solid salt of sulphurous acid. About two to four ounces of this salt dissolved in a little water may be used per 100 gallons of fresh juice. Sound, clean apples require less than dirty ones; less is needed in cold than in warm weather. In fact it is possible and would probably be better practice in cold weather to allow the juice to stand without any sulphurous acid because fermentation will not start in very cold weather in twenty-four hours if clean apples are used.

The settled juice may next be drawn from the sediment. It is then ready for sterilization into barrels. The sterilization by heat kills all of the molds, yeasts and bacteria in the juice and coagulates a considerable amount of the vegetable albumens in the juice, which, on settling out in the barrels, aid in clearing the sterilized juice. A pasteurizer or sterilizer made to sterilize the juice in a continuous stream is best, as in this way the juice is subjected to a very short heating and therefore is less apt to acquire a cooked flavor. The temperature of the juice that flows from the sterilizer should be between 160 to 170 degrees Fahrenheit. If much above 170 it will have a cooked flavor; if much below 160 it may contain living mold spores or yeast cells and spoil in the barrel. Such sterilizers are constructed of a tin or tinned pipe through which the juice flows and which is surrounded by a steam jacket to heat the juice. By varying the rate of flow and steam pressure, the desired temperature of the outgoing juice can be maintained.

The hot juice is run directly into sterile barrels. The barrels of hot juice must be bunged immediately. This may be done by use of a clean bung sterilized in boiling water and covered with a piece of clean cloth. The barrel should be rolled on its side temporarily to sterilize the bottom of the bung with the hot juice. The barrels used for the juice must be new or clean, sound barrels that have been used for juice only. Wine barrels that have been used for wine, vinegar, etc., are unsafe

CARTERS TESTED SEEDS, INC.

DEAN D. BALLARD, N. W. Mgr.
Arcade Bldg., Seattle, Wash.



Send for our catalog of these famous prize-winning English vegetable and flower seeds.

True-to-Name Nursery

GALLIGAN BROS.
Proprietors

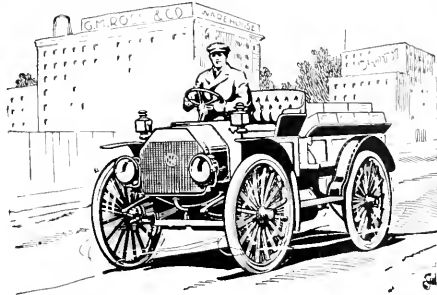
Hood River-Dufur, Oregon

Wholesale and Retail General Line of Nursery Stock. Seventeen years in the business. For catalogue and prices write

True-to-Name Nursery

Hood River, Oregon

Haul Your Fruit with an International Motor Truck



Many fruit growers have long been using International Motor Trucks, and have since handled their fruit much more economically and profitably. Buy one, and you, too, will save time and money, and so make more money.

Handle your fruit rapidly, at the right moment, with this durable, light running truck. It costs little to buy, and less to keep than horses and wagons to do the same work. Spend less time on the road with your fruit and your general hauling.

The solid tires cut down tire troubles. The motor is simple. The truck is easy to operate—one lever controls the car. It needs no attention and causes no expense when not working. You can have any style of body—the one most desirable for hauling fruit.

Our International truck catalogues are interesting and full of facts that may mean money to you later. Drop us a card and let us send you information.

International Harvester Company of America

(INCORPORATED)

Chicago

USA

KINGMAN & HEARTY, Inc.

E. W. J. HEARTY, President

Commission Merchants

Box Apples a Specialty

20 Fanenil Hall Market (North Side)

BOSTON, MASSACHUSETTS

The Biggest Apple Dealers in California

WRITE OR WIRE US FOR DETAILED
MARKET INFORMATION

A. LEVY & J. ZENTNER CO.

Davis Street (from Washington to Oregon Sts.) San Francisco, California

"BLUE RIBBON"

(EXTRA FANCY)

"RED RIBBON"

(FANCY)

Famous Brands of Yakima Apples

Packed under our personal supervision
Get in touch with us by wire or letter

Yakima County Horticultural Union

E. E. SAMSON, Manager
NORTH YAKIMA, WASHINGTON

Invigorate Your Orchards

Better size, color and flavor assured.
Acts quickly upon growing fruit. Posi-
tively removes all cherry gumosis.
Will apply for 5 cents for four-year-olds,
others 10 cents.

Write me quick.

W. D. MOREHOUSE
The Dalles, Oregon

H. HARRIS & CO.

Fruit Auctioneers

227 State Street

Boston, Massachusetts

Established 1847

Frank Moseley
Frank L. Ripley
Cutler B. Downer

PORTLAND, OREGON

PORTLAND HOTEL

The hotel which made Portland, Oregon, famous
Most Desirably Located. In the Center of Shopping and Theatre District
Covers a City Block

Broadway, Sixth, Morrison and Yamhill Streets

EUROPEAN PLAN—\$1.00 per day and upward

Write for Portland Hotel Booklet!

G. J. Kaufmann, Manager

Wanted?

If you want a connection with **Practical Distributors** and **Marketers** whose
experience covers the entire producing period of the Pacific slope, and who are

Specialists in the Products of Washington and Oregon

Make your wants known to

G. M. H. WAGNER & SONS

123 W. So. Water Street, CHICAGO

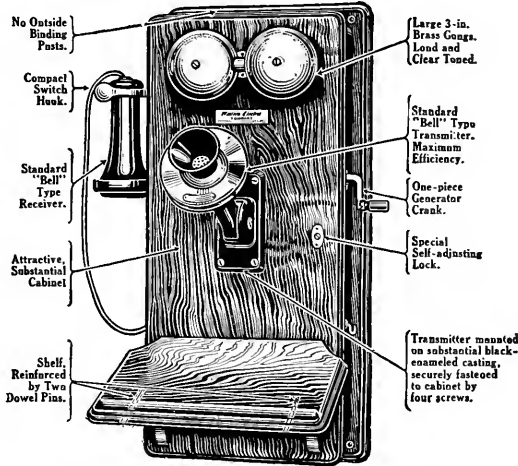
for unfermented fruit juices because of
danger from leaks or moldy wood.

The sterilized juice in the barrels
may be left to settle for several months
and then drawn from the sediment. It
may then be filtered clear and bottled
and sterilized in the same manner as
the orange or grape juices. 160 degrees
Fahrenheit should be sufficient for
sterilizing the juice if all operations
have been carried out carefully. Gore
has used a temperature of 150 degrees
Fahrenheit successfully in the steriliza-
tion of apple juice. Spoilage of juice in
barrels may take place through yeast
fermentation started by yeast that may
get in through leaks in the barrel.
Spoilage in bottles may occur through
the growth of mold whose spores may
have escaped death during pasteurizing
of the juice in bottle. They may start
from the cork if the cork is not thor-
oughly heated during sterilization of
the juice. The bottle sterilizer must be
so arranged that all parts of the bottle
and cork get thoroughly heated.

The method in outline is as follows:
(1) Selection of the proper fruit at the
right stage of ripeness to secure over
.5 per cent acid and over 12 per cent
sugar by Balling test. (2) Crushing and
pressing. (3) Settling of the fresh
juice. (Prevent fermentation during
this settling period by use of cold or a
small amount of sulphurous acid; most
conveniently done by use of potassium
metabisulfite.) (4) Pasteurizing into
barrels at 170 degrees Fahrenheit. (5)
Settling in barrels for several months.
(6) Backing and filtering. (7) Bottling
and sterilization in bottle.

Let's Start Something

I have read with a great deal of
interest your report of the horticultural
meeting at the Agricultural Farm at
Davisville, California. I regret very
much that I could not have attended
this meeting with you. Permit me to
congratulate you on your suggestion
that a horticultural meeting, in Oregon
especially, be held at the Agricultural
College. I would like to add to the
suggestion that the Dairy Association,
the Cattle Breeders' Association, the
Chicken Breeders' Association and other
allied organizations be joined in this
annual meeting. In Oregon we are
going to develop diversified farming
which will include horticulture, dairy-
ing, hog raising, chicken raising and
other similar lines of occupations, and
there ought to be some place in the
state where a ten days' meeting could
be held covering all these lines of
industries, so that people interested in
horticulture and other lines of produc-
tion could give up, say, ten days to
attending a joint convention. Above
everything else, let's have the next an-
nual meeting of the State Horticultur-
al Society jointly with the State Board
of Horticulture at the College at Corvallis.
I hope you will encourage this move-
ment to a successful issue. Very truly
yours, H. B. Miller, Director of School
of Commerce, University of Oregon,
Portland, Oregon.



The Leading Rural Telephone

The above diagram shows why your next telephone should be a Western Electric. No other rural telephone has such sturdy construction—such positive action—such clear, loud transmission. No wonder it is best!—it is made in the same shops where all "Bell" telephones are made. It is the product of highest engineering skill and expert workmanship. You can absolutely depend on a

Western Electric Rural Telephone

We shall be glad to send on request any or all of the following booklets: "The Leading Magneto Telephone," "How to Build Rural Telephone Lines," "How to Organize a Rural Telephone Company." Write to the nearest house below and mention name of this paper.

WESTERN ELECTRIC COMPANY

Manufacturers of the 8,000,000 "Bell" Telephones

New York	Atlanta	Chicago	St. Louis	Kansas City	Denver	San Francisco
Bu falo	Richmond	Milwaukee	Indianapolis	Oklahoma City	Omaha	Oakland
Philadelphia	Savannah	Pittsburgh	Minneapolis	Dallas	Salt Lake City	Seattle
Boston	Cincinnati	Cleveland	St. Paul	Houston	Los Angeles	Portland
New Orleans						Detroit

EQUIPMENT FOR EVERY ELECTRICAL NEED

Prevention of Wood Decay in Fruit Trees

By Professor W. T. Horne, University of California

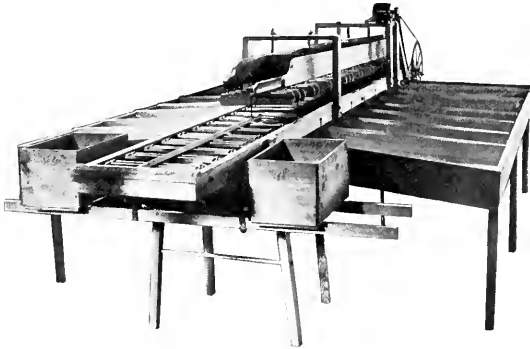
THE decay and disappearance of wood in the center of large forest trees give us the well-known hollow trees. Such trees may live for many years, but are liable to be broken down or blown over. In our orchards also wood decay is common. Decayed orchard trees may live for some years and bear reasonable crops, but usually a heavy load of fruit breaks off one limb after another and the tree becomes a worthless stub. Peaches are especially subject to rapid loss in this way, but all our fruit trees are more or less affected by this plague. The decays considered in this article are those

which start from some surface of dead bark or wood and spread through the center of trunk and limbs without affecting, at least for some time, the bark and cambium. This kind of decay should not be confused with the oak fungous disease which affects primarily the roots, but may spread up some little distance into the trunk. It affects perfectly sound and healthy roots and kills the bark, causing it to decay in a characteristic manner, and then spreads into the wood, causing a soft, light-colored decay. In contrast with the oak fungous disease, the common wood decays do not attack per-

fectly sound, healthy trees with unbroken bark, but the rot starts from some exposed wood and then works up and down through the center of the tree.

Fruit trees with decayed centers may bear heavily, but usually such trees rapidly become crippled. Not only is the carrying strength reduced, but there is good evidence that many of the dead limbs seen in orchards are due to wood decay which has worked outward to the bark. Mr. C. J. Rodgers of Watsonville, working in our laboratory, has shown that the so-called sappy-bark disease of apples is due to one of these fungi. That such decays are common is generally conceded, but no definite data have been available. Accordingly Mr. W. W. Thomas made careful counts in representative orchards in three regions, Coast valley, interior valley and foothills. While the results secured may not be at all final, they clearly show several facts with respect to stone fruits. (1) Contrary to anticipation, wood decays are more prevalent in the hot interior valleys and foothills than in the cooler and more humid Coast valleys. The winter moisture in the three regions is not very different, while the more frequent sunburn and wider cracking of large pruning wounds doubtless account for the facts found. Also in the orchards examined there had been less grafting over of bearing trees in the Coast region. (2) It appears that more than half the stone-fruit trees of bearing size in California are certainly affected with wood decay. (3) Not much more than two per cent of stone-fruit trees are free from sunburn or large wounds. (4) By far the largest part of infection comes from sunburn, large pruning wounds or grafting over stubs. (5) Fully two-thirds of the decay is caused by the common oyster-shell fungus, *Polystictis versicolor*. A dozen other fungi will probably include nearly all of the common wood decay forms in orchards. We believe wood decay is a trouble of stupendous importance to the California fruit industry. Professor Wickson says: "There are instances in the earliest settled parts of the state where peach trees above fifty years old are still vigorous and productive. . . . Some trees have, in fact, gone along in thrift . . . because they have never been allowed to sunburn; . . . have never been pruned with an axe, and have never lost a limb nor had a wound into which decay could penetrate and descend to the root." Wood decay does not set in because a tree is old or ordinarily because it is weakened by lack of food or water. Neither is it a natural process necessarily following exposure to air and moisture. Serious wood decay is due to infection by any one of several fungi which gain entrance at some point where the wood is exposed or where the bark is dead. The fungus grows in the wood, digests it and uses it up, finally leaving only a little ash. This process of digestion constitutes decay. Infection must take place from spores

The Pride of Oregon Apple Sizer



Is the most simple and economical sizer on the market today. Experience has demonstrated that sizing to eight divisions is more practical than a greater or less number of divisions and enables packers to pack the maximum quantity per day, thereby reducing the cost.

The sizing is done **ABSOLUTELY WITHOUT BRUISING.**

The sizer is strongly and simply constructed, with no complicated machinery to get out of order, and will last a lifetime.

The machines will make two grades at the same time and divide each into eight sizes.

The construction is so simple that the machine can be operated with $\frac{1}{2}$ -horsepower motor—either electricity, gasoline engine, or by hand.

For particulars address

The Pride of Oregon Apple Sizer

J. R. NUNAMAKER & CO.

HOOD RIVER, OREGON

Portland Wholesale Nursery Company

Rooms 301-302 Stock Exchange Building

Corner Third and Yamhill Streets
PORTLAND, OREGON

The Cashmere Nurseries

G. A. LOUDENBACK, Proprietor

A COMPLETE LINE OF NURSERY STOCK

WRITE FOR PRICES

CASHMERE WASHINGTON

Ridley, Houlding & Co.

COVENT GARDEN, LONDON

Points to remember when consigning
apples to the London Market

- 1.—We Specialize in Apples
- 2.—All Consignments Receive our
Personal Attention
- 3.—The Fruit is Sold by Private
Treaty on its Merits

CABLE ADDRESS: BOTANIZING, LONDON

which fall on dead bark or into cracks of wounds. These spores are formed on definite bodies, of which the brackets or oyster shell-like structures are examples. The spore-bearing brackets grow almost entirely during winter, so spores will not be scattered during the dry summer. The spores must lodge in a moist crevice in order to grow and establish the fungus in the wood.

Prevention of ordinary wood decay depends wholly on protecting exposed wood from infection by spores of these fungi. Abundant moisture is doubtless also necessary. Measures will vary according to the kind of trees to be dealt with:

First, for small trees just planted the greatest importance attaches to shaping the tree so that later there will be no need to remove large limbs—in other words, get a simple framework. The tree should also be shaped for strength, so that neither the load of fruit nor orchard operations will be likely to break off large limbs. Wounds should be treated as recommended below, but it appears that wounds which heal over in one year rarely become affected.

Second, trees of some size which have wounds and are liable to infection but are still apparently sound. According to our studies this will include a little less than half our bearing stone-fruit trees. All horticultural procedure which I have seen recommended is inadequate for protecting these trees, and I take the liberty of suggesting a method on the basis of our present information: (a) When a cut or wound is made exposing the wood of a tree it should be wet with a germicide. This should be done immediately or as soon as the surface has dried and before cracks have formed. (b) Immediately after disinfection, as soon as dry enough, the wood should be covered with some sealing paint to prevent cracking as far as possible. (c) This process must be repeated for all wounds every year until they are healed over. The reason for this is that no sealing material can be trusted to last more than one season. (d) This operation should be done in late summer or fall in California. The reason for this is that cracks at this time will be at their widest and some spores may have gotten in. These must be killed and the places for entrance of others closed.

For the disinfectant (a) I recommend corrosive sublimate 1 part to 1,000 of water by weight. Corrosive sublimate is a poison and must be used carefully; it must not be put into a metal bucket nor come in contact with any metal or the solution will be spoiled. Wooden buckets or enameled ware without breaks may be used. For the sealing paint (b) I recommend asphaltum softened with benzoin to make a rather thick paint. This preparation is said to make a covering material which does not become brittle on drying, but becomes plastic in hot weather.

Third, trees already infected with decay are not to be cured by the above method. They are subjects for tree

in the orchard



The Yuba Ball Tread Tractor is the ideal tractor for orchardists.

With it, a man can plow up one row and down the next, throwing the earth to or from the trees. It can be turned in a space but a few inches wider than its length.

The Yuba Ball Tread Tractor gives great power, yet is small enough to run close to the trunks and under heavily laden branches without injuring the trees.

It is heavy enough to get ample traction, yet its weight is so evenly distributed over a large area that it does not pack the soil.

THE YUBA BALL TREAD TRACTOR

When not plowing or cultivating, the tractor can be used to operate irrigating pumps or other stationary appliances. It is an investment on which the owner gets maximum returns.

And above all, it is economical, and simple—so simple that farmhands of average intelligence operate the machine and make repairs or adjustments.

There is a booklet describing its uses and construction fully.

THE YUBA CONSTRUCTION CO.

Dept. G-15

433 California Street, San Francisco
Works, Marysville, California

surgery, which is entirely too large a topic for this article. Tree surgery in the orchards will pay if wisely done, sometimes. I cannot refrain from calling attention to three points: (a) Wood decays are greatly favored by excessive moisture, therefore make all cavities so that they will drain perfectly and remain dry as possible. (b) Where decayed wood is removed use disinfectant freely on the pared surfaces and paint as recommended for wounds. (c) Use cement only for support, never for sealing up a cavity. There will rarely be any occasion for its use

An Appeal From the Railroads

In anticipation of the heavy movement of fruit this fall the Association of Western Railways has issued a circular to all shippers and receivers, asking their assistance in the prompt releasing of cars. An excerpt of the circular is as follows:

"Two years ago, in anticipation of the large tonnage which the railroads would be required to move as a result of the heavy crops of that year, this association appealed to the shippers and receivers of freight for co-operation in obtaining the maximum use of

freight equipment. The results of that appeal, and the interest manifested by the shippers throughout the country, were very gratifying. The present prospect of exceptionally heavy crops warrants an appeal of the same nature at this time. In spite of the fact that a great surplus of cars has existed for some time, the surplus of box cars is not so great as to warrant any feeling of security, and unless the co-operation suggested below can be had, the prospects are for a difficulty in moving these crops which may affect disadvantageously the interests of the shippers



Write for Free Glove Book

Your Hands Are at Home in Hansen's Gloves

THEY fit so perfectly, are so soft and pliable, that your hands are at home for any work you have to do. They save you money, because they save your hands, as well as your pocket.

There are Hansen's for all kinds of work, driving and sport. Leather reliable, style good. If your dealer is not supplied, write us. Any way, send for FREE GLOVE BOOK.

O. C. Hansen Mfg. Co.
130 Detroit Street
Milwaukee, Wis.



Real Hand Insurance

and receivers alike. The railroads are making every effort which their resources will permit to put cars in condition for service and in other directions to prepare themselves to handle the traffic with promptness.

"Shippers and receivers, commercial organizations and others having to do with the commerce of the country, are earnestly urged to lend their efforts and influence in every way possible to bring about the most economical use of equipment, and the following suggestions are made, for which the widest publicity is solicited: (1) Move all the coal, lumber, cement and other supplies that you can before the heavy crop movement starts. (2) Load and unload all cars as quickly as possible. If, without additional cost, the use of greater force will get the load ready for movement or the car released more quickly, do it. (3) Load all cars to the full capacity. A leeway of 10 per cent above the marked capacity is permitted before reduction of load is required. All cars should so far as possible be loaded to a weight between the marked capacity and 10 per cent above. (4) Anticipate the disposition of freight before its arrival. (5) Only order such cars as can be loaded promptly. Orders for cars should state the number required for that day's loading, the kind of cars, the final destination of the shipment, and the routing via which it will move. (6) Reduce to the minimum the practice of billing cars to intermediate points to be held for reconsignment. The greatly increased crops cannot but be reflected in the movement of other freight, or fail to impress upon the minds of everyone interested in the subject the necessity for the most hearty co-operation on the part of all if a serious car shortage and its accompanying damage to all lines of trade is to be avoided."

Irrigation Congress

The first International Irrigation Congress in Canada, or, in fact, in any place outside of the United States, will be that in Calgary October 5 to 9 next. This congress promises to be one of the best ever held in the history of the organization since its birth in Salt Lake City, Utah, in 1891. It is especially appropriate that this congress should be held in Calgary, as this city is the western gateway to one of the largest irrigation projects in the world—a project on which many millions of money have been spent and which is one of the great factors in reclamation on the North American continent.

The visitors and delegates to the congress this year will have an opportunity of inspecting this project, with its many miles of ditches and tributary canals. A large number of inquiries have been received from persons interested in irrigation throughout the United States and Canada, and there is reason to believe that a record attendance will grace the 1914 congress. Every effort is being put forth by the local board of control to provide one of the best programs that has ever attracted irriga-

Waterproof
Not nearly — not fairly —
but *dryly*
waterproof



TOWER'S FISH BRAND

REFLEX SLICKER

The wet weather coat for you for good hard service. Light weight, strong, and big all over for comfort.

\$3.00 Everywhere Protector Hat, 75 Cts.
SATISFACTION GUARANTEED
Catalog free

A. J. TOWER CO., Boston

FOR FALL SOWING
"Diamond Quality"
TESTED

**CLOVERS—ALFALFA
VETCHES—GRAINS
GRASSES and FIELD SEEDS**

**MIXTURES for DRY LAND—
WET LAND—BURNS—Permeocet
HAY CROPS and PASTURES—
COVER CROPS for ORCHARDS**

WRITE FOR SAMPLES
and Prices or Send in Your Order—You will Receive Prompt Service and Full Value

ASK FOR CATALOG No. 200

PORTLAND SEED CO.
Portland, Ore.



Agents "CLIPPER" Fanning Mills

ACID BLAST ETCHED PLATES

We have installed the only etching machines in the State of Oregon

BLAST ETCHED plates have a printing quality which has never before been obtainable with process engraved plates

THEY COST THE SAME AS THE OTHER KIND

OUR DIRECT PROCESS COLOR PLATES ARE EQUAL TO ANY MADE

DRAWINGS for every purpose in PEN AND INK OR WASH.

HICKS-CHATTEN ENGRAVING CO.
INCORPORATED
607 BLAKE-McFALL BUILDING
FOURTH and ANKENY STS. PORTLAND, ORE.

Hayney Bolster Springs

make any wagon a spring wagon. Prevent damage to eggs, fruit, etc., on road to market. Soon save cost—produce brings more—wagon lasts longer.

MADE LIKE FINEST AUTO SPRINGS

Very resilient and durable. The standard springs of America since 1895. 40 ties—fit any wagon—sustain load up to 5 tons. If not at dealer's, write us. Catalog and list of proof free.

HAYNEY SPRING CO., 104-117th St., BACINE, WIS.



GUARANTEED

YOU CAN EARN \$50.00 PER DAY with the Gearless Improved Standard Well Drilling Machine.

Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours.

Another record where 70 feet was drilled on 2 1/2 gal. disillate at 9c per gal. One man can operate. Electrically equipped for running shaft. Fishing job. Engine ignition. Catalogue W. R. REIERSON MACHINERY CO., Manfrs., Portland, Ore.



MARVELOUS "K" Hand Power STUMP PULLER




(Hand machine sketched from photo.) "K" will pull stumps without cutting, digging or powdering. If inch steel cable will pull them. Pulling power is tons. With 2 blocks even woman can pull equal of a large horse on straight pull. Statement guaranteed.

"K" used by U. S. Government in Alaska great success with Canadian Northwest fir and cedar stumps. Pine, gum, alder, oak all come out with "K". Weight 17 1/2 lbs. Krupp steel frame, weatherproof Kingfish cable. Write for special advertising offer and book on hand clearing.

W. J. FITZPATRICK, Box "S," 1926 Second Ave., Seattle, Wash.

WRITE ME!




Get my new, low, factory prices on the Famous Galloway and Big Brother and FREE Catalog. My engines are standard, high quality engines. Made in USA from 1 1/2 to 12 H. P. Over 40,000 in use today. All sold on 30 days FREE trial, backed by five year guarantee and \$25,000 bond. Money back if not satisfied. No interest. Quick parting excellent prices for inferior engines. Save millions of dollars on your own dealer.

BUY DIRECT FROM THE MANUFACTURER and Save \$50 to \$300 on Gasoline Engines

That covers about as near keeping your money at home as any way you can think of. Write me before you buy.

FREE Service Department that will help you select and buy all the best and also engine you need for your work without costing you. Let me send you my New 1914 Special Offer. Just write for my catalog and low, low prices today.

Address: Wm. Galloway, Pres., **WM. GALLOWAY CO., 1056 Galloway Station, WATERLOO, IOWA**



Protect Your Trees

Hawkeye Tree Protectors

Don't take chances with your young trees. One rabbit will kill many in a single night. Mice and cat worms will damage and destroy them if you don't protect them. Get dollars' worth of protection at a fraction of a cent cost by using.

Absolute protection against gnawers and borers. Prevent trees from becoming skinned and bruised by cultivator or lawn mower. Made of ciner, chemically treated. Easily put on and will last until tree is beyond needing protection. Don't lose time of your trees are killed—order Hawkeye Protectors now. Regular size 10 inches wide, 20 inches high. Price in lots of 100—1 cent apiece. In lots of 1000—1/2 cent apiece. Special sale made to order. Write for circular and samples.

We make Fruit Baskets—get our prices.

Burlington Basket Company 122 Main St., Burlington, Iowa



LARGE AXLE & SMALL GREASE CAN



WHITTIER COBURN CO. S.F. SOLE MFRS.

tionists to a convention. Entertainment and educative features will be interspersed in such a manner as to keep up the interest of the visitors and delegates throughout the whole four days of the session.

Men of such calibre as Hon. A. A. Jones, Assistant Secretary of the Interior of the United States, have been secured to address the gathering. The program committee has every assurance of his attendance at the congress, and also assurances from a large number of the best informed men in Canada on the subject of irrigation. These, with the large number of foreign delegates who are expected to attend the congress, will make a galaxy of irrigationists such as was never gathered together in one place before.

The program of this year includes some sectional meetings—sections devoted to one particular subject, so that delegates may make their selection as to their attendance when the subjects in which they are particularly interested come before the meetings. One section will be devoted to community up-building, as it is recognized that life on the farm must be made more attractive to the young people. Year by year the young folks are leaving the farm by thousands, city life being more attractive to them, and some methods must be devised to keep them on the land. There are those who have made a special study of this question, and they will be especially invited to attend the congress. Methods by which the city and the country may be brought closer together, socially and economically, will be discussed by those who are closest in touch with both phases of life and are in a position to talk intelligently on the subject. Canadians are alive to the importance of this meeting, knowing what it means to the city, and has meant to other districts where conventions have been held, and they will make every effort to royally entertain the visitors and delegates from across the border and from foreign countries. The country has every facility and attraction to offer visitors to the irrigation convention the best time they ever had.

One of the most interesting features of the congress will be the agricultural exhibition, at which a large number of states of the Union and provinces of the Dominion will be represented by exhibits. Both the Dominion and Federal governments have promised to send along their best products, while British Columbia, which is perhaps the most fortunate in the Dominion in regard to natural resources, will make an especially interesting exhibit. The land show will be most educative, representing as it will the tremendous advantages of the irrigation method of agriculture.

The big horse show building, which has the greatest accommodation of any building in the city, will be utilized for this purpose and for the various meetings of the congress, and will be so arranged that every state and province gets its due proportion of space for display purposes. Calgary is looking for-

Pull 100 Stumps A Day—With The Hercules



YOU can clear an acre or more of stumps a day. No stumps can resist the Hercules. Doubles land value—enables you to make \$1200.00 on 40 acres the first year after stumps are cut—and \$750.00 on crops every year after. Get the proof. Why not?

Write Us Now

Book tells all the facts—shows many photos and letters from owners—tells all about the many Hercules features. We'll also quote you a special money-saving price proposition that will interest you. Address:

HERCULES MFG. CO. 169 234 St., Centerville, Iowa



FIX YOUR ROOF

Send for this **FREE BOOKLET** TELLS HOW TO DO IT EASILY AT SMALL EXPENSE

"KOTE-IT" a rubber-like paint for roofs, tin, paper or single, new or old, iron work, silos, tanks, posts, implements, etc.

APPLIED WITH A BRUSH

50 A GALLON DELIVERED IN QUANTITIES

Guaranteed for 5 years

A.W. SMITH CHEMICAL CO. OAKLAND—BOX 393 A—CAL.

STOP THE LEAK!

YOU CAN MAKE \$20.00 A DAY

AND JUST ONE MAN ON THE JOB WITH A **KING OF THE WOODS DRAG SAW**

Put fuel on the steeps hill and over the roughest ground. One man will saw 40 stumps in 10 hours. Another named stumps in 8 hrs. Another saved 20 cords in a day. Another writes his neighbors will clear a new TREES IN MORE WOOD SHOULD KNOW. Write for Testimonials and Catalog D-1.



Reiersen Machinery Co. Manufacturers, FOREST LAKE, MINN.

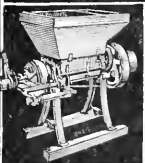
A VALUABLE BOOK FREE

It tells of experiments in feeding live stock both ground and unground grain, alfalfa and kaffir corn—also shows how 25% can be saved—shows values of standard feeds, lists about balanced rations—describes

STOVER AND IDEAL FEED MILLS

To get it simply write—Send me your check L.I.F.E. STOVEN AND GROUND FEED.

STOVER MFG. CO. 292 IDEAL AVENUE . . . FREEPORT, ILL. SAMSON WIND MILLS—ALFALFA CRINDERS PUMP JACKS—ENSLAVE CUTTERS



D. Crossley & Sons

ESTABLISHED 1878

Apples for New York and Export

CALIFORNIA, OREGON, WASHINGTON, IDAHO AND
FLORIDA FRUITS

Apples handled in all European markets at private sale. Checks mailed from our New York office same day apples are sold on the other side. We are not agents; **WE ARE SELLERS.** We make a specialty of handling **APPLES, PEARS AND PRUNES** on the New York and foreign markets. Correspondence solicited.

200 to 204 Franklin Street, New York

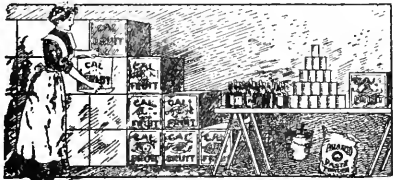
NEW YORK

LIVERPOOL

LONDON

GLASGOW

Paste for Labeling—"Palo Alto" Paste Powder



added to cold water, instantly makes a beautiful, smooth, white paste. Ready for immediate use at a cost of ten cents a gallon. No labor. No muss. No spoiled paste.

Paste Specialists

Robinson Chemical Works

349-351 Eighth Street

San Francisco, California

THE SHORT LINE

to PUGET SOUND
CENTRAL OREGON
SPOKANE and
EASTERN CITIES

IS THE

OREGON-WASHINGTON RAILROAD & NAVIGATION CO.

"THE LINE OF STEEL COACHES AND AUTOMATIC BLOCK SIGNALS"

Superior Service
Splendid Equipment
Convenient Schedules
Oil-Burning Locomotives
First-Class Dining and
Sleeping-Car Appointments
Courteous, Capable Employees

Information, Tickets, Reservations, etc., upon application to any agent of the O-W. R. & N. Company, or

CITY TICKET OFFICE

THIRD AND WASHINGTON STREETS, PORTLAND, OREGON



ward to this event as one of the utmost importance, and will spare no effort to impress visitors and delegates with the natural advantages of Western Canada. That she will prove a most hospitable host is evidenced by the early preparation being made to look after the irrigationists.

Western Canada is very much interested in irrigation. She has through a succession of enterprises proved the methods of the science, and found that the scientific application of water to the land has much to do with the success of the agriculturist of the future. She has a Western Canada Irrigation Association of her own, and this organization, which meets in Pentiction, B. C., August 17, 18 and 19, will see to it that British Columbia is well represented at the Calgary congress, both numerically and otherwise.

Pear Blight

The State Experiment Station desires to call the attention of horticulturists of the Northwest to the grave danger menacing the fruit industry in the shape of numerous and sundry alleged cures for blight (Pear Blight, "Fire Blight"). These cures take the shape sometimes of tree paints, sometimes of materials for injecting into the tree and sometimes of materials to be placed in the soil about the trees. It is the experience of scientific men, both in the experiment stations and the United States Department of Agriculture, that none of these so-called cures will do the work claimed for them. In other words, they are probably all pure fakes, and their use can only result in loss to the orchardist. The blight disease and its characteristics are well known to plant pathologists and horticulturists the country over. Its cause is well known and the methods of combatting it are well known. There is, therefore, little excuse for making mistakes in regard to combatting this disease. The only way to cure a tree of blight, once it is affected, is to cut out the infected portions. There is no patent cure. From the very nature of the disease it is improbable that there will be, and anyone who takes advantage of people in a time of distress such as a blight epidemic to work off patent cures or panaceas for the blight is, to say the least, a most undesirable citizen. It is unfortunate that our laws are not drastic enough to prevent the activities of these blight nostrum fakirs. It seems especially necessary at the present time to call attention to this matter on account of the fact that there is being exploited on the market certain "tree paints" as blight cures. One thing seems absolutely certain in regard to these "tree paints," namely, that if they will kill the blight bacteria in the tree they will also kill the tree, or that portion of it upon which the paint is placed. In other words, surgery would do the same work as such a paint, minus the cost of the paint, and probably do it more effectively.—Ira D. Cardiff, Director, Washington Agricultural Experiment Station.

Automobile Advice

In connection with the aid it has been giving the Lincoln Highway, from Coast to Coast, the Goodyear Tire & Rubber Company has just published a booklet that cannot fail to be of interest and help to Coast-to-Coast automobile tourists—especially those traveling by the Lincoln way. Most of the manuscript was prepared by F. H. Tregue, chief engineer of the Lincoln Highway Association, Detroit,—an automobile engineer, a road expert and a man who has made the Coast-to-Coast journey many times by motor car. The booklet contains a map of the route, discusses routes, costs, time, equipment, advice for a variety of emergencies, provisions, etc. Here are a few "don'ts" that are put down which are likely to be as valuable as the positive advice:

"Don't wait till the gasoline is nearly gone before filling up. There might be a delay.

"Don't allow the water can to be other than full of fresh water and fill it every chance. You might spring a radiator leak or burst a water hose.

"Don't allow car to be without food at any time. (List of eatables given.)

"Don't buy oil in bulk. Buy one-gallon original cartons.

"Don't fail to have warm clothing. High altitudes are cold and dry air is penetrating.

"Don't carry loaded firearms in the car, except possibly a small pistol.

"Don't fail to put out your camp fire when leaving.

"Don't forget the yellow goggles.

"Don't ford water without first wading through it.

"Don't build a big fire for cooking. The smaller the better.

"Don't drive over 25 miles an hour. Unexpected, small, dry washouts in the West will break springs.

"Don't carry good clothes—ship them.

"Don't wear leather puttees. Canvas is better.

"Don't drink alkali water.

"Don't wear new shoes."

The book bristles with practical points for long-distance motorists. Copies may be obtained by applying to Goodyear at Akron, Ohio.

Windfall Apples

Windfall apples, which are often left on the ground to rot, may be made to serve a useful purpose by the economical housewife. A little forethought and labor at this time of the year spent on a despised product of the orchard may supply the winter table with many an appetizing and wholesome dish which otherwise would either be lacking or supplied at a higher cost. Windfall apples may be canned whole and used as a breakfast dish, for dessert, salads, or baked. There will be many which are too much marred for canning whole. In this case, the marred

SHIPPERS OF APPLES PEACHES PEARS PLUMS CHERRIES ETC.

When wishing to use the Cleveland market, or desiring reliable information concerning same, write or wire us. We are among the largest receivers here.

SPECIAL FEATURES:

Absolute responsibility, reliable and prompt service. No house in any market excels us in making prompt remittances when goods are sold. Liberal and consistent advances made on consignments. Ample cold and dry storage facilities.

Myers, Weil & Co.
CLEVELAND, OHIO

O. E. SPOONER

Up-to-Date
Facilities

FOR
AUCTION

AND

Private Sale
DISTRIBUTION

**Fruit and Produce
Brokerage and
Commission**

94 South Market Street
1-3-5-7 Mercantile Street
BOSTON

Located on this corner since 1897
Direct Telegraph Wires All Codes



**RHODES DOUBLE CUT
PRUNING SHEAR**

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

Pat'd June 2, 1903.

RHODES MFG. CO.,
520 S. DIVISION AVE., GRAND RAPIDS, MICH.

WE MAKE A SPECIALTY OF

Catalogs, Booklets and Circulars

FOR

*Nurserymen, Fruit Growers, Manufacturers
and Selling Agents*

Write us for specifications and information. Quality and Service

F. W. BALTES AND COMPANY

Fine Printing Portland, Oregon

"PEARSON'S"

(CEMENT COATED)



Honest Quality
and
Full Count
have made them
the
world's standard.

Always Specify
PEARSON'S

Accept no
Substitute

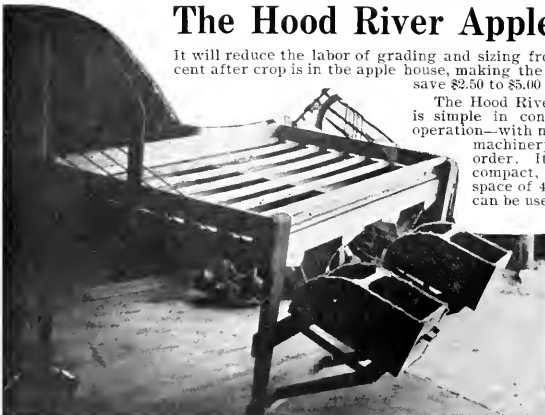
Pacific Coast Agents

UNITED STATES STEEL PRODUCTS CO.
San Francisco—Los Angeles—Portland—Seattle

J. C. PEARSON COMPANY, Inc., Old South Building, Boston, Mass., Sole Manufacturers

The Hood River Apple Sizer

Apple buyers and consumers are demanding standardization and uniformity in the grading and sizing of apples. This work is usually done by hand, costing from five to fifteen cents per box. The apple industry demands economy in every phase of the business. Consequently an apple grower in Hood River has invented



The Hood River Apple Sizer

It will reduce the labor of grading and sizing from 20 to 30 per cent after crop is in the apple house, making the little machine save \$2.50 to \$5.00 per day.

The Hood River Apple Sizer is simple in construction and operation—with no complicated machinery to get out of order. It is small and compact, occupying a space of 4½x6 feet so it can be used in any packing house, no matter how small. With extra help it has a capacity of 500 boxes per day and the cost of grading and sizing can be done for 3c per box. The price is so low that every grower, no matter how small, cannot afford to be without it. ANY GROWER WITH A 1,000 BOX CROP CAN SAVE THE COST OF THE MACHINE IN ONE YEAR.

FOR PARTICULARS AND PRICES WRITE TO

J. F. VOLSTORFF, Hood River, Oregon

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

places may be removed and the apples sliced and canned for either pie filling or for apple sauce. Following are the recipes for thus taking care of windfall apples:

Whole Windfall Apples Canned—Select firm, not overripe apples. A great difference in the canned products will be noted in the different varieties of apples. This recipe is intended for firm and preferably tart varieties. Some varieties will require less time and some more. Remove blemishes, cut out core. Blanch for two minutes in boiling water; plunge in cold water. Pack in tin cans or glass jars and add just a little very thin syrup. Put on rubber and top and partially tighten. (Cap and tip tins.) Sterilize twenty minutes in hot-water bath, fifteen minutes in water seal, ten minutes in steam-pressure outfit, or six minutes in pressure cooker. Remove jars, tighten covers and invert to cool. Apples canned in this way make a product that is generally wasted available for apple salads, dumplings, breakfast apple dishes, apple potpies and baked apples.

Windfall Apples for Pie Filling—Peel and core; slice; scald two minutes in boiling water; plunge in cold water; pack in glass or tin and add about one teaspoonful of hot, thin syrup to each quart; put on rubber and top, partially tighten (cap and tip tins); sterilize sixteen minutes in hot-water bath, twelve minutes in water-seal outfit, ten minutes under five pounds of steam, or four minutes in pressure cooker; remove jars, tighten cover, invert to cool. This is a good method of utilizing the good portions of partially decayed apples. The thin syrup mentioned in these recipes is made as follows: One and one-half cups of sugar to one cup of water, brought to boiling.

Boy Scouts to Can Windfall Apples—The Boy Scouts of Corland, New York, have rented an entire apple orchard and are planning to market the good fruit and to can all the windfall apples in the manner described above. The orchard, which is being rented for a period of three years, contains 165 trees, most of them in good bearing. Under the leadership of one of the department's agents and the local scout master, the boys have pledged themselves to prune, spray and cultivate the orchard; to grade, crate and find a market for all fresh apples, and to save all possible waste by canning the windfalls, so that the enterprise will yield maximum returns. The boys are erecting a temporary building as headquarters for the equipment, where they may also change clothing, and grade, pack and crate the fruit.

List of Fairs, Apple Shows and Expositions for 1914

New Westminster, B. C., September 28-October 5.

Utah State Fair, Salt Lake, October 5-12.

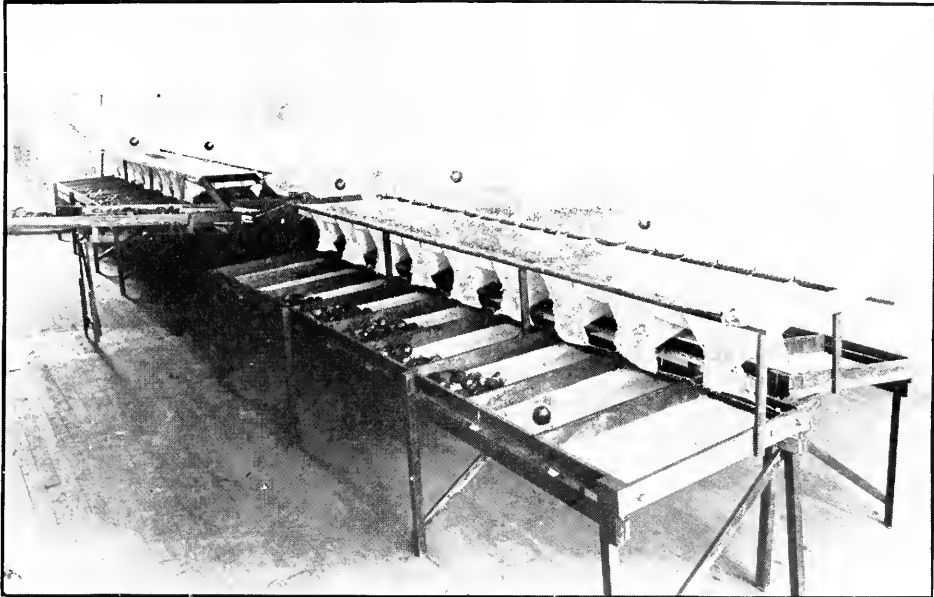
Fifth Annual Apple Show, San Francisco, October 1-11.

Manufacturers' Land and Product Show, Portland, October 26-November 14.

Sixth National Apple Show, Spokane, Washington, November 16-21.

The Four-Cup Price Fruit Sizer

Made in 4 sizes, with capacities ranging from 350 to 2,000
boxes per day, with price to meet every need.



OUR MOTTO—To reduce the cost of putting fruit in the box, so that
even a child could do the work and obtain the perfect pack.

This machine will save you from three to five cents on every box you pack. Sizes your apples into the 20 Northwest standard packs. We furnish a system of packing cards that will enable you, with our machine, to make a packer out of an inexperienced person in one hour.

We size the fruit by weight, which is the only scientific and correct way. It makes no difference to this machine if the fruit is flat, oblong, round or square. It is extremely simple in construction and design, nothing to get out of order, and no mechanic necessary on the job to look after it. Our grading table is so arranged that one or six men can be used; after the fruit is emptied on the table, the sorter never picks it up again, he simply judges the color and grade, and it passes down to the sizer and is picked up automatically and delivered to the packing bins. One man, on our grading table, can do the work of three to five in the old way, and do it better.

One grower said his crop run 65% one size; from a box of his own pack, 138 size, we got 7 sizes ranging from 96 to 163; after the demonstration his expression was: "I see some light." No other machine on the market can duplicate the work it does. Read the following letters, which speak louder than pages of advertising can:

Price Fruit Sizer Co., North Yakima, Wash.

Dear Sir: Since installing the four single fruit sizing machines purchased of you we have had ample time to give them a thorough trial. We have run 16,000 boxes of peaches, early varieties, and the work is perfect, absolutely no harm to the fruit. We have used these sizing machines on early apples to our entire satisfaction. As to capacity, a single machine will size 1250 boxes of Elberta peaches in ten hours. We find by using these sizers we have reduced the number of employes on the floor of packing house and have also reduced the price paid packers approximately 23 1/2%, and the packers are making as much money as they made formerly.

In the future our packing houses will be equipped with Price Fruit Sizing Machines, as they fill all the requirements. Yours respectfully, Thompson Fruit Co.

Price Fruit Sizer Co., North Yakima, Wash.

Gentlemen: From the time we first saw you machine in operation we were sure you had solved the problem of sizing deciduous fruit, although the principal, so far as we knew, was entirely original. After installing one in our warehouse we are thoroughly convinced that your machine will revolutionize the grading and packing of apples. Yours truly, Pacific Fruit & Produce Company.

Price Fruit Sizer Company

Designers and Manufacturers of Throwing Machines for Sizing and Sorting Apples, other Fruits, Vegetables and Nuts.

Works and General Sales Office, North Yakima, Washington, P.O. Box 934, Office No. 1 North Second Street

W. G. PRICE, President.

W. K. PRICE, Manager Works.

J. W. LAVIGNE, Sales Manager.

THE WORLD

OUR ORCHARD

STEINHARDT & KELLY

101 PARK PLACE
NEW YORK

Unquestionably the most
important factors in the
Fruit Industry of
the United
States



OUR MARKET

THE WORLD

BETTER FRUIT

VOLUME IX

NOVEMBER, 1914

NUMBER 5



IN THE NORTHWEST THE RAILROADS WORK IN CONJUNCTION WITH THE AGRICULTURAL COLLEGES TO EDUCATE THE FRUIT GROWERS AND FARMERS TO PRODUCE LARGER AND BETTER CROPS. INASMUCH AS ALL FARMERS CANNOT ATTEND AGRICULTURAL COLLEGES OR TAKE SHORT COURSES, THE AGRICULTURAL COLLEGES GO TO THE FARMER WITH DEMONSTRATION TRAINS, VISITING EVERY SECTION IN THE NORTHWEST. THE ABOVE SCENE ILLUSTRATES A DEMONSTRATION TRAIN OF THE OREGON-WASHINGTON RAILROAD & NAVIGATION COMPANY FILLED WITH EXHIBITS AND CARRYING A STAFF OF LECTURERS FROM THE OREGON AGRICULTURAL COLLEGE.

BETTER FRUIT PUBLISHING COMPANY, PUBLISHERS, HOOD RIVER, OREGON

Subscription \$1.00 per Year in the United States; Canada and Foreign, Including Postage, \$1.50

Single Copy 10 Cents

OUR SPECIALTIES

BOX APPLES and the **P**EACHES EARS RUNES

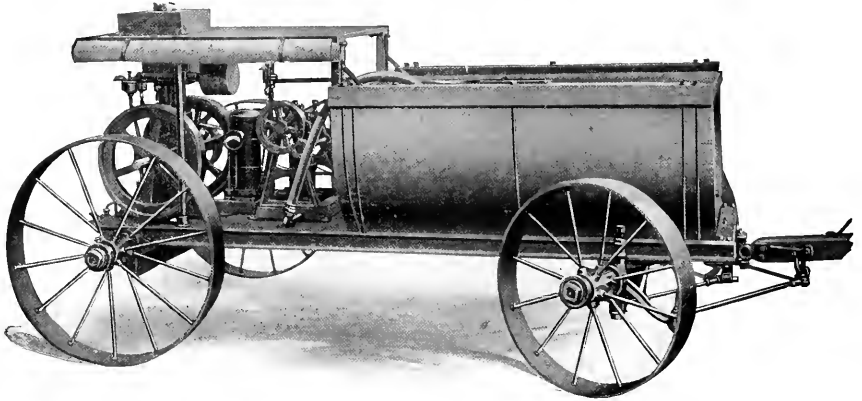
We handle more box apples than any concern in Ohio and want to hear from every grower and shipper who will have either large or small lots to offer. Let us hear from you at once.

I. N. PRICE & CO., CINCINNATI, OHIO

REFERENCES: ANY BANK OR CREDIT AGENCY

The SURE WAY TO SUCCESS

in fruit raising is in producing the highest percentage of high class fruit to your entire crop. No surer way to accomplish this can be had than by the purchase of



A Hardie Hillside Triplex

Side hills and bad soil conditions don't delay its high-pressure efficient work. A closely set orchard is not injured and can be sprayed with ease. There is no machine to be compared with it. Get our catalog giving details.

The Hardie Mfg. Co. 49 North Front St. Portland, Oregon

BALTIMORE *THE SOUTHERN GATEWAY*

Our location and facilities are in the 4A class.

We have also reservations in a new Cold Storage House for a number of cars of Box Apples—on which a liberal cash advance will be made.

"The Pioneer Box Apple House" **F. BORDER'S SON CO.**

LILLY'S SOLUBLE SULPHUR COMPOUND

THE SULPHUR SPRAY PERFECTED

MANUFACTURED IN SEATTLE UNDER NIAGARA SPRAYER CO. PATENTS
 Beware of Inferior Substitutes put up under deceptive labels and in similar packages

THIS LABEL ONLY IS USED ON THE PACIFIC COAST. ONLY ONE FACTORY—SEATTLE—WEST OF ROCKY MOUNTAINS



UNDER THIS LABEL ONLY IS SOLD THE GUARANTEED PRODUCT (NIAGARA) SOLUBLE SULPHUR COMPOUND

ONCE IT WAS SAID, even by chemists, that it was impossible to make a clear lime and sulphur solution. Niagara Lime-Sulphur Solution was the answer. First made on the Pacific Coast in Portland, it soon became known all over America. Out of that work, and by the same progressive efforts, has been produced the improved form of sulphur spray known as Soluble Sulphur Compound. This is another impossibility turned to the greatest success.

Much misinformation has been dispensed concerning the composition of Soluble Sulphur Compound. The following analysis is made by a national authority in his profession, Dr. H. G. Byers, of the University of Washington:

Sulphur freed by acids.....	51.4%
TOTAL SULPHUR.....	62.1%
SULPHUR AS POLLYSULPHIDE.....	42.3%

Sulphur as Thiosulphate.....	19.4%
Sulphur as Sulphate.....	0.4%
Sodium.....	22.1%
Ash.....	0.05%
Moisture.....	0.02%
Carbon Dioxide.....	0.0
Alkalinity equivalent to one gram of spray material, expressed in milligrams of acid.....	0.3082%

THERE IS ABSOLUTELY NO FREE ALKALI.

Note the high percentage of POLLYSULPHIDE sulphur—the most valuable constituent of a sulphur spray.

Soluble Sulphur is not a caustic soda preparation. The above analysis shows what it is.

Three years of successful work, during which time thousands of tons have been used, sufficiently proves its value.

Write for circulars and spraying instructions.

We supply the **BEST SPRAY**—You must spray in the **BEST WAY** and at the **RIGHT TIME** to succeed.

PORTLAND

THE CHAS. H. LILLY CO.

SEATTLE

Arcadia Irrigated Orchards

The largest and most successful orchard project in the entire West

7,000 acres planted to winter apples. Gravity irrigation. Located 22 miles north of Spokane, Washington, directly on the railroad. We plant and give four years' care to every orchard tract sold. \$125, first payment, secures 5 acres; \$250, first payment, secures 10 acres; balance monthly.

Send for booklet

Arcadia Orchards Company
 Deer Park, Washington



When you get to Hood River stop at the

Mt. Hood Hotel

Occupying one-half block
 With a new brick annex

ROOMS SINGLE OR EN SUITE
 TWENTY ROOMS WITH BATH
 SPECIAL RATES TO FAMILIES

Trains stop daily in front of the Hotel
 Bus meets all boats

HOOD RIVER VALLEY NURSERY COMPANY

Phone 5634 Route No. 3, Box 227 HOOD RIVER, OREGON

Plantation four miles southwest of station, Belmont Road

We will be pleased to show you trees, apple trees that have a heritage, a quality that should be considered by everyone who plants a tree. Our trees are grown in clean hillside virgin red shoe soil with clay subsoil, producing the most vigorous root system. Our buds are selected from the best bearing healthy Hood River trees that make the Hood River apple famous throughout the world. Our trees will give you satisfactory results in vigor, fruit and quality. Ask for catalog. We guarantee our products. Apples, pears, peaches, apricots, almonds and walnuts. A complete line of the best varieties of all kinds of fruits.

H. S. BUTTERFIELD, President

W. J. ENSCHEDE, Manager

SIMONS, SHUTTLEWORTH & CO., Liverpool and Manchester
SIMONS, JACOBS & CO., Glasgow **GARCIA, JACOBS & CO.,** London
J. H. LUTTEN & SON, Hamburg
 Agencies and Representatives in Every Important European Market

European Receivers of American Fruits

FOR MARKET INFORMATION ADDRESS

Simons, Shuttleworth & French Co.
 204 Franklin Street, New York

Ira B. Solomon
 Canoing, N. S.

Simons Fruit Co.
 Toronto and Montreal

Simons, Shuttleworth & Webling Co.
 46 Clinton Street, Boston

OUR SPECIALTIES ARE APPLES AND PEARS

IF YOU WANT TO MARKET
 YOUR

FRUIT

RIGHT

ALWAYS SHIP TO

W. B. Glafke Co.

**WHOLESALE FRUITS
 AND PRODUCE**

108-110 Front Street
 PORTLAND, OREGON

W. H. DRYER

W. W. BOLLAM

DRYER, BOLLAM & CO.

**GENERAL
 COMMISSION MERCHANTS**

128 FRONT STREET

PHONES: MAIN 2348
 A 2348

PORTLAND, OREGON

LEVY & SPIEGL

WHOLESALE

FRUITS AND PRODUCE

Commission Merchants

SOLICIT YOUR CONSIGNMENTS

Top Prices and Prompt Returns

PORTLAND, OREGON

STORAGE

Ship your Furniture
 to us to be stored
 until you are located

TRANSFER & LIVERY CO.
 Hood River, Oregon

The Old Reliable

BELL & CO.

Incorporated

WHOLESALE

Fruits and Produce

112-114 Front Street
 PORTLAND, OREGON

Richey & Gilbert Co.

H. M. GILBERT, *President and Manager*

Growers and Shippers of

**YAKIMA VALLEY FRUITS
 AND PRODUCE**

Specialties: Apples, Peaches,
 Pears and Cantaloupes

TOPPENISH, WASHINGTON



Stop at "The Oregon," Hood River
 Clean Rooms—Excellent Meals—One block from depot

Mark Levy & Co.

COMMISSION
 MERCHANTS

Wholesale Fruits

121-123 FRONT AND
 200 WASHINGTON ST.

PORTLAND, OREGON

A PANORAMIC VIEW

of the
 Famous Hood River Valley
 showing

13,000 acres of apple orchards,
 Mount Hood, Mount Adams and
 the Columbia River Gorge.

40 inches long Price \$1.00

SLOCUM & CANFIELD'S BOOK AND ART STORE
 Hood River, Oregon

W. F. LARAWAY

DOCTOR OF OPHTHALMOLOGY

EYES TESTED  LENSES GROUND

Over 30 Years' Experience

Telescopes, Field Glasses
 Magnifiers to examine scale

Hood River Oregon and Glenwood Iowa

BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

Size, Color and Quality in Fruit

By Professor U. P. Hedrick, State Experiment Station, Geneva, New York

APPRECIATION of fruits comes through three of the five senses—taste, sight and smell, though the last is of little importance, being so intimately connected with taste as to be almost a part of it. This leaves taste and sight as the senses by which fruits are judged. We grow fruit to eat, and it would seem therefore that taste should set the seal of approval. Connoisseurs do judge fruit by the sense of taste, but the public, in this as in many other matters, does not march with the connoisseurs, and the average person, personification of the public, uses the eye more than the tongue in measuring the merits of fruits. This difference between professional and popular judgment comes about because of a very general misconception of the relative values of size, color and quality in fruit—a misconception which furnishes my excuse for calling your attention, in a popular way, to what I conceive to be the comparative value of size, color and quality in fruit and for a very discursive consideration of how these attributes may be modified by culture.

When the nurseryman sets his net, in the shape of an illustrated catalog, for the fruitgrower, he baits it with gorgeous illustrations showing fruits of heroic proportions. The most frequent descriptive phrase accompanying this alluring bait is "of largest size." In his turn the fruitgrower usually makes an exhibit, or a sale of his wares, with the apologetic yarn that he kept the largest for his own use, or he had larger last year, or he could grow bigger ones if he were so disposed. All this shows a craving after size—a craving that has been bred and is now stimulated by competitive exhibitions in which size is usually given first place. This has gone on for so long that now size is generally esteemed about the highest quality a fruit may possess. This feeling finds expression many times and in many ways at every fruit exhibit to which the public has access. What are the true merits of size in fruits?

In fruits for the kitchen, fair or large size is distinctly meritorious, saving waste in paring and coring or pitting, though even here there are exceptions, for one does not want a huge baked apple, a mammoth peach for canning, nor large plums for preserving. But for all dessert purposes the medium-sized fruit should be preferred and the Fameuse or the little Lady apple, a Seckel or Doyenne pear, a Crawford peach and a Green Gage plum are, or should be, as acceptable as any varieties of their kinds. Certainly no one

wants to make two bites at a cherry, strawberry or any of the small fruits. Large size in fruit is often poor economy, whether on the fruit stand, in the hotel or for the home, for a small or medium fruit frequently answers the same purpose that a larger one would.

Not always, but often, undue size in any variety is accompanied by inferior quality. This is especially true if size has been brought about by much water, in which case the fruit may actually be said to be bloated. The highly-flavored solids of the normally-grown fruit are

remain. Lastly, most commonly and best means of all, the size of almost all fruits can be greatly increased by judicious thinning, an orchard operation so generally used that it needs no further discussion here.

The comparative value of color and quality in fruits is a subject of never-ending discussion. We can all agree that both are necessary in first-class market fruits, but often a choice must be made between the two. Which then? To my mind there should be no question about the supremacy of quality over color, but consumers discriminate in favor of bright colors. Thus, red apples are preferred to yellow, green and russet varieties—the latter, side by side with red sorts no better in quality, go begging for buyers. Fruit is bought to eat. What a paradox to buy that which is hardly fit to eat because it is brilliantly colored. This unjust discrimination comes about because red is more attractive to the eye of most people and because of a very general misconception that color is correlated with quality. Red apples have thus become the fashion with consumers and must, therefore, be produced by growers. Are brilliantly-colored apples of better quality than those of subdued hues?

Some say that high quality goes with high color—that is, with bright reds, crimsons or scarlets, or in patterns striped with these colors; others say "handsome but poor," indicating a belief in a correlation of high quality and low color. But a consideration of varieties shows at once that there are no correlations between color and quality. The hungry man who knows apples will say grace with just as much unction over a Green Newtown, a Golden Russet or a Grimes Golden as over a red Jonathan, a Spitzenberg or a McIntosh. Coming to individuals in a variety, it is found that apples grown in sod are brilliantly colored; those grown under tillage are of more sombre hues. Nine out of ten people will choose the highly-colored sod-grown fruit as the best flavored, but it needs only a taste to convince to the contrary. The tilled fruit is crisper, juicier and richer. On the other hand, poorly colored apples in the center of a tree are often less well flavored than the brighter fruits exposed to the sun. There are many just such seeming correlations between color and quality, but a careful study of all shows that there are no real relations between color and quality.

Just now the fashion is for red apples. But fashions in colors of fruits

Features of this Issue

SIZE, COLOR AND QUALITY OF FRUIT

MARKETS FOR OUR CANNED AND DRIED FRUITS AND OTHER BY-PRODUCTS

THE PRESENT STATUS OF THE DIFFERENT VARIETIES OF WALNUTS

COLLEGIATE WORK IN HORTICULTURE

FRUIT AS FOOD AND MEDICINE

COLD STORAGE OF APPLES

diluted or adulterated with water. So, too, extra large specimens of tree or small fruits in which size is attained by high feeding or by such abnormal practices as ringing, usually lack in quality. From all this we must conclude that while a good large fruit may be better than a good small fruit, yet if in the large fruit there is a falling off in quality it at once loses value. It is true, however, that some of the varieties of our tree fruits might be increased in size to advantage, and the value of many grapes and small fruits would be much enhanced by greater size. Thus it becomes a matter of importance to know how to increase the size of fruits, should we so desire. The task is not difficult. Generally speaking, whatever increases tree growth gives greater size in the product. To be specific, the application of nitrogenous fertilizers, plowing under leguminous cover crops, frequent and long-continued cultivation, these acting singly or associatively will increase the size of fruits. Another way of attaining greater size is by restricting the top of the plant by heavy pruning, thus getting greater growth in the parts that

change as fashions in colors of clothes, or hats or ties, change. At one time russet apples were in great demand—not so now. In some markets Green Newtowns or Yellow Bellefleurs or Rhode Island Greenings are still preferred. The present tendency to plant nothing but red apples is bound to make them less the fashion in time and to give greater demand for green, yellow and russet fruits. That color is quite unrelated to permanent value is proved by these changes and variations in fashion. The point I am seeking to make is, that we are following a prejudice in rating one color above another regardless of quality. This prejudice is detrimental to fruit growing and fruitgrowers should seek to overcome it by calling attention to the good qualities of apples regardless of color. "Plumage proclaims the fowl" but color does not proclaim the fruit. We are all well agreed, however, that it is very desirable to put a variety on the market in its own distinctive color, provided too much is not sacrificed in securing characteristic color. How may the color of varieties be kept normal, true and distinctive?

It is impossible to discuss color intelligently unless we know what color is. What makes the gold of the Pippin, or the red of the Spitzenberg? To define carefully in this case takes us far afield in organic chemistry, where all but those bred therein are soon hopelessly lost. It is difficult to make even a few simple statements in regard to color without becoming entangled in the jargon of chemistry. But, in brief, some of the colors of fruits are carried in small granules or corpuscles, while others are dissolved in the cell sap. Thus, the green, yellow, orange and some of the red colors are due to the presence of millions of brightly-stained corpuscles in the cells of the skin, while other reds, especially those of a violet cast, are due to stained cell sap. The color-bearing corpuscles are derived from the chlorophyll or leaf-green of the plant; colored sap is largely the result of oxidizing agents acting on certain substances in the fruit.

The oxidizing agents and the substances they act upon are present in green fruits in combination. As the fruits ripen the combination slowly breaks and oxidation takes place. The formation of color corpuscles, too, depends upon the action of oxygen in the presence of light and certain food elements. This is the briefest possible statement of how a very complex process takes place in which the facts to be emphasized are that oxidation goes on as a fruit begins to ripen and that coloring is an indication of ripening, and ceases when the fruit is fully ripe. Now a fruit is rightly ripe only when it is brought to its fullest maturity. But there are no well-marked lines between greenness, maturity and decay. These stages grade insensibly into each other, but coloring, it is well to remember, continues up to the point at which the tissues begin to decay.

Shakespeare might have had the ripening and coloring of fruit in mind when he wrote, "And so, from hour to hour, we ripe and ripe, and then, from hour to hour, we rot and rot." Coming as quickly as possible to practical applications of all this, we have at once to call your attention to the fact that the coloring of fruits is largely a chemical process and that chemical processes are profoundly influenced by the conditions under which they take place. Chief of these in influencing color formation in plants are light and heat, but there are others as food or lack of it, moisture, chemicals in the soil and disease.

Every fruitgrower knows that the intensity of color in fruits depends largely on the amount of light. Like the complexion of the dusky Moor, the color of fruit is often "but the burnished rays of the burning sun." Poorly-colored fruits are often due to close planting and density of tree top, whereby sunlight is excluded. Light largely determines the rate and the amount of oxidation that takes place in plant cells, and bright light makes all color-production processes active. The effects of an abundance of light in producing high color are to be seen in top branches, in open-centered trees, in outside and wide-apart rows and in the products of the sunlit states of the West or the high altitudes of any fruit-growing region. Of the few means at the command of the fruitgrower to obtain better color, those having to do with securing more light are most efficient—as pruning, greater distance apart of trees and in selecting sites best exposed to the sun. Not only does light from the sun influence the amount of color in fruit but solar heat has its effect. One who has not given the matter thought immediately jumps to the conclusion that the warmer the weather the brighter the colors, whereas the contrary is usually the case. We found from records of twenty-five harvests in New York that apples usually colored especially well in falls when they ripened in cool weather, more particularly so if the nights were cool and the days bright and sunny. Indeed, saving numerous "just exceptions and reservations," it is not too much to say that rainy weather by lowering the temperature, especially if it alternates with sunshine, may help to give high color to fruit. The effects of low temperature on color may well be seen in Northern climates and high altitudes, where colors are always brighter than in warm climates or low altitudes. The cool nights of the Pacific Northwest are nearly as potent as the sunny days in giving color to the fruits of that region. There is a plausible reason for the effects just ascribed to cool weather in influencing color. The chemical changes which bring about color in fruit accompany the period of ripening. Now ripening marks the cessation of cell activities—comes with the death of cells. In fact, color-pigments may almost be said to be waste products—the "ashes of the vital fires" of cells. Cold

hastens the death of the cell, the ripening of the fruit and so increases color. Climate, in the three phases just discussed, light, heat and moisture, greatly modifies the bloom on fruits. The bloom of fruit does not differ from that of poppies, of which the poet says, "You seize the flower, the bloom is shed." Nevertheless it greatly adds to the beauty of the product if present in any considerable amount, and modifies the color favorably despite the absurd practice of rubbing off the bloom practiced by many in exhibiting. Bloom is a valuable asset to fruit and should be increased and preserved.

Nothing is more certain than that the character of the soil influences the color of fruit. Every fruitgrower with any considerable number of trees of one variety must have noticed that the fruit on some trees are better colored than that from other trees. Not infrequently most striking differences can be found in orchards located but a few miles apart. Yet what it is in soils that influences color is not well understood. From the evidence now at hand, it seems that color effects must be due to physical conditions as soil heat, aeration and drainage, all of which would help in causing the crop to mature early and thoroughly. With the single exception of nitrogen none of the baker's dozen of elements made use of by plants under ordinary conditions exercise a decided influence on the color of fruits. The belief is current that orchard products are poorly colored on acid soils and that adding lime will cause them to take on brighter hues, but there seems to be no experimental confirmation of such effects of acid and alkali soils. A half-dozen fertilizer experiments with apples might be cited to show that fertilizers do not favorably affect the colors of this fruit. In particular, the popular generalization that "potash paints fruits," common in the press and reiterated on every page of fertilizer advertising literature, finds no verification in fertilizer experiments with apples. There is a great abundance of observational evidence to show that nitrogen, especially when applied in stable manure and nitrogenous cover crops turned under, causes a lessening of intensity in color. If the position be well taken that color comes with maturity and the death of cells it would be expected that nitrogen would decrease color since its use generally promotes and prolongs growth and delays maturity of apples. This leads to the statement that usually whatever increases the growth of apples is antagonistic to high coloring. Nothing more strikingly illustrates this than the difference in color and size of apples grown on tilled and sodded land. As every fruitgrower knows, apples grown in sod are smaller, more highly colored and mature earlier than those grown on tilled land. Were it not for the fact that sod culture greatly lowers the productiveness of an orchard, this means of increasing color might be recommended. So, too, apples grown on diseased, girdled, injured or very

old trees are usually smaller and more highly colored than apples from normal plants. Apples are almost always better colored on trees in which the growth is short, stout and firm, and on which the leaves are neither conspicuously abundant or overly luxuriant. A sailor drinking beer from one hand and whisky from the other was asked why he thus mixed his drinks. His reply was that if he drank only whisky he became drunk too soon; if only beer he became full too soon. But when he took a drink of one and then of the other he got just the right proportions of fullness and drunkenness. It seems that the desires of fruitgrowers to have large fruits and well-colored fruits must be satisfied by philosophy similar to that of the sailor. Orchards must be tilled, fertilized and cared for on the one hand to secure size of fruit by promoting growth, while such operations as will reduce size, retard growth and hasten maturity must be practiced to increase color.

What about the influence of other chemicals than those commonly used as fertilizers? Iron, especially in the form of iron sulphate, is supposed to be potent in intensifying the color of fruits. We cannot find the least bit of evidence to prove that such is the case. Orchard soils are so abundantly supplied with iron as a rule that it is like "gilding gold" to add more iron. Neither does there seem to be evidence to confirm the oft-made statement that manganese added to the soil increases color. Some spraying materials no doubt have an influence on the color of apples and pears. This is the experience of all who have carried on comparative tests of any considerable number of spraying materials. Yet so far we have nothing more than generalities as regards the effects of sprays on color. Materials applied as sprays may change the color either by absorbing and so intensifying sunlight, or they may so cover the apple or pear as to protect the fruit from light. These, however, are but surmises. A great many fruit growers are hoping to improve the color of their fruits in new orchards by having young trees propagated from scions taken from trees selected for the high color of their fruit—so-called "pedigreed stock." Once in a very great while strains of varieties having high color do arise and the high color is transmissible, but such cases are exceedingly rare. Differences in color in a variety are practically always fluctuating variations due, as I have tried to show, to climate, soil, tillage, or some stimulation or retardation of growth. Unless, therefore, it is certain that high color in a tree of any variety is transmissible—to be proved only by comparing fruits from trees grown from its scions—it is a waste of time to propagate from bearing trees with the hope of getting better color.

We come now to a discussion of quality. What is quality? The word is rolled under the tongue by both fruit-growers and consumers alike, but like "good cheer" in the fable, is "fish to

one, flesh to another, and fowl to a third." We need, therefore, to define the terms. In brief, quality is that combination of flavor, aroma, juiciness and tender flesh which makes fruits agreeable to the palate, but this is not all. The thing that gives charm to the attractions of the world, whether books, or pictures, or music, or people, or fruits, is that subtle, undefinable thing called personality. A Northern Spy, a McIntosh, a Yellow Newtown, a Seckel pear, a Crawford peach, a Green Gage plum and an Iona grape, for examples, all have distinct and charming personalities which contribute no small part to the high quality of these fruits. But many fruits do not have distinguishable individuality and the sorts named lose it when grown under some conditions. This personality may be quite aside from any tangible qualities. It is akin to the charm of a woman in which the heroine in a current play says, "If a woman has it, she needs nothing else in the world, and if she has it not, nothing else in the world is of any use." A high quality fruit must have a pleasing personality. High quality does not have the commercial value that it should, but it is coming to be worth more and more. There are two kinds of taste, natural taste and acquired taste. Only savages have a natural taste; to them crude, unrefined, tasteless foods answer all purposes. But civilized man has an acquired taste, and with each succeeding stage of civilization it becomes more delicate and more refined. Once they but know where it can be obtained, people will buy and pay for fruits of high quality—fruits with delicate and refined flavors and aromas, and juicy, tender flesh. Such fruits should be the food of the great mass of the American people, while coarse, turnipy fruits should go only to those who cannot tell the difference between a Jonathan and a Ben Davis, a Bartlett and a Kieffer. People need only to be educated as to what varieties are of high quality and a profitable demand will be created. Can the quality of varieties of the different fruits be changed by cultural methods? Possibly somewhat, but not greatly. Generally speaking, whatever care and culture make trees grow and bear normally tend to produce fruits of the highest quality. As I have said before, food and water seem to have decided effects on quality, but what combination of these essentials is best for highest quality is a matter about which we know little. "Paul plants and Appolos waters," but God gives quality. In His distribution of favors He has seen fit to characterize the fruits of some regions by higher quality than those of others, just as He has given large size and handsome color to the products of special regions.

In what has been said I have sought to establish the fact that high quality is the chief of all the attributes of fruit. But there is little use in this discussion if we cannot come to some understanding as to how the condition that prevails can be bettered. To this end a

few specific suggestions can be offered:

First—The long suit of the fruit-grower is to grow varieties of high quality. A man should grow sorts for the market that he is willing to eat himself. If individuals make a reputation for the high quality of their fruits a reputation will soon be established for the region and for the fruit.

Second—Let every fruitgrower deprecate above all things the oft-made assertion that the public wants trashy stuff—cares only for appearance and not for quality. It is the fashion of the times to decry the public. Certain papers say the public wants only yellow journalism; some writers hold that the people will read only light or vulgar fiction; rag-time music is supposed to suit the public; theatres will present only sensational plays; following the fashion, fruitgrowers hold that the public has the tooth of a gorilla, the taste of a buzzard, the stomach of an ostrich, and by choice fills its maw on Ben Davis apples and Kieffer pears. It is not true that the public likes poor fruit; the better the fruit the more of it will be eaten. People are slow moving, but once they learn true worth in fruit their appetite will be for the good varieties. They will not be content with poor or mediocre sorts. If the lover of choice viands, and who is not, must wipe the tongue around the mouth and titillate the palate in order to find the flavor of fruits he will take to other delicacies.

Third—It is a good policy not to break rudely with the old but to run smoothly into the new. It would hardly be wise for any man to cut down or graft over certain apples, or pears, or plums, or pull out certain grapes because they are of poor quality. But in the planting of new orchards a man should look well to the quality of the varieties he selects. Speaking broadly, fruits of fine flavor can be grown as easily as the grosser tasting ones. In planting for the future, then, plant for quality.

Fourth—Never in the history of the world have there been so many men directing their efforts toward the improvement of plants. With the recent discoveries in plant breeding and the accumulated knowledge of centuries the efforts that are being put forth are bound to result in many new introductions within the next few years. A man may be pardoned if he clings to some of the mediocre varieties we now have, for these are the elder-born to whom we have become attached in tenderly carrying them through a helpless infancy, but as the physicians and midwives of horticulture bring in the newborn let them be chary of a blessing until their character for high quality is established. Let them be "born to blush unseen," and if christened let them remain in the limbo of the nurseryman's catalog if high quality be not among their accomplishments. Let us raise the standard of excellence by accepting only new fruits which are superior in quality to their predecessors.

Fifth—Nurserymen can do much to encourage the growing of good fruit and to secure the appropriate recognition of high quality. The country is filled with men and women from city, town and country who want to grow fruit for pleasure and profit. When these embryonic fruitgrowers pick the shell and get ready to plant, they go to a nurseryman for trees. Now if the nurseryman will sell all unfledged fruitgrowers varieties of quality rather than what they can spare, fruit growing and, in the long run, the nursery trade will be helped. Some nurserymen hold it to be their inalienable right to substitute when varieties run short. If all such will only slip in a choicely good variety instead of an odd or an end there will be less poor fruit. Nurserymen say they grow the varieties that fruitgrowers want. In reality, however, they very largely force planters to take sorts that grow readily and make good-looking trees in the nursery. Trees for the orchard must be grown in the nursery; trees grown in the nursery must be sold to the fruitgrower; the weal or the woe of the fruitgrower is the weal or the woe of the nurseryman. If tree growers would push the sale of varieties and trees that are truly most useful to the tree planter, nurserymen, fruitgrowers and the public all will be gainers thereby.

Sixth—It should be the business of horticultural societies, one and all, to make the public familiar with the names and the qualities of fruits. With this knowledge fruit buyers would pay the difference between good and poor quality varieties, just as they pay the difference between a porterhouse and a pot stew. Why should they not? There are several ways of reaching the public in this matter. Fruitgrowers and their customers may both gain knowledge of what are the best fruits, and which of them may be grown, by a full and frank discussion of the whole matter at horticultural meetings. County and state fruit organizations ought to do more in the way of making instructive exhibits both at their meetings and at the fairs. In these exhibits much more attention ought to be paid to fancy fruit—high quality fruit. Indeed, it seems certain that higher premiums ought always to be offered for choicely good fruits than for the varieties of poorer quality.

In conclusion: Why discuss this matter? Is it to encourage growing fruit only for a select few who have the cultivated taste? Not by any means. The common taste which falls to with a vigorous appetite upon any fruit presented is now, and must ever be, the chief customer of the fruit grower. But the taste of the multitude should be educated by all possible means for better and better fruits. Why? Because in the long run it means the consumption of a great deal more fruit the country over. Is it reprehensible to grow fruits of poor quality? Possibly not, but it would mean in the course of time the wiping out, root and branch, of the fruit industry if all fruit growers

grew poor varieties; besides it would present the vile and sordid spectacle of people deliberately devoting themselves to growing poor fruit when they might as well grow good fruit. Is high quality the only requisite of a good variety? No indeed. There are a score of requisites of fruit and tree that go to make a good variety, but among these quality is not now receiving appropriate recognition, and it is for such recognition that I am pleading. Is this a matter of sentiment or of business? Both. I am not averse to putting some sentiment in fruit growing, but I hope I have not been arguing before a packed jury in trying to convince my readers that it is good business as well as sentiment to grow good fruit.

Dried Fruits An Economical and Valuable Diet

Fresh fruits are divided into two classes, "flavor fruits" and "food fruits," according as they are valued for their flavor or as a food, according to the Office of Nutrition Investigations for the United States Department of Agriculture. Those that are 80 per cent or more water fall under the first classification (apples, pears, peaches and most of our common fruits), while those containing less fall under the latter (bananas, grapes and figs). The food value of a pound of dried fruit is, of course, much greater than that of a pound of fresh fruit. A pound of the latter will yield an average of about six ounces dried, but the amount of water in the original fruit is no guide to the food value of the dried product. The main change which takes place during drying is the loss of water, but other changes also occur. Very often the right degree of heat produces changes not unlike those which occur during natural ripening on the plant.

In some cases the crude fiber which forms the basis of the plant structure is reduced in amount or softened. Much of the starch is changed to some form of sugar. The change in flavor is due partly to the proportionate increase of sugar from loss of water and to absolute increase from chemical changes. To determine which of two fruits is more economical, not only must the cost per pound be known, but the amount of bodily fuel that makes for energy and protein (muscle-building material) a pound of each would supply. One must also consider what expense is required to prepare each for the table. Grapes commonly cost less a pound than raisins, but a given sum spent for grapes will buy a smaller amount of nutritive material, since the proportion of water is much higher than in raisins. On the other hand, low-priced fresh fruit is sometimes as economical as a somewhat cheaper dried fruit, since the latter would require sugar and fuel to make it ready for the table. Attention should also be directed to the extent of inedible material.—Office of Information, United States Department of Agriculture.

To Preserve Sweet Cider

During the cider-making season many requests are received for a convenient, efficient and yet inexpensive method for preserving sweet cider. Mustard and horseradish have been employed to this end for years, with varying degrees of success, but there is nothing which commends itself more highly for this particular purpose than calcium sulphite. This must not be confused with calcium sulphate or gypsum. The cider can be preserved either in a fresh, sweet condition, just as it comes from the press, or after it has undergone a desired amount of alcoholic fermentation. For each gallon of cider dissolve one-eighth to one-quarter ounce of calcium sulphite or sulphite of lime in one quart of the cider to be preserved; add this solution to three quarts of cider, making one gallon in all, and mix thoroughly in the jug or cask. Allow it to stand for several days, when it will be ready to bottle if it is so desired. The calcium sulphite can be obtained from the local drug store for about sixty cents per pound or five cents the ounce. Often a little cinnamon, wintergreen or saffrafras is added to the bottled cider to give it a spicy flavor, which is more pleasing to some tastes. A pinch of baking soda added at the moment of inserting the stopper helps to neutralize the acid and render the beverage effervescent when it is unstopped. If this is done it will be necessary to tie in the corks.—Walter G. Sackett, Bacteriologist, Colorado Experiment Station, Fort Collins, Colorado.

Some Reasons Why Fruits and Vegetables Spoil

All about us in ground, water and air are numberless little plants called moulds, yeasts and bacteria. Most of them are only visible by aid of a microscope. Some of these little plants do well in one kind of soil or atmosphere, while others require environment of an entirely different nature. The souring of milk, the working of canned fruits, the decay of canned vegetables and meats, the change of cider into vinegar, etc., are all due to the presence of certain of these plants. The fact that they are too small to be seen as they pass through the air explains why so many people believe the air itself causes the working of canned goods. It has been found, however, that it is possible to keep canned goods without sealing in the usual manner by simply filtering all the air that reaches them. For example, take a can of peas, seal it with a plug of cotton instead of the usual lid, then heat it until all the germs are killed, and the vegetables will keep without spoiling because, while the air can pass in and out of the jar, the plants causing the damage are strained out. Experiments of this kind have proved in different laboratories that it is the inhabitants of the air and not the air itself which causes decay.—Miss Grace Smiley, Colorado Agricultural College.

Markets for Canned and Dried Fruits and Other By-Products

H. B. Miller, Director of School of Commerce, before By-Products Division of Northwest Fruit Growers' Association, Portland, September 10, 1914

BY-PRODUCTS, as taken up by your committee, I take it signifies canned fruits, vegetables, dried fruits, jams, jellies and preserves. The development of fruit canning in the United States, according to the United States reports, has been, in round numbers, from \$11,000,000 in 1899 to \$13,000,000 in 1909, only an increased valuation of \$2,000,000 in ten years. That is not a very remarkable increase, nor as great as one would have expected. Without examining into the facts, I am sure we would all have supposed that the increase was far greater. We would have expected, for instance, a great development or increase in California, but the fact is that the quantity produced in California, in canned fruits, in 1899 was valued at \$7,310,000, and that produced in 1909 was valued at \$7,248,000, so that in the great fruit-growing State of California there has been no great increase in the canning of fruits within the last census period.

I have not been able to secure any reliable data regarding the increase in production since the last census returns. In the matter of exports, however, there has been such a remarkable increase that it seems that there must have been quite a considerable development in the canning of fruits since 1909. The exports in that year amounted to \$2,650,000, while the exports in the season of 1912-13 amounted to \$5,600,000, or considerably more than double that in 1909-10. So I think we may take it that there has been a very remarkable development in fruit canning since the last census returns.

The great bulk of the fruits canned consists of peaches, apples, pears, apricots, berries and cherries, the valuation being according to this order, peaches being more than double that of any other one product, amounting to over \$3,700,000 in 1909, cherries the least of all, amounting to over \$1,000,000. Between the years 1899 and 1909 there is quite a marked increase in the value of apples, pears, berries and cherries canned, the greatest increase being in cherries, and these were mostly sour cherries for pie purposes. In California alone, the increase in canned fruits from 1900 to 1912 was from \$2,800,000 to \$4,800,000.

The value of canned vegetables produced in the United States in 1899 was \$28,700,000, while in 1909 it had grown to \$51,600,000. The greatest increase in this was in baked beans. The increase in California in canned vegetables during this ten-year period was \$1,200,000. The increase in California from 1900 to 1912 was from 800,000 cases to 2,800,000 cases. The quantity of canned tomatoes packed in the United States in 1905 was 6,500,000 cases, in 1913 it was 14,200,000 cases, or considerable more than double the amount in 1905. Canned vegetables exported in 1913 amounted to \$1,500,000, slightly less than the amount exported in 1912.

The value of dried fruits produced in the United States was \$1,700,000 in 1899 and \$19,800,000 in 1909. Prunes \$970,000, raisins \$1,000,000, apples \$2,000,000, peaches \$300,000, apricots \$455,000, other fruits \$49,000, in 1899, as against prunes \$5,130,000, raisins \$5,000,000, apples \$3,000,000, peaches \$2,500,000, apricots \$2,277,000, other fruits \$2,000,000, in 1909. The total increase in dried fruits from 1899 to 1909 was from \$4,800,000 to \$20,000,000.

In California the production of cured fruit has increased from 145,000 tons in 1908 to 259,000 tons in 1912. The increase was almost entirely in prunes, raisins and peaches. In prunes alone the amount produced in California in 1895 was 65,000 pounds and in 1912 205,000,000 pounds.

Exports from the United States in dried apples increased from 28,000,000 pounds in 1905-06 to 54,000,000 pounds in 1911-12, prunes 10,000,000 pounds in 1900-01 to 118,000,000 pounds in 1912-13, apricots 14,000,000 pounds in 1905-06 to 35,000,000 pounds in 1912-13, peaches 1,000,000 pounds in 1905-06 to 6,500,000 pounds in 1912-13.

In California dried fruits amounted to \$2,600,000 in 1899 and \$16,000,000 in 1909. In Oregon, \$14,000 in 1899 and \$173,000 in 1909.

The production of pickles, preserves and sauces in the United States was \$36,000,000 in 1899 and \$45,000,000 in 1909.

Establishments for canning, preserving and drying fruits and vegetables had, in 1899, an investment of \$28,000,000, in 1909, \$67,000,000. Wages paid in 1899 amounted to \$9,500,000, in 1909 to \$15,000,000. The value of products in 1899 was \$56,000,000, in 1909, \$91,000,000.

In the matter of exports of dried fruits, the most remarkable is in the development of our dried prune exports, which seem to have grown enormously in Europe, as well as in India, Siam, the Philippines, Egypt, French and Portuguese Africa, Dutch Guinea and British Honduras.

PRUNE EXPORTS, BY COUNTRIES

	1908-09 Pounds	1913 Pounds
To Germany	8,500,000	19,000,000
To The Netherlands	2,750,000	16,500,000
To Belgium	2,000,000	6,300,000
To Denmark	1,000,000	3,750,000
To France	11,000	12,000,000
To Canada	6,600,000	11,000,000
To Great Britain	3,750,000	8,500,000

Another very remarkable expansion of dried-fruit exports has been in our exports of dried apples, which in 1913 amounted to over 10,000,000 pounds to Germany, 6,000,000 pounds to The Netherlands, and only 5,000,000 pounds to all the rest of the world. Our exports of dried apricots reached the amount of 16,000,000 pounds in 1913, Great Britain taking 5,000,000 pounds and Germany 3,000,000 pounds. Our canned goods are exported largely to Great Britain, which took in 1912 \$2,261,000 worth, while all of Europe took \$2,900,000. North America took \$1,150,000 and

South America took only \$100,000. Our exports in jams, jellies and other preserved fruits does not exceed more than about \$200,000 in value, two-thirds of which goes to North America, practically to Canada and British Columbia. In dried fruits, then, we may say that we have the world for a market, as well as an enormous market in the United States. In canned fruits our markets are limited largely to Great Britain, North America and the United States. In jellies and other preserved fruits our market is practically at home, in our own country.

The exports of pickles, sauces, etc., in 1912 was \$285,000 to Europe, \$1,150,000 to North America, only \$20,000 to South America, and small amounts to other parts of the world.

The exports of canned vegetables to all European countries amounted to only \$317,000; \$195,000 to the Philippines; \$1,035,000 to North America; \$58,000 to South America, and very limited amounts to other parts of the world, including \$66,000 to Asia.

From this data it will be observed that the greatest opportunity for the development of markets for the by-products of the Northwest lies in dried fruit to European countries, some to Asiatic countries, and canned fruits almost exclusively to Great Britain and North America. The great increase in the exports of prunes has been in the years that very satisfactory prices have been received by the producers. As far as the Oregon prune is concerned, these increased exports have taken place on the basis of five cents per pound to the growers, which is certainly a most satisfactory condition of market development. During 1912-13 the prune exports from the United States to foreign countries were more than half the total production of the dried prunes of the United States. These great exports can continue to grow on the basis of five cents to producers and offer great encouragement to the increased production of prunes.

In the matter of dried apples the situation is somewhat different. Reports from New York show that in 1900 the apple growers received fifteen cents per bushel for apples that went to evaporators, or about 86 per ton. In 1901 they received 32 cents per bushel, or approximately \$14 per ton. In 1902 and 1903 they received approximately \$10 per ton. The latest reports from New York show that in a ten-year average growers received for apples that went jointly to evaporators and vinegar plants \$10 per ton. New York is the greatest of all apple-producing districts and produces more dried apples for export than any other state, and if this section of the country is to compete with them in the foreign markets, probabilities are that we are not likely to receive a price in excess of \$10 per ton. These figures of the ten-year average show that 37½ bushels to the acre of culls were sold for evapo-

ration and cider stock, and the report says that the price of \$10 per ton was above the average and that probably \$8 per ton would be nearer the general average in the state.

Our consular returns in our investigation of foreign markets shows that chops from the United States sold in Germany at from 2 to 3½ cents a pound. Just what price may be realized after there is an extensive development of the production of dried loganberries, raspberries, etc., in the Northwest is a little difficult at this time to determine. If the development is kept in harmony with the extension of the markets, there is a prospect that the loganberry at least, and probably the blackberry, will be sold in the market for drying for 2½ to 3½ cents per pound for the fresh berry. Insofar as foreign markets are concerned, however, for these products, our investigations revealed that there has been little or no development, and if this country continues to plant and produce berries to be marketed in the dried form extraordinary efforts will have to be made to prepare the market for them, and the probabilities are that these markets will have to be found mostly in North America, at least until some great effort is made for their introduction into foreign countries.

In the matter of jellies, preserves, pickles, etc., foreign markets reveal a very small proportion of goods of that character from the United States. The market for these things will also have to be strenuously exploited and developed. There is no reason, however, why these products should not be extensively produced here in the Northwest and marketed all over the world. In the line of berries we produce the best that the world grows. Strawberries, raspberries, blackberries, loganberries, gooseberries and others of a similar nature that are produced here in the Northwest cannot be excelled in any part of the known world. But the market side of the question has yet to be worked out, and to proceed with any extraordinary production on these lines, without at the same time making special efforts to extend the markets would be extreme folly. I have seen strawberries, blackberries and raspberries sent from British Columbia to Crosse & Blackwell at London, shipped in barrels, to be prepared into jams, jellies, etc., for the world's markets.

Insofar as the production is concerned, there is no reason why a very extensive industry in this line should not be developed here in the Northwest. With the opening of the Panama Canal we are put on the map. As far as world's markets are concerned we will be able to compete in the production of this class of goods if we devote ourselves to the production of high-class articles of a standard quality and organize for marketing the same. The new rate of transportation by the Panama Canal on canned goods from here to New York, for instance, is 30 cents per hundred, as against 85 cents by rail, and for dried fruit is 40 cents per hundred, as against 81 by rail, and

a reduction to all European points of one-half the present rail and steamer rates by direct shipment. This should give a great impetus to the development of all dried and canned goods for which this country is especially fitted for production.

Nothing further is now needed but the organization of communities and districts for canning, drying and preserving, and the further organization of selling agencies to distribute these goods through the world. Here in the Northwest we are usually too prone to harp upon our splendid possibilities of production, to view with pride and pleasure the various fruits and vegetables which we produce, to praise in all kinds of literature the excellent advantages which we have in production, and then to sit quietly down and fold our hands and expect some unseen power to take up the problem of preparation and marketing these splendid fruits for which we have all of the excellent conditions of production. We have been given to making exhibits only of our raw products, advertising them on all occasions almost all over the world for the purpose of getting more producers into this territory, and we have failed to realize that preparation and marketing are just as essential as production. We now find ourselves with vast quantities of fruits produced, unprepared for market and without the commercial machinery to carry them to the consumer. This great City of Portland has neglected seriously that feature of its proper function. They seem to have considered that their duty is to bring producers into this territory, while as a matter of fact their primary function is to market the products of the Northwest. If these products are marketed in such a way that the producers get fair returns for their labor and investments, the question of increasing producers will take care of itself. A producer who is making a profit and having a comfortable existence will be the best advertiser for the country. If the producers of fruits, berries and vegetables here are not securing a profit from their products, the difficulty is almost entirely confined to the market end of the problem.

The commercial and business interests here have permitted the people from California and other states to do most of the marketing of the fruit products. The California cannery people have had no well-defined interest in bringing up the production of fruits in this territory, nor have they been interested in any way in seeing that the producers received fair returns for what they grew. On the other hand, they have continually hammered down the prices to the producer until he has been totally discouraged in the whole question of trying to produce fruits and berries for the Portland cannery.

A few years ago a producer of Bartlett pears in Oakland, Oregon, experimented with the market in California and an Oregon cannery. He divided his crop equally in quantity and qual-

ity, sending half to California and half to the cannery in Portland. The Portland cannery reported that his pears were inferior and so poor that they could not afford to pay but a very small price; I think it was about \$9 per ton. The California cannery reported his pears excellent, entirely satisfactory, and paid him a price three times that paid by the Portland cannery. This year the California canneries have bought pears at Salem and shipped them to California for canning, paying as high as \$42 per ton for the first quality and \$25 per ton for the second grade. It has finally become a well-established fact that the Oregon Bartlett pear, although not quite so good for shipping in the fresh state, is fully equal, if not superior, to the pears produced anywhere in the world for canning purposes. Had this fact been made clear by the canneries of Oregon years ago, and the growers encouraged in that line of industry, Oregon would today be taking in immense quantities of money for canned pears.

The Oregon canned pears are now pronounced in France and Great Britain to be especially fine. In fact, in our world survey of the fruit markets, we find it uniformly established wherever Pacific Coast canned goods find a market that they are pronounced thoroughly satisfactory, if not superior, to the canned fruits from any other part of the world. The canneries now operated and maintained by Oregon people are proving that the Oregon Bartlett pear, the Oregon strawberry, gooseberry, blackberry and raspberry cannot be excelled, and in all of these lines prospects are excellent for an expansion in trade. The manager of the California Fruit Canners' Association, Mr. C. H. Bentley, in his address before the California Fruitgrowers' Convention pays high tribute to all of these Oregon products and wishes that in some of these things they could produce as good quality in California as we produce here. He pays a particularly high tribute to the Oregon strawberry and says that the markets will take great quantities of them. He pays equally high tribute to the Oregon gooseberry.

What is absolutely necessary for the development of this industry in the Northwest is the establishment of canneries and dryers owned and operated by the people of this territory and their produce marketed by an association permanently interested in the development of the industry. This organization seems to be imbued with the importance of securing a market for the by-products of the fruitgrowers. To my mind, this should not be the central idea of the canning and drying and preserving industry. If this territory has the real natural advantages for the production of a high quality of fruits, berries and vegetables of certain types, it is of primary importance to put up a high quality of goods, to distribute them and establish a reputation for high-class products. We must make a reputation for our canned pears, for our cherries, for our blackberries and

raspberries, our loganberries, our strawberries, our string beans, our beets and other kinds of vegetables. We must make a reputation for a fine quality of dried fruits of all kinds which we can produce to advantage, and when we have done this, when we have established canneries and dryers, and factories for producing jams, jellies and fruits in various forms, of the finest quality, the by-product question will take care of itself. These plants will have no difficulty in handling the by-products after they have established a substantial reputation for all these various qualities of high-class fruits, berries and vegetables.

An investigation of the subject will reveal, I think, beyond any question, that the organizations which are succeeding in these lines are those that are producing a high quality of goods. There ought to be a hundred canneries and drying plants in the Northwest producing all kinds of canned, preserved and dried products, all associated into one selling organization. A selling organization should supervise the standard and quality of the things produced and exert every possible encouragement by finding a market. I think it is fundamental under conditions existing here that the producers and market agencies should have a community of interest and operate in complete harmony under some unit system of organization. The important thing in marketing canned goods is to be able to provide the greatest diversity of production. It is essential that they should be able to handle large quantities of peaches, apricots, cherries, beans, berries of all kinds, and to do this successfully these things will have to be produced in this section of the country according to the soil and climatic conditions favorable, and assembled under one selling organization. That, I think, is quite necessary to the successful establishment of the industry in this country.

It will be observed that our best market for dried fruits is in Germany and the Netherlands, and that our only great market for canned fruits is in Great Britain and North America. We naturally wonder why Germany is not also a great market for our canned and preserved fruits. A careful examination of the foreign markets reveals the fact that the greatest handicap to our trade in these products is due to the heavy duties charged in foreign countries, excepting in England. A serious handicap to our South American trade in both dried and canned fruits lies in the heavy duties provided in those countries. In Argentine the duty is 2½ cents on dried fruits; in Brazil 7.6 cents per pound; in Chile 8¼ cents per pound; in Uruguay 7 cents per pound. In Germany the rate on jams, jellies, etc., is 6½ cents per pound, and the people have petitioned the imperial office to have that rate doubled. They have also petitioned the government to have all of the steamship lines, subsidized by the government, purchase their canned goods in their own country. In Argentine the rates of duty

on canned goods range from 7 cents up; the duty in Brazil on fruit jams and jellies is 19 cents per pound; in Italy the duty on canned goods is 10½ cents per pound, on jams and jellies it is between 8 and 9 cents per pound; in the Netherlands the duty on canned goods preserved with sugar is 11½ cents per pound, on jams and jellies 3½ cents per pound; in Russia it is 21 cents per pound for fruit in tins.

If it were not for these high duties there is no doubt but that our exports in canned and preserved fruits could easily be more than doubled. Our new tariff law has no reciprocal returns in tariff rates with foreign countries. It would seem that we have opened our country to imports of nearly all things from South America free, while we have gained nothing in reciprocal arrangements with those countries. The entire Pacific Coast is deeply interested in this problem of foreign duties on our products and the fruitgrowers should see to it that there is developed in this country a well-defined purpose to have the markets of other countries opened free to our products where we open our markets free to them. I call your attention to this fact with no motive of a political nature, but merely to point out to you the absolute necessity of a movement of this kind, in order that the fruit interests of this section of the world may be properly developed and have a fair field.

The primary necessity of the Northwest, from my point of view, lies in the development of organizations for preparing and marketing products along all lines of fruits, vegetables and berries for which we have exceptional advantages of production. A well-defined campaign for this purpose ought to be organized and carried out by this or some other association. The agricultural colleges should be asked to divide the various districts and their special capacities for production of the different classes of fruits, etc., and to designate the districts where certain things can be produced to the best advantage. They should be asked to work in harmony with the schools of commerce and other organizations for the encouragement of the development of association and organizations for handling the products of the various districts where conditions are favorable.

Through this organization the various commercial organizations throughout the Northwest should also be urged to take up the plan and earnestly cooperate for the establishment of associations that will prepare these products in a high-class form for commercial uses. Their influence should also be requested in endeavoring to get these organizations, when established, to a general selling agency that will handle the products of all of these associations. It is my firm conviction that the welfare of the whole problem of fruit growing is wrapped up intimately with this question of the establishment of organizations for the canning, drying, preparing and marketing of these products.

Lane County, in this state, has taken a splendid lead in this direction and



COLD WATER AND TAKANAP SOFT NAPHTHA SOAP

make a perfect Kerosene Emulsion. Kills scale and insects. Sample free.

TAK-A-NAP COMPANY
GERMANTOWN, PA.

CARTERS TESTED SEEDS, INC.

DEAN D. BALLARD, N.W. Mgr.
Arcade Bldg., Seattle, Wash.



Send for our catalog of these famous prize-winning English vegetable and flower seeds.

Horticulturist and Farm Manager

Orchard or general farm manager seeks re-engagement this fall. Have had several years of practical experience in the management of a large commercial orchard. Am also thoroughly familiar with grain and livestock growing. Graduate of Western agricultural college. Address "B," care Better Fruit.

Wanted An Experienced Horticulturist

as orchard man on an apple and pear orchard (20 acres in bearing). Must be thoroughly trained in pruning, spraying, irrigation and diseases of apples and pears on irrigated land. Young, unmarried man preferred. Write, giving reference and experience, to VALVERIO RANCH CO., VALVERIO, CALIFORNIA.

Capable Orchardist Wants Position

ADDRESS "S" CARE "BETTER FRUIT"

has four organizations of this character putting all their fruit products into excellent marketable condition, establishing a first-class quality, and the by-product problem is being settled in this way. At Eugene they are canning, drying, pickling, preserving and putting into vinegar their fruits, berries and vegetables, and if every other part of the Northwest having equal advantages would simply do the same we would soon have the establishment of an industry that would make fruit growing, in general, one of our most substantial and profitable industries.

LESLIE BUTLER, President
 TRUMAN BUTLER, Vice President
 C. H. VAUGHAN, Cashier

Established 1900

Butler Banking Company

HOOD RIVER, OREGON

Capital \$100,000

4% interest paid in our Savings Department

We give special attention to good Farm Loans

If you have money to loan we will find you good real estate security, or if you want to borrow we can place your application in good hands, and we make no charge for this service.

THE OLDEST BANK IN HOOD RIVER VALLEY

LADD & TILTON BANK

Established 1859

Oldest Bank on the Pacific Coast

PORTLAND, OREGON

Capital \$1,000,000.00

Surplus 1,000,000.00

Officers

W. M. Ladd, President
 Edward Cookingham, Vice President
 W. H. Dunckley, Cashier

R. S. Howard, Jr., Assistant Cashier
 J. W. Ladd, Assistant Cashier
 Waller M. Cook, Assistant Cashier

INTEREST PAID ON TIME DEPOSITS AND SAVINGS ACCOUNTS

Accounts of banks, firms, corporations and individuals solicited. Travelers' checks for sale, and drafts issued available in all countries of Europe.

The First National Bank

Hood River, Oregon

Capital and Surplus
 \$135,000

4% Interest Paid on Savings and Term Deposits

F. S. STANLEY, President
 E. O. BLANCHAR, Cashier

"WE STARTED RIGHT AND WE ARE RIGHT"

6458 Acres

IN OUR ENTERPRISE

4178 Acres

ALL IN APPLES

Nine miles continuous rows of trees, the largest apple orchard ever planted. All are one, two and three years old; the two and three year old all sold, amounting to over 3,000 acres.

We are now offering our one year at terms to suit you.

We give five years', from date of planting, free care. Our company is unlike others in the feature of staying with our purchasers after the free care period. Our plans make our interests mutual; we all work together for the interest of all.

Our Booklet will give you a simple statement of our dealings and methods. Write us for information.

DUFUR ORCHARD COMPANY

Northwestern Bank Building
 Portland, Oregon

OUR SPLENDID CLUBBING OFFER

"Better Fruit" offers to its readers one of the finest lists of clubbing offers ever placed before the public. These rates do not apply to Canada, owing to extra postage.

Review of Reviews.....\$3.00
 Everybody's.....1.50
 Better Fruit.....1.00
 Total.....\$5.50
 All for.....3.60

World's Work.....\$3.00
 Scribner's.....3.00
 Better Fruit.....1.00
 Total.....\$7.00
 All for.....5.25

Outlook.....\$3.00
 Ladies' Home Journal.....1.50
 Better Fruit.....1.00
 Total.....\$5.50
 All for.....4.90

Woman's Home Companion.....\$1.50
 World's Work.....3.00
 Better Fruit.....1.00
 Total.....\$5.50
 All for.....3.70

Fruit and Produce Distributor.....\$2.00
 Better Fruit.....1.00
 Total.....\$3.00
 Both for.....2.00

Delineator.....\$1.50
 Everybody's.....1.50
 Better Fruit.....1.00
 Total.....\$4.00
 All for.....3.10

Harper's Magazine.....\$4.00
 Good Housekeeping.....1.50
 Better Fruit.....1.00
 Total.....\$6.50
 All for.....5.45

Cleanings in Bee Culture.....\$1.00
 Good Housekeeping.....1.50
 Better Fruit.....1.00
 Total.....\$3.50
 All for.....2.65

Ladies' World.....\$1.00
 Modern Priscilla.....1.00
 Pictorial Review.....1.00
 Better Fruit.....1.00
 Total.....\$4.00
 All for.....2.50

Today's.....\$0.50
 Ladies' World.....1.00
 McCall's......50
 Better Fruit.....1.00
 Total.....\$3.00
 All for.....2.00

Pacific Homestead.....\$1.00
 American.....1.50
 Better Fruit.....1.00
 Total.....\$3.50
 All for.....2.50

Northwest Poultry Journal.....\$0.50
 Good Housekeeping.....1.50
 Everybody's.....1.50
 Better Fruit.....1.00
 Total.....\$4.50
 All for.....3.60

Oregon Agriculturist.....\$1.00
 Northwest Poultry Journal......50
 Better Fruit.....1.00
 Total.....\$2.50
 All for.....1.85

Hoard's Dairyman.....\$2.00
 Woman's Home Companion.....1.50
 Better Fruit.....1.00
 Total.....\$4.50
 All for.....3.15

Western Farmer.....\$1.00
 Northwest Poultry Journal......50
 American Bee Journal.....1.00
 Better Fruit.....1.00
 Total.....\$3.50
 All for.....2.35

Through lack of space we are unable to give a more extended clubbing list. Rates on all magazines will be given to any of our subscribers by writing "Better Fruit."

A New Dust-proof Bearing Perfectly Oiled

Here is an improvement that tells in still another way of durability, efficiency and light draft found in the

Cutaway
CLARK

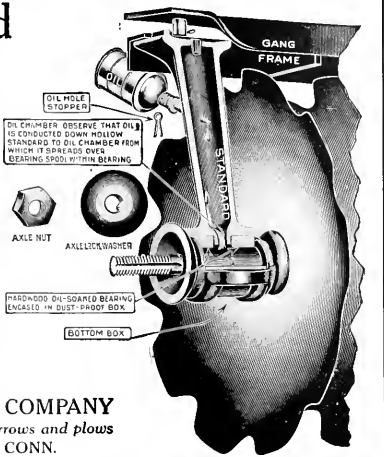
Disk Harrows and Plows

The illustration in this announcement shows how our hardwood oil-soaked bearings are now encased in metal dust-proof boxes; and how the oil is conducted inside of the bearings. Could it be simpler? Could it be improved?

Ask your dealer to show you a CUTAWAY (CLARK) disk harrow or plow. If he doesn't handle them, write us at once for free catalog.

THE CUTAWAY HARROW COMPANY

Maker of the original CLARK disk harrows and plows
940 MAIN ST., HIGGANUM, CONN.



Cold Storage of Apples

Office of Information, United States Department of Agriculture

The proper function of cold storage is to retard the ripening processes of the fruit and the development of decay organisms and skin blemishes. The first responsibility for the keeping quality of his fruit rests with the grower, since it is his growing and handling methods that largely determine its vitality, freedom from disease and general condition when stored. Cold storage is not a remedy or a restorative for poorly developed, weak, imperfect fruit, but is the most effective method of preserving the quality, flavor and appearance possessed by the fruit at time of picking.

The first step in successful cold storage of apples has been found to lie in the practice of such cultural, spraying and pruning methods as insure production of the sound, healthy, well-colored fruit, free from disease. Assuming this as the first requisite, the following factors have been found to most influence the keeping quality of the fruit and furnish best conditions for long storage: (1) Proper maturity at time of picking; (2) care in all handling operations; (3) prompt storage after picking; (4) a proper storage temperature.

Careful and extensive investigations have demonstrated that fruit picked at full maturity can be held for a longer period in storage and is less affected by scald and decay than that picked when somewhat immature. Two important commercial varieties, Rome Beauty and Winesap, have been found to be especially susceptible to scald during storage, if picked prematurely. There is no doubt that several thousand dollars are lost to the industry each year through the improper picking of these two varieties alone. The results emphasize strongly that more care and

attention should be paid to this detail of the harvesting operations than is usually the case. By full maturity, however, is not meant over-maturity, which may cause fully as heavy losses as immaturity. Each grower should study his own fruit and his own conditions in order to determine the proper picking stage. Probably the most reliable single indication of maturity is the whitening or slight yellowing of the "ground color" of the fruit. This is the color underlying the blush or red color and should not be confused with the latter.

Care in all handling operations is the second important requisite of successful storage. A class of fungi, of which the common blue mold is an example, are known to be unable to attack and cause decay of healthy, uninjured fruit. In spite of this fact, very serious rots, both in storage and in transit to market, are the work of fungi of this type, and the largest contributory cause in all cases is bruising or skin breaking suffered by the fruit in the picking and packing operations. Microscopic bruises and breaks in the skin are large enough to afford entrance to the spores of these fungi and the necessity for the utmost care in all operations connected with the handling of the fruit to avoid bruising and mechanical injuries is more urgent than most growers realize.

There is a marked difference in condition between fruit stored as soon as possible after picking, usually not more than two days later, and otherwise comparable lots of which the storage was delayed ten days or two weeks. Such delay is especially injurious during a period of warm, humid weather. The delayed fruit at withdrawal from storage is riper, yellower and duller than the corresponding "immediate" stored

fruit and in addition develops more serious scald and decay. The importance of eliminating all avoidable delay cannot be too strongly emphasized.

The standard storage temperature for apples is 31 to 32 degrees Fahrenheit, and this has been found to be the best for long keeping of the fruit. Higher temperatures permit the ripening of the fruit to advance more rapidly than at 31 to 32 degrees, with the result that the fruit at the higher temperatures reached the end of its storage life much sooner. In addition, the lower temperature retards most effectively the developments of fungus decays and skin blemishes. For a short storage period higher temperatures may be used without serious trouble, especially with the better keeping varieties, but for long keeping 31 to 32 degrees will best maintain the color, quality and texture of the fruit. Apples should be withdrawn from storage while still firm, and in this condition can be held on the market in satisfactory shape for several days or weeks. If allowed to become excessively overripened in storage, however, they will break down very fast on withdrawal. Apples from 32 degrees will as a rule hold in better condition after withdrawal from storage than will comparable lots from higher temperatures. There are several other factors affecting the behavior of apples in storage, but those discussed have been found to be of greatest importance, and their proper control will solve a large percentage of our present serious storage difficulties.

Housewives \$10 Library

Recommended by the Department of Home Economics of Colorado Agricultural College.

Food and Household Management. Kinne & Cooley, authors. Macmillan & Co., publishers. New York. Price \$1.00.

Practical Cooking and Servicing. J. M. Hill, author. Doubleday, Page & Co., publishers. Garden City, N. Y. Price \$1.50.

Boston Cooking School Cook Book. F. M. Farmer, author. Little, Brown & Co., publishers. Boston, Mass. Price \$2.00.

Theory and Practice of Infant Feeding. H. D. Chapin, author. W. Woods & Co., publishers. New York. Price \$2.25.

Home Care of the Sick. A. E. Pope, author. American School of Home Economics, publisher. Chicago, Ill. Price \$1.00.

Shelter and Clothing. Kinne & Cooley, authors. Macmillan & Co., publishers. New York. Price \$1.00.

Healthful Farmhouse. H. Dodd, author. Whicomb & Barrows, publishers. Boston, Mass. Price 60 cents.

Laundry Work for Use in Home and Schools. J. L. Sheppard, author. Webb Publishing Co., publisher. St. Paul, Minn. Price 60 cents.

Get H-L-F Price on Your House

Thinking of building next spring or later on? Send for H-L-F House Pricer - find out just what materials will cost you. It's free.

Good House and Barn Plans

Send 10¢ for H-L-F Prize Plan Book of 100 homes and 4¢ for Barn Builder's Guide. (Helps lumber and millwork direct.)

HEWITT-LEA-FUNK CO.
Capital \$1,000,000
310 Crazy Bldg.
Seattle, Wash



BETTER FRUIT

HOOD RIVER, OREGON

Official Organ of The Northwest Fruit Growers' Association
A Monthly Illustrated Magazine Published in the
Interest of Modern Fruit Growing and Marketing
All Communications Should Be Addressed and Remittances
Made Payable to

Better Fruit Publishing Company

E. H. SHEPARD, Editor and Publisher
H. E. VAN DEMAN, Contributing Editor

STATE ASSOCIATE EDITORS

OREGON

C. I. Lewis, Horticulturist..... Corvallis
H. S. Jackson, Pathologist..... Corvallis
H. F. Wilson, Entomologist..... Corvallis

WASHINGTON

A. L. Melander, Entomologist..... Pullman
O. M. Morris, Horticulturist..... Pullman

COLORADO

C. P. Gillette, Director and Entomologist..... Fort Collins
E. R. House, Chief of Department of Civil and Irrigation
Engineering, State Agricultural College..... Fort Collins
E. P. Taylor, Horticulturist..... Grand Junction

IDAHO

W. H. Works, Horticulturist..... Moscow
W. S. Thurber, Horticulturist..... Lewiston

UTAH

Dr. E. D. Ball, Director and Entomologist..... Logan
Leon D. Butcher, Horticulturist..... Logan

MONTANA

O. B. Whipple, Horticulturist..... Bozeman

CALIFORNIA

C. W. Woodworth, Entomologist..... Berkeley
W. H. Yokel, Entomologist..... Watsonville

BRITISH COLUMBIA

R. M. Winslow, Provincial Horticulturist..... Victoria

SUBSCRIPTION PRICES

In the United States, \$1.00 per year in advance
Canada and foreign, including postage, \$1.50

ADVERTISING RATES ON APPLICATION

Entered as second-class matter December 27, 1906, at the
Postoffice at Hood River, Oregon, under Act
of Congress of March 3, 1879

APPLE PRICES—PRESENT AND FUTURE

Without question the amount of apples harvested, packed and shipped this year will be far below the estimates that have been quoted in nearly all publications over the United States. The markets so far have been crowded under unfavorable conditions and with fruit frequently arriving in off condition and overripe.

On account of the heavy shipments being made in October and November, there is every reason to assume that the quantity of apples to be sold will be heavily reduced by the first of December or the first of January at the latest. Then it will also be ascertained that the crop will be far lighter than original estimates. It may also be assumed that business conditions will improve and by that time people should begin to recover from the war scare and go about their business in a normal sort of way, for there is no reason why business should not be good in the United States in a general way and continue so.

It is usually true that when the crop is large prices in the beginning of the season are low and advance later in the season. With a light crop the reverse is usually true because so many growers hold in order to get a higher price later in the season, which crowds the end of the marketing season. Therefore, taking everything into consideration, it seems reasonable to suppose at the present writing that there is a fair chance for the apple market after the first crowd is over, to show an improved condition with a reasonable advance in prices.

APPLE PRICES OF 1914

Every year in the apple business is different,—an old saying but a true one. Conditions prevailing this year have never before been duplicated and many conditions have existed or have been created, each one sufficient in itself to materially affect prices. Taken altogether, they have created a very depressing effect on marketing prices. We are referring to these editorially in several paragraphs.

Effect of Apple Estimates on Prices. Again we feel compelled to speak very plainly and severely regarding apple estimates. Estimates are invariably put out in the blossoming time, when the trees are in full bloom and the crop looks very large in the eyes of the estimators. There is an occasional year when the crop overruns the blossom estimate, but it is seldom. There are too many things to happen after the blossoming time to reduce the crop and very few to happen to increase it.

This year the Northwest was estimated during the blossoming time at from 23,000 to 25,000 carloads. It is probably safe to say now that the Northwest apple crop will probably not exceed 12,000 carloads. A great many ordinary varieties and low grades are not being packed. In all probability not over 8,000 carloads (there may be considerably less) of the Northwestern crop will be shipped east. This is from one-half to one-third of the original estimate of the Northwestern crop.

The government has estimated that the crop of the United States will be 71,000,000 barrels. There is quite a general opinion prevailing, although it may not be universal, that the crop of the United States will be somewhere from 40,000,000 to 50,000,000 barrels. In addition to this, a great deal of guessing is being done as to how much of this will be packed up commercially and placed on the market. Various guesses run from 30,000,000 to 10,000,000 barrels, but the end of the season will tell the story, and if the latter figures are anywhere near correct it is apparent that there has not been sufficient occasion to justify the depression in prices on account of the quantity.

The Effect of Early Marketing on Prices.—The impression seemed to be created that apples are going to be very low in the winter and late in the season, and growers were informed that the best opportunity to secure good prices would be very early in the season. Many growers picked their apples early and shipped them just as quickly as possible, thinking this would be the only opportunity to secure good prices. I know this to be true, because personally several of my friends have informed me that they had been given this "tip" and I personally know that they picked their apples early, picking the Newtowns when they were absolutely green,—long before the proper maturity period for picking. Advices from Watsonville, California, show that the Watsonville shippers were

packing up their Newtowns just as fast as possible and shipping them. A large quantity of these were exported and reports from England are to the effect that, while the prices were fair, the immense shipments being consigned had lowered prices very materially.

While extensive early shipments have been made of Newtowns and while everyone knows that the Newtown is a very late-maturing apple and is not ordinarily ready for consumption until about the first of January, it is the last apple which should have been shipped, this early shipment was far more extensive on other varieties, and the result was that the early markets were crowded beyond reasonable consuming capacity on apples. They should have been held and shipped along in a regular and even way to supply the consuming trade.

The Effect of Shipments Without Ice.—The depression in reference to prices this year was so extensive that many growers and shippers have had no other idea in their head except to put the apples on the market at a minimum cost. Consequently many shippers forwarded apples of the late fall varieties without ice in order to save the ten cents per box icing charge. This has been done extensively. The effect on the market has been disastrous. As a specific illustration, a carload of Jonathans shipped to Boston, which arrived in fairly good condition as far as outward appearances went, sold at \$1.50 per box. But after being delivered to the retail dealers and opened up they were found to be so ripe that practically every retailer who had bought at \$1.50 returned them to the wholesaler. On account of their being overripe and soft, the wholesaler had to sell them out to peddlers, or in any other way he could get rid of them quickly, and sold the lot at \$1.00 per box. In other words, apples that sold at \$1.50 per box, on account of being overripe, due to the lack of icing, where the shipper endeavored to save ten cents per box, sold for \$1.00, cutting the price 33% per cent. The grower threw away 40 cents per box.

The Effect of Grading on Prices. Apple growers as a class of people have the same human natures as generally exist in mankind. There are many who are good, there are some who are indifferent and their there are some otherwise. It is to be regretted that there always has been, is and always will be, a number of apple growers, when not properly controlled with a very thorough inspection, disposed to act as follows: When the crop is light and prices are good, they crowd the grade because apples bring good money and they want to get all they can. When the crop is heavy and prices low, they crowd the grade on the ground that "anything is good enough" for the price they are getting. Such work can only be eliminated by a very thorough and rigid inspection.

The Effect of Business Conditions on Prices.—Everyone who knows anything about financial affairs and business

conditions is aware of the fact that ever since 1907 business conditions have been far from normal, due to many reasons with which most growers are familiar, and on account of limited space here will have to be omitted. With business rather under normal and financial conditions tight, it can be readily understood that the prices on fruit will be more or less affected.

The Effect of War on Prices.—On the first of August, when war was declared, not only Europe but the United States and other countries were also affected. Immediately an uncertainty sprang up both in business and financial matters. Consequently everybody became extremely conservative, purchasing was reduced and people in general were disposed to hang onto what money they had instead of spending it except for what was absolutely necessary, which naturally enough affected the fruit market and prices.

The Effect of Export Trade on the Apple Market.—On account of the war, Germany up to the present time has been eliminated completely as a purchaser of American apples. While it is true that so far exports have been some greater for corresponding weeks with last year, this to a great extent is due to the fact that apples matured early and shipments became heavier earlier in the season than last year. Without doubt the purchasing power of England and other European countries will be reduced, which naturally to a greater or less extent affects the apple prices. However this export trade should not continue to materially affect selling prices this year, for the reason that it is estimated that only approximately five per cent of American apples are exported to European countries.

The Oregon Horticultural Society will hold their annual meeting in Medford in December this year, having become convinced after having previously held their annual meetings in the City of Portland that it would be wise to hold them in different fruit sections of the state. There are a few progressive fruitgrowers who always attend regularly every state horticultural meeting no matter where it is held, but the majority of fruitgrowers are either not inclined to do this or feel the expense is too much of an item. They do not realize how valuable and instructive these horticultural meetings are or none of them would consider the expense too great to attend. The State of Washington has changed its place of meeting annually, holding it in different sections. The editor of "Better Fruit" has been invited to address the Washington Horticultural Society meeting each year for the past several years, and has attended and addressed their meetings at Spokane, Prosser, Clarkston, North Yakima and Walla Walla. Two meetings previous to these were held at Wenatchee and Everett. Each one of these meetings was attended by from five to seven hundred growers. The point is simply

Mitchell

Water
Systems Satisfy



A PLENTIFUL SUPPLY OF WATER on the farm is the best investment a farmer can make.

FROM A FINANCIAL STANDPOINT it means more healthy stock, big saving in your own time and labor, protection of your buildings against fire and increase in selling value of your property

FROM A FAMILY COMFORT STANDPOINT it means that the most desirable of city conveniences are placed within your reach, as a result of which the city loses much of its appeal to your boys and girls and they are far more contented to stay with the farm. Running water relieves your wife and daughters of a great deal of drudgery and makes their housekeeping a pleasant task, just as it decreases your work in the barn-yard, dairy house or garden.

MITCHELL WATER SYSTEM OWNERS, to the number of a thousand or more, will testify to the truth of these statements. From them you can learn that a water system is beyond question a thing that every farmer should install as soon as he can possibly do so. They will tell you of the proven reliability of the Mitchell Water System and of the stability and square dealing policy of the house which for six years has been selling and installing Mitchell Pneumatic Systems. They will tell you that the first cost of the Mitchell System is very reasonable and the second or operative cost comparatively nothing.

IF YOUR HOME IS WITHOUT WATER under pressure you should look into these things. Let us send you our new booklet *Through the Eye of a Camera*. From cover to cover this booklet is full of pictures of Northwestern homes supplied with water under pressure by the Mitchell System. Let us send this booklet together with our catalog showing the principle of operation and makeup of our system. We want you to have these books whether you are thinking of installing a water system or not. We will send them without obligation, free and post-paid. Isn't it worth your while to sign and send in the coupon attached to this ad.?

**Mitchell,
Lewis &
Staver Co.,**
Portland, Ore.,
Spokane and
Boise.

Gentlemen: BF
Please send me your free
book, "Through the Eye of the
Camera."

Name _____

P. O. _____

this, if the meeting is held in a fruit section of several hundred fruitgrowers it is a very easy matter for them to attend and they are put to practically no expense. It was generally understood at the Oregon State Horticultural Meeting in Portland last year that the meeting in 1915 would probably be held in Hood River. This will depend on the vote that will be taken in Medford and the desire of Hood River to have the meeting next year. The different sections that want the Horticultural Society meetings in their locality are supposed to put in a personal request and send representatives extend-

ing them the invitation for the Horticultural Society to meet in the principal city in their section.

National Apple Day and the Railroads.—Nearly all of the Northwestern railways showed their interest in the apple on National Apple Day by serving apples in the most attractive ways possible on all of their diners running in and out of the Northwest.

National Apple Day and Hotels.—Nearly all of the hotels in the Northwest observed Apple Day by serving elaborate apple menus.

The War News.—If you want to absolutely waste two or three hours a day without learning much of anything, take the war news each day and read it all. In previous wars the war news as given furnished reliable and full information about the progress of the war. In this present war news is censored so severely that from the war news given in the papers one seldom gets more than a few of the unimportant details, which are enlarged into four-column articles. The war correspondents of some of the greatest publications in the United States are cabling a one and a half column message which absolutely gives no further information than to state that the writer slept on a bed of straw on the floor of a garage or he only had a loaf of rye bread to eat in three days. Such news about the war is tommyrot and it is certainly a waste of time to read it. In fact most of the war news so far is about similar details and slight engagements which have no significance as to the actual conditions. About the only information that seems worth while is that either one side or the other is advancing, and just how valuable even this information is becomes a question, for the reason that the war report from one country states the enemy has retired and the war report from headquarters of the other country on the same day reports just exactly the opposite.

So, again, it seems well enough to say: Do not spend so much time reading the war news, but spend your time talking business and attending to your own business.

Perhaps in no section of the United States have the railroads and agricultural colleges shown more progressiveness than in the Northwest. Every year the various railroads of the Northwest in different states send out demonstration trains, accompanied by a staff of lecturers from the different agricultural colleges in Oregon, Washington and Idaho. These trains are equipped with exhibits of the most approved machinery for doing farm work to the best advantage in the most economical way. In addition to this, they are equipped with many exhibits of products in the horticultural department, and always very extensive exhibits from nature showing all the different diseases of fruit trees. These trains are frequently accompanied by thoroughbred cattle, hogs and chickens. Usually a staff of lecturers from the agricultural colleges accompany these trains with specialists in the departments of horticulture, dairying, poultry, cattle, grain, etc.

The Agricultural Colleges of Oregon, Washington and Idaho will hold short courses during the winter for the education of farmers in practically every department of farming. The Oregon Agricultural College has already announced their dates as follows: Farmers' Week, November 30th to December 5th; Forestry Short Course, November

2d to April 16th; Winter Short Course, January 4th to 30th. We regret we have not received the dates of the Washington Agricultural College and the Idaho Agricultural College winter short courses, but the same can be secured by residents of these states by writing the state college. These courses have proved so highly instructive and beneficial to every attendant that we have no hesitancy in saying to the farmers and fruitgrowers of the Northwest that everyone who can possibly spare the time and expense, which is very small, to take one of these winter courses, should avail themselves of the opportunity to do so this winter.

Economy in Harvesting Apples.—The editor of "Better Fruit" was one of the first growers of the Northwest to furnish a public statement of the actual cost of harvesting apples, showing in detail the cost of each individual expense, box, paper, packing, picking, grading, hauling, etc. This was followed by a great many growers publishing their expenses in various publications, and by comparison the growers have learned where any one part of the harvesting expense connected with their own business was too great. Consequently the growers during the last couple of years have been studying economy in the harvesting cost. It is safe to say that many growers are harvesting their apples this year at from five cents to twenty cents per box cheaper than formerly.

The Seventh National Apple Show at Spokane this year will devote a special part of the program to the discussion of the costs of harvesting, and without question the many experiences of the growers will be very valuable in assisting other growers to reduce this expense.

National Apple Day.—Mr. James Hanley of Illinois deserves great credit as being the originator, promoter and developer of a National Apple Day in the United States. The immense amount of publicity that is given to the apple on the National Apple Day without any question has a very stimulating influence in starting the consumption of apples. While some growers have different ideas as to the most advisable date for National Apple Day, it seems that there can be no question that the proper time for a National Apple Day was wisely selected, because October 20th is just in advance of the time when fall and winter apples begin to become plentiful and is therefore just the right time to start the people consuming apples.

The Seventh National Apple Show.—The Seventh National Apple Show at Spokane will be held from November 16th to 21st. Reports from headquarters indicate that this will be one of the best apple shows that has ever been pulled off, as the number of exhibitors who have already promised to exhibit is very large indeed. In addition to

this feature, there will be many special features like Wenatchee Day, Yakima Day, Spokane Day, Walla Walla Day, Hood River Day, etc. Perhaps equally as important is the general conferences of growers at which discussions will take place on all features connected with the orcharding industry.

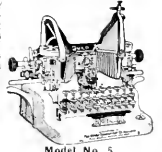
Manufacturers and Land Products Show.—The Manufacturers and Land Products Show is being held in Portland the last week in October and the first two weeks in November. Without question this is the greatest and most extensive show that has ever been pulled off in Portland, and it may be truthfully said that its educational value in showing the resources of the Northwest is almost incalculable. In the December issue of "Better Fruit" we intend to have a complete account of the Land Products Show in the form of a good story.

The People of the United States and the Present War.—About nine men out of ten, if you talk to them for an hour, will spend about 59 minutes talking about the war and the depressing effect on business. About the same number spend about one-quarter of their business time in reading the war news in detail. If the people of the United States will stop reading so much war news and stop talking so much war talk and talk business and attend to business, without question, in our opinion, the business conditions of this country will rapidly begin to improve.

The Apple Demonstration of the O.-W. R. & N. Co.—The O.-W. R. & N. deserves special credit from the apple growers and the business interests of the Northwest for their enterprise in going to the expense of employing an expert on cooking apples in various ways to demonstrate to the people,—the consumers of the Northwest,—the best methods of cooking apples in ways too numerous to mention.

The Typewriter Opportunity

Will you let me send you this Standard Visible Typewriter—the Famous Model No. 5 OLIVER with Inhibit Tabulator—on FREE TRIAL? No money in advance, no deposit—no C.O.D. If you find it to be the best typewriter you ever saw and want to keep it, I will make you a price that is lower than wholesale—lower than the lowest agents' prices, and you can let the typewriter pay for itself. I will take a little each month out of what it saves you, out of what it earns for you, just a few pennies a day is enough. With the Typewriter you will receive a Full Standard Equipment, everything that you need.



Model No. 5
LIFE GUARANTEE

Because there are no American Typewriters going to Europe just now, I can make you a wonderful price in advance. BE SURE AND SEND TODAY for free catalog and Full Details of this Greatest of Typewriter Offers. All information absolutely free.

General Manager
TYPEWRITERS DISTRIBUTING SYNDICATE
166-729 North Michigan Boulevard, Chicago, Illinois (232)

COLORADO GROWERS and others are using with great success
TAKANAP SOFT NAPHTHA SOAP
mixing with Arsenate of Lead to make even spread; positively won't damage; kills green and woolly aphid; prevents blotches and stung fruit. Ask your dealer or us for sample.
TAK-A-NAP COMPANY GERMANTOWN, PA.

The Corn Show

will be proof that the Pacific Northwest raises as fine corn as the "corn belt."

It will be held under the auspices of the

OREGON-WASHINGTON RAILROAD & NAVIGATION CO.

AT

Walla Walla, Washington November 25 to 28, 1914

10,000 representative ears, the cream of 1,000 acres, from the 1914 crop of this newest and best addition to Pacific Northwest products, will be on competitive exhibition.

Low Round Trip Fares

Tickets, Schedules and full information upon application to any agent of the

**O-W. R. & N. or to the
GENERAL PASSENGER AGENT
Portland, Oregon**

ASK FOR PREMIUM LIST



Surgery for Sick Trees

(Weekly News Letter, United States Department of Agriculture)

A CAVITY in a decayed tree is something like a cavity in a decayed tooth. If an unreliable tree surgeon who has been called in to save the tree only partially removes the diseased part of the wood, uses no antiseptic coatings in the cavity, and fills it up with cement, the tree is no more cured than is a person whose decayed tooth has not been properly filled by a dentist. The only difference is that after the tree cavity has been covered, if the work has not been properly done, the tree has no way of making its trouble known except by further decay.

Within the last decade there has been a great increase in demand for surgeons to repair decaying shade trees, but the possibilities of practicing fraud in this profession, like the instance just cited, have tempted so many unreliable people to dabble in the science that tree surgery has fallen somewhat into disrepute. The department realizes that commercial tree surgery should occupy a high place in the estimation of the public, and has recently issued a pamphlet entitled "Practical Tree Surgery," wherein suggestions are made for improvement along these lines.

As in all professions, there are reliable and unreliable men and firms competing for contracts in tree surgery. In recent years so many occasions have arisen when property owners felt the

necessity of calling in commercial tree surgeons to attend to their trees that there are now numerous firms, both honest and dishonest, engaged in the work. Usually tree surgery is practiced in connection with some nearly related line, but often it is taken up as a business of itself. When a blight such as the chestnut bark disease infects the trees of a district, the community, or individuals in it, will often spend considerable money to control ravages which may rob the whole district of its trees. An affection like the chestnut bark disease is contagious. It requires scientific knowledge of the disease to know whether an affected tree should be destroyed at once or is worth treating. It requires scientific training to understand the manner of growth of the fungi causing the disease and what treatment is best. Many individuals who have had faith in tree surgery have lost it through following the advice of unreliable tree surgeons who claimed to be able to diagnose a case, but whose main interest was to collect a good sum of money for their work.

Besides the careless filling of decayed cavities in trees, there are other practices of certain so-called "tree surgeons" that do the trees more harm than good. Many of these "surgeons," as well as the people who employ them, do not

realize the danger arising from fresh injuries to a tree. The tree owner should realize that prompt attendance to fresh injuries will largely do away with the need of tree surgery fifteen or twenty years hence. The tree surgeons must realize that if they make fresh injuries in the living bark, when treating decayed portions, they are laying the tree open to more dangers of infection that will result in further decay.

Just as a person is subject to infection through cuts and scratches, trees are rendered subject to infection by having their living bark torn. Notwithstanding this, many tree surgeons use pruning hooks and climbing spurs and cut fresh gashes in the tree. To break off small dead branches a workman may use a long pruning hook as though it were a club. In doing so the hook usually causes injury to the young bark nearby. Every new wound may furnish a new point of entrance for decay, even though the old dead branch may have been removed. The use of climbing spurs should be particularly avoided on trees in vicinities where there is a contagious infection. They simply render the treated tree all the more liable to catch the disease which is "in the air."

All properly equipped firms of commercial surgeons should have ladders that would reach forty or more feet into a tree. Ladders, ropes and rubber-soled shoes will allow a man to reach practically every part. Reliable estimates indicate that it takes somewhat longer (perhaps 25 per cent on an average) to do work on a tree when these are used instead of climbing spurs, and this is one reason why many firms who value remuneration more than reputation use the spurs.

The department is suggesting a plan that may help put commercial tree surgery on a better basis. Owners are urged to have a definite written contract with the tree surgeons they employ, and the following is suggested as a model for such contract: (1) No climbing spurs shall be used on any part of a tree. (2) The shoes worn by the workmen shall have soft rubber bottoms. (3) Ordinary commercial orange shellac shall be applied to cover the cut edges of sapwood and cambium (which is the soft formative tissue from which the new wood and bark originate) within five minutes after the final trimming cut is made. (4) All cut or shellacked surfaces shall be painted with commercial creosote, followed by thick coal tar. (5) All diseased, rotten, discolored, water-soaked or insect-eaten wood shall be removed in cavity work and the cavity inspected by the owner or his agent before it is filled. (6) Only a good grade of Portland cement and clean, sharp sand in no weaker mixture than 1 to 3 shall be used to fill cavities. (7) The contractor shall repair free of expense any defects that may appear in the work within one year.

If the owner prefers to have a cavity filled with asphalt or other material instead of cement, the contract can be altered accordingly. If it is desirable

For Scale, Insects and All Fungus Diseases that can be Controlled in the Dormant Season Use

Diamond Soluble **SPRA-SULPHUR**

Active Ingredients more than
58 Soluble Sulphur

This new form of Sulphur for Spraying
Dissolves Quickly in Cold Water

100 lbs. equals a 600 lb. Barrel of Lime-Sulphur Solution.

**COSTS LESS
AND DOES
BETTER WORK**

No Leaky Barrels—No Waste
Keeps indefinitely and you pay

NO FREIGHT ON WATER

Manufactured under the HITE patents
by the

OREGON ARSENICAL SPRAY CO.
Clackamas, Oregon



Get the Spray Booklet

It contains much information of value, covering the use of various sprays, general data as to spraying and prices on sprays.

The Spray Pump for The Pump Wise

GOULDS SPRAY PUMPS

Pumps that you buy to last for years — guaranteed by a manufacturer of fifty years of standing—to do their work year after year in an entirely satisfactory manner.

“How to Spray When to Spray Which Sprayer to Use”

A valuable free booklet, containing spray catalog, formulae and much information on sprays and spraying.

Our Complete Catalog

Lists Gould Pumps, pruning tools, sprays and tells about many things of interest to growers. Sent free. Ask for Catalog 204.

FERTILIZE NOW Put your fertilizer problems up to us. Diamond Quality Fertilizers are complete fertilizers of the highest grade. Bone meal and tankage form the base to which is added the necessary potash, nitrogen and phosphoric acid. We prepare a specific fertilizer for each purpose.

FREE FERTILIZER BOOKLET listing and giving complete analyses of various fertilizers, together with much good information on fertilizing, sent FREE. Ask for catalog 305.

Portland Seed Co.

PORTLAND, OREGON



to substitute some other preparation for shellac, this can be done. Similarly, under certain conditions, various other modifications may be made, although alterations in Nos. 1, 2, 5 and 7 should be made with caution. It may so happen that if all insect-eaten wood is removed, the tree may be dangerously weakened; under such conditions the diseased matter can be removed to solid wood and the cavity fumigated. Other suggestions along these lines may be found in the pamphlet issued by the department.

The department realizes that this science is comparatively new and that methods in the near future may be developed that will prove far superior to some now in common use. It therefore invites correspondence either

from individuals or firms concerning new methods of treatment, and is prepared to advise regarding any particular method so far as experimental results will permit. The co-operation of all who are interested is necessary for this work. All interested are urged to write for the new bulletin.

Fall Plowing

Fall plowing possesses many advantages in the greater part of the agricultural area of Washington.

(1) Fall plowed land left rough will absorb the winter's precipitation much more completely than a firm surface. This advantage is very important, except in some of the regions of heavy rainfall in Western Washington.

(2) The winter's rain and snow will settle the furrows, shutting out excessive air space and restoring capillary connection with the soil beneath. This puts the soil in better shape for rapid and extensive root development and greatly lessens the danger of the furrows drying out if much manure, stubble or other refuse has been plowed under. This settling of the furrows accomplished by nature is more effective and costs less than the firming of spring plowing done with compacting tools.

(3) The weathering of the loosened furrows improves the physical condition of heavy soils and aids in the liberation of latent plant food. The immediate yielding power of a given piece of land is not determined by the amount of plant food actually stored in the soil, but by the amount of plant food that can be made available to the immediate crop. One of the leading purposes of tillage is to encourage the development of available plant food in the soil.

(4) In the hilly sections land plowed on contour lines in the fall and left rough is less apt to wash and gully than the same soil left with a firm surface. This is becoming an important consideration in the grain belt in most cases.

(5) Fall plowing economizes time and labor by utilizing teams and equipment that would otherwise be idle, and relieves the usual congestion of spring work. This usually gives time for better soil preparation in the spring. In most cases it is probably better not to fall-plow land that is to be summer fallowed, but instead disc the surface. Discing in the fall will give the benefits of fall plowing in a minor degree. Summer fallow land is usually apt to become too compact by the spring after seeding if it is plowed the fall before summer fallowing. It is also usually best not to fall-plow a leachy soil in a wet climate.

In general, however, it is usually desirable to fall-plow for spring crops in most parts of Washington, except where the spring seeding is done on summer fallow. We would urge those who have not practiced fall plowing for spring crops to give the practice a small trial this fall. Land may be given a deeper plowing in fall than in spring with good results.—George Severance, Agriculturist, Washington State College.

New Soil Acidity Test

What is expected to prove a more positive test for soil acidity than the common litmus paper test, and one which, because of the cheap and harmless chemicals used in its operation, will be within the reach of the ordinary farmer has been devised by E. Truog, instructor in the department of soils, College of Agriculture of the University of Wisconsin.

The new test, it is believed, will be of especial benefit to county representatives and to field agents of the state soils laboratory, owing to the fact that it is simple to operate and can approxi-

mate quantitative results can be secured in from ten to fifteen minutes.

The new method consists of the addition to a sample of soil to be examined of zinc sulphide with small amounts of calcium chloride and water and boiling the mixture in a flask held over a small flame, preferably an alcohol lamp. Commercial lead acetate paper, which can be purchased at the drug store, when held in the fumes of the mixture for a few minutes, will turn from light brown to a shiny black, according to the degree of acidity present in the soil. The natural color of the lead acetate paper is white, hence the discoloration can be plainly seen and will more accurately gauge the acidity in a soil than will the litmus paper test, now in use.

The chemicals are perfectly safe for the layman to handle, and the complete apparatus, including flask and burner, ordinarily will not cost more than two dollars. The details of the apparatus have not been completed, but in a short time a more definite announcement will be forthcoming.

Owing to the prevalence of sour or acid soils in Wisconsin, and the desirability of adding lime as a corrective before raising legumes, any improvement over the present methods of testing for soil acidity will be welcomed. —Exchange.

Committees for Washington State Horticultural Society Meeting

The following is a list of the different committees appointed by Mr. Mike Horan, president of the Washington Horticultural Society for the state meeting which will be held in Wenatchee in January: Executive, M. Horan, Wenatchee; H. C. Sampson, Spokane; J. Howard Wright, North Yakima; P. H. Weyrauch, Walla Walla; R. Edward Trumble, Wenatchee. Transportation and markets, H. M. Gilbert, North Yakima; Clay Fruit, Tanasket; W. L. Sanders, Seattle; E. C. Burlingame, Walla Walla; W. H. Paulhamus, Sumner, Legislation, E. F. Benson, Tacoma; C. L. Whitney, Walla Walla; M. N. Richards, North Yakima; A. F. Crowell, Spokane; H. W. Otis, Peshastin. Membership, J. T. Compton, Wenatchee; W. A. Ritz, Walla Walla; F. E. DeSellen, North Yakima; C. L. Smith, Spokane; Ira D. Cardiff, Pullman. Better rates and shipping facilities, Charles Ulden, Spokane; W. P. Sawyer, Wapato; W. S. Offner, Walla Walla; C. N. Creadson, Brewster, and Conrad Rose, Wenatchee. The minutes of the last annual meeting, held in Walla Walla in December, 1913, are now ready for the press and will be distributed to members of the association in a short time.

Books on Horticulture

Published by the Pacific Horticultural Correspondence School, 206 Stock Exchange Building, Portland, Oregon. For sale at following prices, paper binding, postpaid on receipt of price. Mention "Better Fruit" when remitting.

Practical Control of Apple Diseases and Pests. A. L. Melander, B.S., M.S., Head Dept.

You Men Who Ship—Listen!

Do you know how much money you could save in one year if you would sell **your own** products through the **BLUE BOOK**, with the assistance of the **PRODUCE REPORTER CO.?**

We Will Help You Figure It Out

Write us frankly just what your situation is, and we will tell you exactly how we can help you—we will tell you what it will mean to you to be a member of this organization, and to have, right on your own desk, the latest **BLUE BOOK** with its mass of valuable information.

THE PRODUCE REPORTER CO.
"The Fruit and Produce Man's Best Friend"

NEW YORK
Fruit Trade Building

CHICAGO
Bell Telephone Building

MILTON NURSERY CO.

A. MILLER & SONS, Inc.—MILTON, OREGON

Pear, Cherry, Apple, Prune, Peach. Full line Shade & Ornamental Stock

Quality in Nursery Stock is a condition, not a theory: It is something we put into our trees, not say about them. Thirty-five years' experience enables us to

SALESMEN WANTED

A Catalog and Special Prices on Request

Apples Will Make You Independent

Many good orchards in Virginia and North Carolina are worth \$1000 an acre. You can buy good apple lands for as low as \$15 an acre. Secure a few acres and plant in apples. In a few years time you will be rich. The climate here is delightful and living conditions are ideal. Good schools and churches. Short winters. No blizzards or cyclones. Abundant rainfall—average 4 inches mostly in 1913. Write today for list of details and large farms that can be bought for \$10 an acre up on easy terms, also for our illustrated magazine, maps, etc. Prices of good lands are rapidly advancing. Write at once.

F. H. LaBaume, Agricultural and Industrial Agent, NORFOLK & WESTERN RAILWAY
 Room 228, N. & W. Railway Building, ROANOKE, VA.



Zoology, Washington State College. 11 pages. 50 cents.

Planting Fruit Trees. H. C. Atwell, ex-president Oregon State Horticultural Society. 22 pages. 25 cents.

Care and Cultivation of the Orchard. (a) W. K. Newell, president Oregon State Board of Horticulture. 14 pages. 20 cents. (b) J. B. Shepard, ex-vic president Oregon State Horticultural Society. 7 pages. 10 cents. Both for 25 cents.

Grading and Packing Fruits for the Market. A. P. Batchan, ex-president Oregon State Horticultural Society and vice president Northwest Fruit Exchange; John M. Carroll, for four years in charge of packing school National Apple Show. Includes packing of apples and prunes. 16 pages, 6 illustrations. 25 cents.

Handling and Pre-Cooling of Fruits for Transportation. A. V. Stubbenrauch, Field Investigations in Pomology, U. S. Department of Agriculture. 27 pages. 50 cents.

Irrigation Practice. W. L. Powers, M.S., professor Irrigation and Drainage, O. A. C. Many valuable tables of water measurement, amount needed, etc. 78 pages, 8 illustrations. 50 cts.

Water Rights. John H. Lewis, C.E., LL.B., State Engineer, president Board of Control of Water Rights, Salem, Oregon. 16 pages. 20c.

Apple Growing. W. H. Lawrence, A.B., M.S., Horticulturist and Plant Pathologist formerly with Washington State College, now Horticulturist Arizona Experiment Station. 31 pages. 50 cents.

Pear Growing. C. E. Whisler, president Oregon State Horticultural Society. 13 pages. 25c.

Pollination. E. J. Kraus, B.S., Research Assistant Washington State College, now Horticulturist Orchard Heating and Frost Prevention. R. S. Herrick, B.S., Field Horticulturist Colorado Agricultural College. 11 pages. 25 cents.

Small Fruits. Fred T. Burtlehaus, expert small fruit grower. 16 pages. 25 cents.

Loganberry Culture. Britt Aspinwall. With recipes by Professor C. I. Lewis for loganberry juice. 16 pages, 3 illustrations. 25 cents.

Prune Growing. H. S. Gile, Secretary Willamette Valley Prune Growers' Association. 6 pp. 10 cents.

Cherry Growing. J. R. Shepard, ex-vic president Oregon State Horticultural Society. 7 pages. 10 cents.

Directions for Orchard Spraying. H. S. Jackson, Plant Pathologist, and H. F. Wilson, Entomologist, O. A. C. Free with any order of 25 cents or more. 8 pages. 10 cents.

Walnut Growing. Ferd Groner, walnut grower. 9 pages. 15 cents.

Co-operation Among Fruit Growers. E. H. Shepard, Editor "Better Fruit." 8 pages. 10c.

All of the above booklets, in paper covers, will be sold for \$2.00, if ordered all at one time; but costing \$1.00 is ordered separately.

The following booklets are also in course of preparation by the authors. The exact price cannot be stated for each until received, but will be approximately 75 cents each and will contain from 50 to 100 pages each.

Orchard Insect Pests and Methods of Control. H. F. Wilson, M.S., Entomologist Oregon Agricultural College. About 100 pages, illustrated. 75 cents.

Fungus and Bacterial Diseases of Fruits and Their Treatment. H. S. Jackson, A.B., professor of Botany and Plant Pathology, Oregon Agricultural College.

Choosing an Orchard. C. I. Lewis, M.S.A., head Department of Horticulture, O. A. C.

Soil Fertility and Fertilizers. Herman V. Tartar, B.S., Chemist, O. A. C.

The complete set of above booklets will be sold for \$5.00. The new booklets to be mailed as soon as published.

Sub-Central Managers of the



F. E. SICKLES
Yakima Valley Fruit Growers'
Association



W. O. DOW
Wenatchee-North Central Fruit
Distributors



M. J. HIGLEY
Idaho-Oregon Fruit Growers'
Association



A. W. STONE
Apple Growers' Association of
Hood River, Oregon



ORRIS DORMAN
Spokane Fruit Growers'
Company

Colegiate Work in Horticulture

By R. J. Barnett, Pullman, Washington

DURING the past twenty-five years one of the most significant changes in higher education has been the rise in importance and popularity of the agricultural and engineering courses. The leaders in this development, especially along the agricultural lines, have been the so-called land-grant colleges. In the earlier part of the period, those established as separate institutions were much more effective than were the colleges of agriculture as a part of a state university. Thus Iowa, Michigan and Kansas, with their independent agricultural colleges started the work at an earlier date and developed it much more rapidly than did most of the states which incorporated the college of agriculture as a part of the state university. It is not possible here to trace the evolution of the various lines of instruction—how engineering has been subdivided, and how agriculture

is now agronomy, soils, animal husbandry, dairying, veterinary science, horticulture, and in some schools, poultrying even, is made the basis of work leading to the bachelor's degree.

It is natural that among the various courses in agriculture, the agronomy and animal husbandry should have been the earliest to develop and to be offered as the technical portion of a well-rounded liberal education built on university entrance requirements and demanding a great natural ability of those who successfully pursue them as do the arts or engineering courses. Horticulture as a separate course has been of later growth, but has, in several schools, become the most completely developed of any of the agricultural group. This complete and rapid development has naturally been found in those states where the growing of the horticultural crops is an industry of considerable magnitude: New York was early a leader, Michigan and Massachusetts followed quickly, and among the far western schools Oregon, Washington and California now give as complete work in this line as can be found elsewhere.

An interesting investigation would be that of tracing the evolution of these curriculums from that originally offered under the one name agriculture, and often taught wholly by one man; but a more valuable discussion would be one regarding what a present-day course of this type offers. Is the man who finishes such a course really educated? Does it fit the graduate for the practice of his profession? Does he make a better citizen of the state? Is he prepared to do original investigative work along his chosen line? The affirmative answer which can be given to each of these questions assures us of the value of the work offered,

and that the various states and the United States are getting adequate returns for the expenditure they make in supporting the schools giving such instruction.

The basic idea of agricultural education is that while remaining liberal and cultural it must also connect with the future vocation of the student—must actually assist in preparing him for his life work in additional ways aside from the mental training which the classical course of study offered. He is to be educated—but educated for a life of work, which, fortunately, is the common lot, instead of for a life of leisure. This idea has ever been foremost in framing the curriculums of the various courses of horticulture so that those of today are a well-balanced combination of studies selected from three general groups, but all tending toward and giving their assistance to preparing the student along the lines suggested by the preceding paragraph.

The first of these three groups may be called the cultural studies—those which serve to give a measure of polish and world knowledge to the student, and which contribute only indirectly to his mastery of technical knowledge. English language and literature perhaps belong here, and certainly are of practical as well as of cultural value. History and economics fall under this category as does also the study of modern language which is commonly required. Without a thorough knowledge of English the student can be proficient in neither the gathering nor the expressing of learning of any kind; without history and economics his equipment for civic leadership is incomplete; without a language other than English he finds the door to much valuable knowledge regarding his specially closed, and he cannot obtain a proper perspective and sympathy relative to foreign peoples.

The second group is the largest and in many ways the most important. It

ROSES

"Orenco Roses"

Our new illustrated Rose Catalogue is ready for mailing. It contains a complete list of the new and desirable varieties; also practical information on planting, pruning and general care of roses, and a convenient tabulated list of colors and classes alphabetically arranged. You will want to keep this splendid Rose Catalogue for a reference book. Send 10 cents in stamps now, and arrange to order early, if you want large, choice bushes that will bloom next summer.

We carry the most complete stock of ornamental trees, flowering shrubs, vines, etc., in the Northwest.

Oregon Nursery Company

ORENCO, OREGON

Dependable Salesmen Wanted

th Pacific Fruit Distributors



C. G. BARNES
Walla District Fruit
Distributors



F. H. MICHAELSON
Central Idaho-Washington Fruit
Growers' Association



S. N. KERR
Montana Fruit Distributors



C. A. MALBOEFF
Western Oregon Fruit
Distributors



K. H. DIXON
Advertising

might be termed the fundamental science group. It includes such sciences as chemistry, physics, botany, geology and zoology with numerous subdivisions of many of them. Under chemistry it is usual to require the inorganic, organic and agricultural branches—the latter relating largely to the chemistry of soils and fertilizers. The physics of the soil is studied as well as the physics of sound, light and electricity. Botany probably exceeds any other of this group in value for the horticulturist, and is subdivided into a polygenetic study of the plant kingdom, taxonomy, physiology, bacteriology, ecology and pathology. A geological study of the earth gives much information regarding the origin and composition of the rocks and soils forming its surface and the agencies—atmospheric, aqueous, igneous and organic—which supply the force to perform the work involved in geological changes. General zoology is interesting and valuable to the student of horticulture, but entomology claims his particular attention, special study being bestowed upon the life history and methods of control of those insects which are of economic importance—those which attack fruit plants.

Group three comprises the technical lines of study followed by the student and in horticulture fall into three more or less distinct divisions; pomology, or fruit growing; olericulture, or vegetable growing; floriculture, or flower and ornamental plant growing. Many

schools include landscape gardening in the horticultural courses and a few continue to place forestry there, but these seem likely to be raised to the importance of separate departments as rapidly as the number of students calling for them will justify the expense.

Pomology is the most thoroughly worked out of these divisions and will be used to illustrate the order and method of study followed. The propagation of plants is frequently the first of the technical studies and involves knowledge pertaining to the production of new individuals of known variety by seedage, separation and division, layerage, cullage or graftage, to use Professor Bailey's outline. Practical pomology is the name given that group of studies having to do with the production of the fruit, including choice and preparation of the site, laying out and planting the orchard, cultivation, spraying, pruning, thinning and harvesting. In the past this side of the work has been emphasized to the neglect of that which is known as commercial pomology or the marketing of the fruit grown. Commission house, f.o.b. sales and association methods of selling are now taught the student with considerable thoroughness. The third subdivision, systematic pomology, deals with the botany of the fruit plants and with the description, nomenclature, history and classification of the principal varieties of the various kinds of fruits.

Pomological plant breeding is usually a required study, as are also the literature of pomology, biographies of noted pomologists and a certain amount of research work on problems of special interest to the fruitgrower. The course for those desiring to specialize in vegetable or flower growing is quite similar in scope, but with these plants substituted for the fruits and the construction and management of green-houses added.

A graduate, having completed such a course, is ready for the battle of life—he has a large store of practical, everyday knowledge, and a foundation on which he may later build a beautiful structure in the way of a life rich in the appreciation of the beautiful in art and nature, of lasting benefit to his state and of work glorified by a love for it and for all growing things.

A Typical Curriculum

FRESHMAN YEAR

First Semester
Propagation of Plants,
Inorganic Chemistry,
English Composition,
Botany (Lower Plant Forms),
Geology.

Second Semester
Fruit Growing (Practical Pomology),
Organic Chemistry,
English Composition and Literature,
Botany (Flowering Plants).

SOPHOMORE YEAR

First Semester
Home Landscape Gardening,
Soils (Physics),
Agricultural Chemistry,
History,
Botany (Plant Physiology).

Second Semester
Vegetable Gardening,
Trigonometry and Surveying,
Economics,
Botany (Plant Pathology).

JUNIOR YEAR

First Semester
German or French,
Systematic Pomology,
Botany (Plant Pathology),
Elective.

Second Semester
German or French,
Commercial Pomology,
General Zoology,
Elective.

SENIOR YEAR

First Semester
German or French,
Advanced Pomology,
Entomology,
Elective.

Second Semester
German or French (Scientific),
Pomological Research,
Plant Breeding,
Elective.

Sunshine Lamp 300 Candle Power FREE

To Try In Your Own Home
Turns night into day. Gives better light than gas, electricity or ordinary lamps at one-tenth the cost. For Homes, Stores, Halls, Churches. A child can carry it. Makes its light from common gasoline. No wick. No chimney. Absolutely SAFE.

COSTS 1 CENT A NIGHT

We want one person in each locality to whom we can refer new customers. Take advantage of our SPECIAL FREE TRIAL OFFER. Write today. AGENTS WANTED.
SUNSHINE SAFETY LAMP CO.
241 Factory Bldg., Kansas City, Mo.



20 Reasons Why You Should Investigate the **SANDOW** Kerosene Stationary ENGINE



It runs on kerosene (coal oil), gasoline, distillate and alcohol without change in equipment—starts without cranking—runs in either direction—throttle governed, liquid, and tank-cooled—speed controlled while running—no cams—no valves—no gears—no sprockets—only three moving parts—light weight—easily portable—great power—starts easily at forty degrees below zero—completes its run without operator—thrusts low factory price—based on conventional portable engine—never back fire—30 years record—guaranteed—Sands, 12 1/2 to 18 horse power—send postal today for free catalog which tells how Sandow will be useful to you. No grease—no oil—no water—no maintenance a commodity by design—direct with factory. (602) Detroit Motor Car Supply Co., 228 Canton Ave., Detroit, Mich.

Mr. Fruit Grower

There are sprayers and sprayers, but ours is a sure **"Friend"**

It matters not whether it's a large power sprayer or small—large hand sprayer or small—fittings and accessories for your present sprayer—or a new motor-pump; tell your needs to the California Spray Chemical Company of Watsonville and they'll tell you the cost and serve you right.

"Friend" Mfg. Co.

Gasport, N. Y.



How They Do It in New York

Under date of August 25, 1914, Mr. Calvin J. Huson, Horticultural Commissioner of the State of New York, issued instructions regarding the handling of this year's apple crop as follows:

To facilitate the marketing of the present apple crop in accordance with the provisions of Chapter 418 of the Laws of 1914, I, Calvin J. Huson, as Commissioner of Agriculture of the State of New York, by virtue of the authority conferred in said chapter, hereby adopt and promulgate the following rules and regulations for guidance in the enforcement of said act:

(1) All apples packed in New York in closed packages must be marked as required by Chapter 418 of the Laws of 1914, except those that are packed and marked in accordance with the provisions and requirements of the U. S. Apple Grading Law (Public Document 252). If such apples so packed are classified they must be true to the classification.

(2) Apples in "open-headed barrels," baskets or boxes covered with burlap

or slats that can be readily removed and replaced are not closed packages within the meaning of the statute.

(3) Transportation companies are not liable under this act for handling apples not properly marked or packed.

(4) Where absence of high color in apples is due to sectional or seasonal conditions, such apples will not be deemed to lack "good color of the variety."

(5) Pastors may be used to mark barrels.

(6) All marks on barrels must be in block letters and figures not less than one-half inch, unless apples are packed under the U. S. Grading Law, in which case they should not be less than one inch.

(7) All closed packages of New York grown apples must be marked as required by section 2 of the law, which calls for the name and address of the packer, the grade or class of the pack, the name of variety and the minimum size of the fruit. If the apples are not hand picked or are fungous or scabby or wormy or diseased, the package should be so marked as to show the facts. If the apples are not classified the package should be marked "unclassified." If the variety is not known the package should be marked "unknown."

(8) Apples sold by the grower, "orchard or tree run," for repacking, resale or transportation are exempted under section 13, but when such apples are repacked for sale or removed from storage for such sale, they must be marked and graded as provided.

(9) Conspicuous violations of the law consist (a) in failure to mark packages as required by sections 1, 2 and 3; (b) where the contents of closed packages do not conform to the external markings.

Northwestern Apples in San Francisco

A few boxes of Northwestern apples exhibited at the California Apple Show in San Francisco by F. A. Frazier, in conjunction with the soluble sulphur spray exhibit of the Charles H. Lilly Company, attracted much attention. There were McIntosh Reds from Bitler Root, Montana, Rome Beauties from Weiser, Idaho, and Jonathans from Twin Falls and Weiser, also from the Yakima Valley and Hood River. Apples handed to interested visitors and friends by Mr. Frazier resulted in many inquiries as to where to buy such apples. The satisfaction expressed by many who had an opportunity of tasting these splendid apples suggests the great advertising value of tasting as well as seeing. Possibly we have missed much of the real advertising value of our apple shows by not having a provision whereby the best apples could be sampled. It is estimated that from 20,000 to 30,000 people visited this apple show each day of the eleven it was open. Few got out without seeing the Northwestern apples, and many were the expressions "These are the best apples in the show."

Apple Boxes

Growers who have not placed their orders are NOW liable to require RUSH SHIPMENTS. The product of a dozen mills is at the SERVICE OF OUR CUSTOMERS. WE CAN SHIP QUICK.

All Western Soft Pine

File us at once, and let us get your order on wire, so you can avoid the rush shipment when you know just what you will need.

Western Pine Box Sales Co.

614-615 Empire State Building
SPOKANE, WASH.

Mention "Better Fruit"



ARE YOU GETTING LOTS OF EGGS?

Or, do your hens lay only when eggs are cheap?

Get the eggs this winter by starting to feed **CONKEY'S POULTRY TONIC** now. It doesn't force the hens but makes them want to lay because they are well nourished and strong.

Conkey's Poultry Tonic is an all round tonic that helps nature do its work—for this reason it is fine for every bird you own—young chicks, growing stock, molting fowls or laying hens.

Tell your Dealer you must have Conkey's—and write us if he cannot supply you. Remember, Money back if a Conkey Remedy or Tonic ever fails to satisfy you.

GET THIS BOOK—and learn to laugh at poultry ailments. It will make you an expert. Send for a copy and we will enclose our Cash Value Coupon—something new.

THE G. E. CONKEY COMPANY
112 Conkey Building, Cleveland, Ohio

You like to go Hunting Fishing Trapping

Then surely you will enjoy the **National Sportsman Magazine**, with its 160 richly illustrated pages, full of interesting and valuable information about guns, fishing tackle, trap outfits—the best place to go for fish and game, and a thousand and one valuable "How to" hints for sportsmen. The **National Sportsman** is just like a big campfire in the woods where thousands of good fellows gather once a month and spin stirring yarns about their experiences with rod, dog, rifle and gun. All this for 15c a copy or \$1.00 for a whole year.

SPECIAL OFFER

Mail us 25c in stamps or coin for a 3 months' trial subscription to the **National Sportsman** and we will send you absolutely **FREE OF CHARGE** one of our handsome **Oremio Gold Watch** Pouches here shown, with seal grain leather strap and gold-plated buckle.

NATIONAL SPORTSMAN
90 FEDERAL ST., BOSTON, MASS.



WELCH & WELCH 3-5 W. So. Water Street CHICAGO

SPECIALIZE ON CAR LOTS

Apples, Peaches, Pears

Get in touch with the
Livest House in Chicago
Write Today

Members } National League Commission Merchants
Western Fruit Jobbers and
International Apple Shippers Association

Fruits As Food and Medicine

By Dr. H. Benjafield, Moonah, Hobart, Tasmania

FRUIT such as the apple, pear, orange, etc., is so essential to our well being that it is a great mistake to look upon it as a luxury to be used only on special occasions. It is of all foods one of the most essential. It is not only a food itself, but it assists in the digestion and assimilation of all other foods. I will try to explain some of its actions as it goes through the body.

As food cannot be digested or assimilated unless it is well broken into fine particles, the teeth have been provided by nature for the purpose, and the health of the whole body very largely depends on the efficiency of this grinding mill. And it has lately been proved that fruit eating provides the teeth with food and prevents their decay; so that in a prize essay of the Royal College of Surgeons, England, Professor Pick-erill, who is the professor of dentistry in the University of Otago, writes under date 1912 the results of experiments extending over several years, all of which go to prove in his own words that "children's teeth, in whom caries was commencing, not only have no more carious cavities, but those that were present have passed into a state of arrested caries, and the surface becomes quite hard." And this he proves resulted from giving the children fruit, say, an apple or an orange (the apple proved best) after each meal. He found that the acid in the fruit increased the flow of saliva, and the phosphate of lime, when liquefied in this acid, passed into the child's tooth, and hardened the enamel and prevented caries. He says: "It is of the very highest importance that particular care and attention should be paid to the preservation of the first teeth, as decay in these produces defects in the enamel of the permanent teeth. The enamel is first soft and hardens after cutting by the passing of lime salts out of the saliva into them, and enamel of the highest resistance should be cultivated in children." How, then, are we to produce good teeth in our children and protect them during life? He has published a large book on "Dental Caries," from which I will give a few extracts: "In saliva is provided a perfect mouth

wash; all its constituents are of value and importance in protecting the teeth, and natural organic acids (such as are found in fruit) are the stimulants which excite the greatest amount of these protective substances." The material most destructive to teeth is fine flour in a cooked state. In an experiment white bread in one week made the enamel of a tooth quite soft, but when, after eating such bread, it was followed by eating an apple the mouth was quite clean. Thus starches and sugars should on no account be eaten alone, but should in all cases be eaten with, or should be followed by, fruit,

as the juice of the fruit gets over the teeth and between them, preventing fermentation of these starches and the formation of lactic acid, which is the great cause of dental decay.

Chocolates produced a large amount of this destructive acid, but when the chocolate was followed by an apple the mouth was neutral." "Fresh fruit and salads should be used as much as possible at every meal and all meals should end with some acid food."

Saliva is a very complicated fluid, which flows into the mouth in ever-varying quantities, and has much more to do with our comfort and health than is generally supposed. Starch, as found in bread, is our principal food, and the saliva digests it by converting it into sugar before it passes into the stomach.

The Biggest Apple Dealers in California

WRITE OR WIRE US FOR DETAILED
MARKET INFORMATION

A. LEVY & J. ZENTNER CO.

Davis Street (from Washington to Oregon Sts.) San Francisco, California

**SHIPPERS
OF
APPLES
PEACHES
PEARS
PLUMS
CHERRIES
ETC.**

When wishing to use the Cleveland market, or desiring reliable information concerning same, write or wire us. We are among the largest receivers here.

SPECIAL FEATURES:

Absolute responsibility, reliable and prompt service. No house in any market excels us in making prompt remittances when goods are sold. Liberal and consistent advances made on consignments. Ample cold and dry storage facilities.

Myers, Weil & Co.
CLEVELAND, OHIO

Bean Power Sprayers



While Bean Power Sprayers are very reasonable in price — our idea has not been to build a "cheap" line—but rather to put out a line of outfits as complete and perfect as possible.

We've not slighted them in any particular—but wherever quality could be built in, we've put it in. The result is that the Bean line is recognized as the standard line wherever sprayers are used.

Here Are Some of the Distinctive Bean Features

Bean Patented Pressure Regulator, Rustless Ball Valves, Porcelain-lined Cylinders, Bean Refiller, Bean One-Piece Steel "I" Beam Frame. There are many others. If you're interested in sprayers

Send for Our Catalog 28-A

It illustrates and describes our entire line of Hand and Power Outfits, Pump Accessories, etc. A post card will bring it.

Bean Spray Pump Co.

213 W. Julian St., San Jose, Cal.

Also Berea, Ohio

Deliveries made from centrally located Northwest points



Ground Phosphate Rock

The Natural Plant Food and Permanent Soil Builder

1,000 pounds per acre once in each four years will cost about \$1.00 per acre per year. At Pennsylvania State College \$1.05 invested in Rock Phosphate gave increased yields of \$5.85—over 500%. At Maryland Experiment Station \$1.90's gave \$22.11—over 1,000%. At Ohio Station each dollar paid for itself and gave \$6.68 profit. At Illinois Station \$2.50 gave the same return as \$250 invested in land.

Each ton contains 280 pounds of phosphorus, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

United States Phosphate Co.

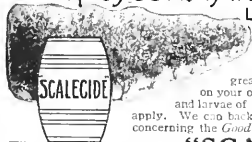
228 West Broadway, SALT LAKE CITY, UTAH

Write for Literature

"Perfection of Fineness in Grinding," our motto

One Barrel of "Scalecide"

Will Spray as many Trees as Three Barrels of Lime Sulfur



"Scalecide" has greater invigorating effect on your orchard—kills more scale, eggs and larvae of insects with half the labor to apply. We can back up this statement with facts concerning the *Good Results from Using*

"SCALECID"

Send for our illustrated booklet—"Proof of The Building". Tells how "Scalecide" will positively destroy San Jose and Citrus Maple Scale, Pear Psylla, Leaf Roller, etc., without injury to the trees. Write today for this FREE book and also our booklet—"Spraying Single!"

Our Service Department can furnish everything you need for the orchard at prices which save you money. Tell us your needs. We are World Distributors for VRELAND'S "ELECTRO" SPRAY CHEMICALS and Arsenate of Lead Powder (33 per cent), which, used wet or dry, has no equal in strength or texture. Avoid imitations. B. G. PRATT CO., Mfg. Chemists Dept. D 50 Church Street, New York City

But the saliva also keeps our mouth moist and allows us to swallow dry food, and the more plentifully this is mixed with the food the more easily can the stomach deal with it. But Professor Pickerill has shown that when an apple is eaten the quantity is very much increased and the power for digestion quadrupled. Hence eat slowly, so as to mix into the food plenty of saliva, and eat apple with bread and butter.

Dr. Abramowski, in his book on "Eating for Health," describes how, when his digestion and health were so bad that he had abandoned all hope, he decided to try a raw fruit diet, with a few cooked vegetables. He took five pounds of fruit a day, with some vegetables, but no meat or starch. He says: "I was quite free from indigestion and had not an ache or pain. I have now only a desire for natural food. My power to work and pleasure in life is growing, and I can perform tasks quite impossible a few years ago. My teeth have got clear of all the accumulated tartar and have stopped decaying. I have lost none since I started the fruit diet, nor have I had a toothache. I claim that fruit diet has made me young again." Most people are satisfied with a diet in which fruit occupies quite a minor part, such as the society dinner, followed by dessert or apple pie after roast duck, or the inevitable apple sauce with our Christmas goose, but in all this there is sound common sense. Ripe fruit after dinner cleans the mouth, saves the teeth, and in the stomach assists digestion. Apple sauce with fat goose is scientifically correct, as the acid of the apple assists in the digestion of the fat. When I feel indigestion after dinner, I eat two or three pears or apples and get more relief from it than from any other remedy. I make a point of eating fresh fruit after dinner, and I think my gouty pains are better when I eat plenty of fruit, which is quite in keeping with up-to-date medicine.

The digested food passes directly into the blood, and every part of the system is fed and influenced by it, and the good effects of fruit here are being more and more understood. When fruit is withheld for some months, as it used to be on ships at sea, the blood broke up and the body became putrid, even to rotting away. Then, as soon as fruit was given, the blood grew natural and health returned, and, as nearly all our diseases arise from some impurity of the blood, there can be no doubt but fruit exercises an influence on it. Rheumatism and gout are due to uric acid. Modern medicine is satisfied that fruit juice in the blood assists in clearing out this poison. A man had purpura and was bleeding from every pore. I sent him a box of pears and in a few weeks he was well. When the Japanese coal heaver is used up by hard work, he eats an apple with a handful of rice and goes on again, stimulated and strengthened. I am quite sure that eating fruit greatly assists nature in the manufacture of good, healthy blood, such as im-

parts to the face a rollicking, robust appearance.

Fruit contains lime in such a soluble condition that the bones easily take it up and are fed by it. Professor Pick-erill shows how in this form it penetrates and feeds the enamel of the teeth, which is the hardest part of all our bones. I live in a large fruit-growing district, where the children eat much fruit, and I have never seen any rick-ets or other indication of soft bones since I came here.

If a horse is fed on, say, fine oatmeal or fine flour alone it will soon die of constipation, but if the straw on which the grain grew is cut into chaff and fed with the flour or meal its digestion and bowels will act perfectly. Modern habits of feeding us are wrong in this way; the bowels of the horse need the chaff to induce them to keep up their action, and our bowels require some such stimulant. Dr. Abramowski tells us that when he lived on fruit he had "two or three easy motions a day." And I have every reason for gratitude to fruit, for I have not taken a dose of aperient medicine for forty years, but I get some trouble if I do not get two or three pears or apples a day, or some other fruit, but pears are the most lax-ative. Professor McAlpine has shown that the best part of an apple or pear is the skin, and if washed or carefully wiped it certainly is better for consti-pation to eat skin and all. The pulp of roast apple is far better for an in-fant than castor oil, and if the public spent on fruit half what it now spends on nauseous petroleum, many faces would wear a more cheerful aspect.

As a medical officer of health over a large fruit-growing district in Tas-mania, I have for years been able to show a much lower mortality than in districts where fruit is not grown; in-deed, our mortality in Glenorchy of four in 1911, five in 1912 and six in 1913 in the thousand is, so far as I have heard, the lowest recorded.

Dried Fruits Reasonable in Price

Numerous studies made of nutritive values by the Office of Experiment Sta-tions have shown that dried fruits may be termed an economical article of diet. Fruit products in general contain little protein, but as sources of energy, de-rived almost entirely from their sugar, dried fruits are decidedly cheaper than meats and compare favorably with dairy products. They are, however, more expensive than cereals and the starchy vegetables such as dried beans and potatoes. Under no circumstances should fresh and dried fruits be thought a luxury, since they supply the needed nutritive material as an integral part of the diet, besides adding to the attrac-tiveness of the daily fare. If they are to be eaten raw, brands made and mar-keted in a cleanly way should be ob-tained. The amount of dried fruit pro-duced in the United States increased 575 per cent between 1899 and 1909.



Are NOW manufactured in California and with full knowledge of con-ditions necessary for best SUCCESS in Western Orchards. Distribut-ing warehouses in principal fruit growing sections of Northwest, for—

Lime Sulphur Solution **Arsenate of Lead, Paste**
Bordeaux Mixture, Paste **Arsenate of Lead, Powder**
B. T. S. Compound **Atomic Sulphur**
"Universal" Oil Emulsions, Soluble Oil Soaps, Etc.

Visit the ORCHARD BRAND Booth at National Apple Show in Spokane and see these products.

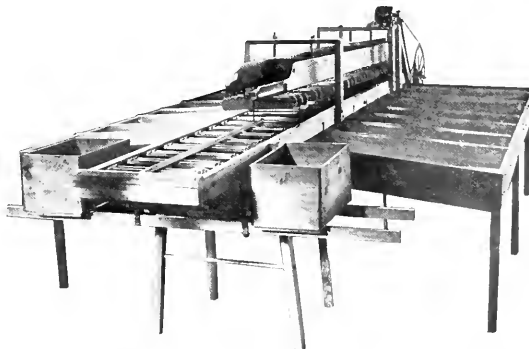
Bulletin No. 3—DORMANT SPRAYING OF DECIDUOUS FRUIT TREES, just published, sent free on application.

General Chemical Company of California

Royal Insurance Building

SAN FRANCISCO

The Pride of Oregon Apple Sizer



Is the most simple and economical sizer on the market today. Experience has demon-strated that sizing to eight divisions is more practical than a greater or less number of divisions and enables packers to pack the maximum quantity per day, thereby reducing the cost.

The sizing is done ABSOLUTELY WITHOUT BRUISING.

The sizer is strongly and simply constructed, with no complicated machinery to get out of order, and will last a lifetime.

The machines will make two grades at the same time and divide each into eight sizes.

The construction is so simple that the machine can be operated with $\frac{1}{2}$ -horsepower motor—either electricity, gasoline engine, or by hand.

For particulars address

The Pride of Oregon Apple Sizer

J. R. NUNAMAKER & CO.

HOOD RIVER, OREGON



You Can Build Your Own Home Easily, Quickly, Economically

Not a portable, but a permanent, substantial and attractive home. We furnish the lumber, trim, windows, doors, cut and numbered to fit our plans. Follow the plans with your hammer.

No building experience necessary. All hardware, nails, paint, stain, plaster or interior wall-board furnished with plans.

Your own ideas carried out, satisfaction guaranteed. Illustrated Catalogue FREE. Write today.

Ready Built House Company
978 Broadway, PORTLAND, ORE.



WRITE ME!


Get my new, low, factory prices on the Famous Galloway Engines and big, illustrated FREE mailing. My engines are standard, high quality engines. Made in sizes from 1 3/4 to 16 H. P. Over \$4000 in size today. All sold on 30 days FREE trial, backed by five year guarantee and \$25,000 bond. Money back if not satisfied. Investigate! Quite parting excellent prices for inferior engines. Save middlemen's profits. Do your own dealer.

BUY DIRECT FROM THE MANUFACTURER
and Save \$50 to \$300 on Gasoline Engines

That comes about as near keeping your money at home as any way you can think of. Write me before you buy.

FREE I will help you select and install the best style and size engine you need for your work without cost to you. Let me send you my New 1914 Special Offer. Just write for my catalog and new low prices today.

Address: Wm. Galloway, Pres't.
WM. GALLOWAY CO.
1056 Galloway station, WATERLOO, IOWA



Main 8582 - A 2695

Vacuum Cleaners
DUNTLEY AND OTHERS

Electric and hand power. The only Exclusive Vacuum Cleaner Store in the state. If we haven't what you want, we will get it for you. All machines fully guaranteed. Other machines taken in exchange.

W. L. BENTLEY & CO.
No. 473 1/2 Washington St.
Portland, Oregon

California produces more than four-fifths of the yearly output. According to a very rough estimate, each person in this country consumes on an average five or six pounds of dried fruit a year. The value of the product rose from between four and five millions to over twenty-one millions in ten years. The average wholesale price, however, has not advanced with the increased demand; on the contrary, it has dropped from about 5 1/2 cents to about 4 1/2 cents per pound. Dried fruits are especially useful when the supply of fresh fruits is limited or where storage space for fresh fruits is lacking. Besides being used alone, they may be added to cakes, puddings, confectionery and other similar dishes. They afford a nutritious and economical way of securing a variety of diet which is often overlooked by the housewife.—Office of Information, U. S. Department of Agriculture.

Canned Fruits and Vegetables in Winter Diet

The balanced ration of many Americans today is made up something as follows: Bread, butter, eggs, meat, fish and potatoes, and patent medicine laxatives.

Many Americans customarily suffer from one of the following complaints: Indigestion, constipation, rheumatism. A simple change of the daily menu might go a long way to remedy these ailments, according to the Bureau of Plant Industry's specialist in charge of canning club work. This specialist recommends a change to a menu more in keeping with nature's plans something as follows: Bread, butter, meat, fish and eggs, and fruit, vegetables and greens.

He recommends that every family provide a diet of fruit and vegetables for every day in the year. This would do much to eliminate the need for patent medicine laxatives that figure so prominently in many Americans' bills of fare. If every home kept on hand enough canned products so that there might be a can of fruits, a can of greens and a can of vegetables for every day during the winter, there would be little need for the laxatives now so regularly purchased from the corner drug store. There would also be great economy in the substitution of an inexpensive food for more expensive ones.

More home canning, done at the proper season, would enable the average family always to have the proper quantity of canned products, and would save an astonishing amount of food that goes to waste every year. It is estimated that over 50 per cent of all the vegetables, greens, fruits and berries that grow in this country go to waste and are actually lost to those who need them. This is simply because some housewives have not learned to care for these surplus products efficiently and to make them available for the winter months by canning.

USE
MUSTONIA
FOR BLIGHT, RUST,
SCALE, SCAB, CODLIN
MOTH AND ALL
APHIS

BACTERIA

To the number of about 1200 species stand ready to attack your orchards; some of them may be busy already, working day and night and costing you hundreds of dollars. **MUSTONIA** will destroy them and prevent them coming again.

PLANT LICE


Especially on apple trees, aphids are very destructive. **MUSTONIA** will remove the apple aphids, rosy apple aphids, European grain aphids and the clover aphids, and keep your trees clean and free from rust, scale and scab.

BLIGHT

Birds, bees and insects carry blight from tree to tree. Prevent its ravages with **MUSTONIA**.

Spray with **MUSTONIA** three to four times a year and your trees will be healthy and vigorous. Get your order in early for spring delivery. Write for literature on spraying and tree planting.

E. LEECH, F. R. H. S.
Manufacturer
STEVENSVILLE, MONTANA



Spray

The Morrill & Morley Way

The **ECLIPSE Spray Pump** has been in service 20 years. Durable, efficient, economical. The U. S. Department of Agriculture uses it, and you can make it profitable in your orchard, vineyard or potato field. Cost less than 20¢ per acre.

Morrill & Morley
Mfg. Co., Box 12,
Boston Harbor, Mich.

Eclipse Spray Pump

ACID BLAST ETCHED PLATES

We have installed the only etching machines in the State of Oregon

BLAST ETCHED plates have a Printing Quality which has never before been obtainable with process engraved plates

THEY COST THE SAME AS THE OTHER KIND

OUR DIRECT PROCESS COLOR PLATES ARE EQUAL TO ANY MADE

DRAWINGS
for every purpose in
PEN and INK or WASH

HICKS-CHATTEN ENGRAVING CO.
INCORPORATED
607 BLAKE-M'FALL BUILDING
Fourth and Ankeny Sts. PORTLAND, ORE.



A Telephone Saves Time and Money

It's easy! With a first-class telephone line from home to town you and your neighbors can talk direct to crop buyers every day without driving over those long miles. You can watch the market for top prices—ask the railroad station if your freight has come—order supplies from the store—find out what's doing at the stock yards—set a time with the grist mill for grinding your grain—get the doctor *quick* when you need him. Besides all this, you can talk business or pleasure without leaving your own doors.

Western Electric Rural Telephones

are standard for use on the farm. Thousands are in daily use by progressive farmers everywhere. If you are still without telephone service, write us for information on how it can be secured. Write the nearest house below, and mention this paper.

WESTERN ELECTRIC COMPANY
Manufacturers of the 8,000,000 "Bell" Telephones

PACIFIC HOUSES:

San Francisco	Oakland	Los Angeles
Seattle	Portland	Salt Lake City

EQUIPMENT FOR EVERY ELECTRICAL NEED

The Present Status of the Different Varieties of Walnuts

By Dr. W. W. Fitzgerald, Stockton, California

THIS subject is about as difficult as the present status of the different makes of automobiles. Whatever make of machine a man drives he is apt to think that is the best, so with the man who grows a particular variety of walnut, he is apt to think that variety is the best. In speaking of the present status of the different varieties of walnuts we have to consider several things

as soil, climate and moisture conditions. It is true that we can regulate moisture conditions, but soils and climate we cannot change; so in considering the different varieties we must keep in mind where they are to be grown and character of the soil they are to be grown on. Some of our best varieties that do well on heavy soil with plenty of moisture will not prove as good a variety on lighter soil and poor moisture conditions; likewise, some varieties that produce good white-meated nuts in a cooler climate will produce inferior nuts in a very hot climate.

The first thing to be considered in judging the different varieties of walnuts is their producing qualities. I do not mean by this a large producer of an inferior nut, but a heavy bearer of a good quality nut. A tree that produces only a few very fancy nuts is not to be considered commercially. A fancy variety may bring a few cents per pound more, and may make up what it would lack in the number of pounds it would produce providing it was not too shy a bearer. A fancy variety producing only from 50 to 100 pounds on full-bearing trees at 25 cents per pound would not compare favorably with a variety which produces 200 to 300 pounds at 12 to 15 cents per pound. The relation between the quality of

nuts and the quantity of nuts produced should be carefully considered in choosing a variety for planting. One should not judge variety by the fine appearance of a picked sample of nuts without considering the quantity in which they are produced. The best variety is one that will produce annually a large crop of the most desirable

The J. B. Holt Fruit Picking Sack

(Patented)

I invented this picking sack and have used it in my orchard, handling from five to ten thousand boxes, during the last four years.

I am convinced it is the most practical and convenient picking receptacle on the market. It does not bruise the apples. It is not in the way of the picker, like a bucket. The picker can reach the highest limbs without inconvenience. It empties into the bucket slowly and carefully, without bruising. It has wide shoulder straps like suspenders, and does not have to be hung on the limb with a hook.

You can buy these of
OSCAR HILL, North Yakima, Washington.
C. H. ROSS, Wenatchee, Washington.
S. B. SIMONTON (address Hood River, Oregon),
Hood River, Mosier, White Salmon and Underwood.

New agents' names will appear in September issue of "Better Fruit."

Price 10c. Pullman, Washington, \$1.75.
Special prices quoted on large quantities.
For further particulars and illustrated descriptive literature, write

J. B. HOLT
PULLMAN, WASHINGTON

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

Protect Your Trees

DON'T take chances with your young trees. One rabbit will kill many in a single night. Mice and cut worms will damage and destroy them if you don't protect them. Get dollars' worth of protection at a fraction of a cent cost by using

Hawkeye Tree Protectors

Absolute protection against gnawers and borers. Prevent trees from becoming skinned and bruised by cultivator or lawn mower. Made of elm veneer, chemically treated. Easily put on and will last until tree is beyond needing protection. Don't wait until some of your trees are killed—order Hawkeye Protectors now. Regular size 10 inches wide, 20 inches high. Price in lots of 100—1 cent apiece, in lots of 1000—1 cent apiece. Special sizes made to order. Write for circular and samples.

We make Fruit Baskets—get our prices.
Burlington Basket Company
122 Main St., Burlington, Iowa



WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

Cheaper Than Horse Flesh

CATERPILLAR
Reg. U.S. Pat. Off.

HERE'S a tractor that's cheaper than horses, even for your smaller ranch or orchard—the **BABY CATERPILLAR**. It costs less to feed. It works 24 hours a day if you want it to. There are over 150 of them making good. It's because they're right mechanically. Materials and workmanship are the same as in the other **CATERPILLARS**—steel cut gears in dust proof cases, a powerful motor. Our reputation is behind the **BABY**. It stands up under any amount of hard use.

58 inches high without canopy—it works close under the trees in the orchard. It turns short so you can cultivate right from one row into the next. There are all sorts of uses you can put it to—hauling, clearing land, road grading or stationary work. The long, wide track can't slip or mire or pack the soil. You can use the **BABY** for plowing

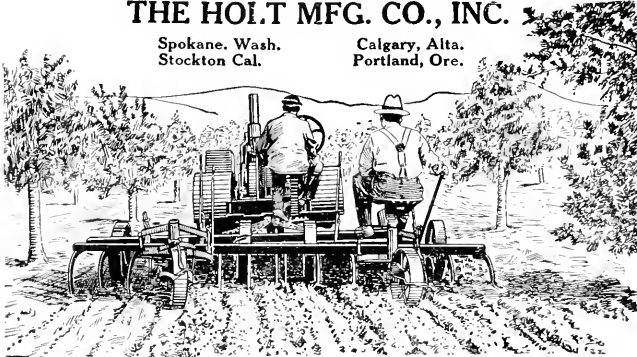
even after the rains start.

You have time still to do a lot of fall plowing that will pay in better crops than if you wait till springs. Now is a good time to order that **CATERPILLAR** you have been thinking about. Why not get Catalog BE 136 and our special bulletin about the **BABY**? We prove what we say.

THE HOLT MFG. CO., INC.

Spokane, Wash.
Stockton Cal.

Calgary, Alta.
Portland, Ore.



Ridley, Houlding & Co.

COVENT GARDEN, LONDON

Points to remember when consigning
apples to the London Market

- 1.—We Specialize in Apples
- 2.—All Consignments Receive our
Personal Attention
- 3.—The Fruit is Sold by Private
Treaty on its Merits

CABLE ADDRESS: BOTANIZING, LONDON

type of nuts. Unfortunately we do not have all the good qualities in any one variety or we would not be discussing this subject today. We have to choose a heavy producer with a good quality of nut. One important point is that young trees often produce larger nuts than they do after the tree becomes older, so one should judge nuts from a tree that has been bearing for a few years. We should also consider the age in which the tree comes into bearing, as great differences exist in different varieties as to what age they begin bearing. Some varieties begin to produce nuts even in the nursery and give a commercial crop within three years from planting in the orchard, while other varieties are several years later in coming into bearing.

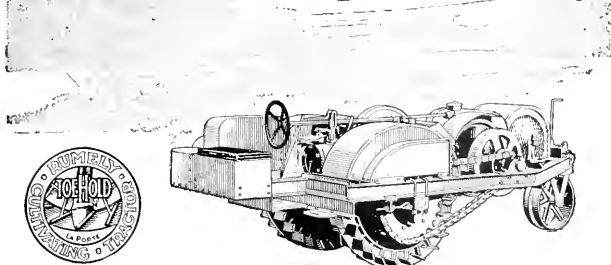
The next important consideration is that of the size and weight of the nuts. The size of commercial number one grade walnuts are those which will not pass through a one-inch square opening, while those above one and three-sixteenths inches, which are generally considered as budded nuts, bring considerable more per pound and the demand is growing for this quality of nut. I have already had a number of inquiries for fancy varieties for next fall's delivery. This shows that the demand is growing for the better quality of nuts. The weight of the nut is equally important, since this varies widely in nuts of the same size. Some of the largest varieties are considerably lighter in weight than others in which the nuts are smaller. A desirable nut should be well filled with plump meat without too much air space between the shell and the meat. A comparatively heavy shell is more desirable than a very thin light one, since the nut is better protected from being mashed in handling and less susceptible to perforation disease, which is one of the most serious troubles of the walnut grower in recent years. It consists of a non-development of the outer hard layer of the shell. The hard shell is not actually perforated but rather fails to develop. This disease has become more prevalent in the last few years and affects principally the one with thin light shells. Nuts that are prone to crack easily, and have a fine light shell, are more or less injured in handling, thus contaminating the nut. It is also to be considered that since walnuts are sold by the pound, the heavier the shell the greater the weight and the more the returns for a given number of nuts. The leading walnut on the world's market is known as the Grenoble. In strictly speaking the Grenoble nut means a Mayette variety. It is not a long nut, somewhat broader at the base than at the apex. This is not very important, however, since its smoothness, symmetry and uniformity affects its productive appearance more than its shape. An ideal nut should be quite smooth, free from outside ridges and other irregularities of surface, and all nuts should be of the same general shape and appearance, giving them uniformity and individuality. A variety in

which the nuts are decidedly uniform so that the variety is easily distinguished and recognized even to the consumer has a marked advantage over one in which the nuts are of all sorts of shapes so that only an expert could distinguish the variety from others. The color of the nut is not so important, as the trade demands bleached nuts even though they may have an attractive appearance without bleaching. By being bleached they are all brought to about the same color. The quality of the meat is of considerable importance, however, as nuts with the lightest colored meats are considerably more desirable, while those that are dark, even though plump and of good color, are discriminated against. There is no doubt but what the dark-meated varieties will become more objectionable as more of the lighter colored ones are produced. The flavor of the meat varies considerably in the different varieties and is of much importance in a high-class fancy trade. Although commercially there is not much importance placed on their flavor except when they are bitter, and this is the most undesirable quality and should be guarded against in choosing the variety and to formulate an idea of what will constitute an ideal walnut. The most important qualifications in a variety from a strictly commercial standpoint is that it should be a uniformly large producer of nuts, the majority of which will not pass through a one and three-sixteenths inch square mesh, well sealed even though hard shelled, and should be uniformly well filled with meat of light yellowish brown color or not darker than light brown or amber. For a fancy trade the nut should be of an attractive, uniform shape and color with a fairly smooth surface and particularly high quality with agreeably flavored meat with no bitterness.

The next important consideration is the choosing of a variety that is resistant to blight. This is a bacterial disease which affects the young growth when it first puts out and requires moist weather conditions for its development. It is not very prevalent in Northern and Central California on account of the drier atmosphere, but under the same conditions some varieties are more blight resisting than others, probably due to their vigor. As a rule the late-blooming varieties are free from blight, as they come into bloom at the time when the blight can make little headway, while the earlier varieties blossom at a favorable period for its development. Certain varieties are spoken of as being immune to the blight, but while there is no such thing among walnuts as absolute immunity when conditions are favorable for the development of blight, yet some trees do show quite a marked resistance and should be given precedence on this account. While there are many seedlings of promise scattered throughout the state, both of the Santa Barbara soft-shell type and the French varieties, I will only consider the prominent

RUMELY

Power Farming Machinery



"Pays for Itself Each Year"

The ToeHold is low, narrow and light—built especially for orchard and vineyard work. It reduces cultivation costs, insures better yields, and increases profits.

F. A. Chadbourne of Suisun, Calif., wrote regarding his two ToeHolds: "These machines have paid for themselves each year I have used them." George J. Tomasini, of Suisun, Calif., states that he plowed and harrowed 600 acres with a ToeHold for \$300.00. J. F. Pyle & Son, of San Jose, Calif., says: "The cost is one-fourth that of horses for the same work done."

It is easy to handle. All parts are protected from dust. Air clarifier keeps dust out of carbureter. It burns gasoline. Ask for ToeHold catalog F34. Learn how big profits are made.

For stationary purposes use the Rumely-Falk, a kerosene engine, or the Rumely-Olds, a gasoline burning engine. Every Rumely machine is backed by Rumely service—49 branches and 11,000 dealers. Supplies and parts without delay.

RUMELY LINES

Kerosene Tractors	Engine Gang Plows	Gasoline Engines	Cream Separators
Gasoline Tractors	Threshing Machines	Oil Engines	Corn Machines
Steam Engines	Clover Hullers	Baling Presses	Lighting Plants

RUMELY PRODUCTS COMPANY

Chicago

(Incorporated)

Illinois

"BLUE RIBBON"

(EXTRA FANCY)

"RED RIBBON"

(FANCY)

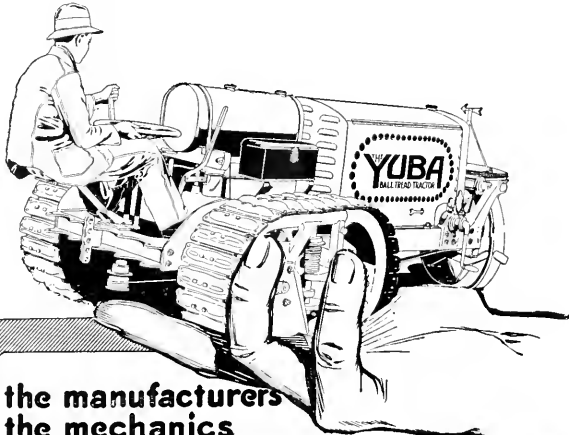
Famous Brands of Yakima Apples

Packed under our personal supervision
Get in touch with us by wire or letter

Yakima County Horticultural Union

E. E. SAMSON, Manager

NORTH YAKIMA, WASHINGTON



**the manufacturers
the mechanics
the machine**

Yuba Ball Tread Tractors are built by The Yuba Construction Company in their plant at Marysville, California. Back of this concern is ten years' experience gained in building gold dredges, suction dredges and irrigating pumps. To mining engineers, Yuba Gold Dredges are the standard. The average earning capacity of the largest gold dredge is one thousand dollars a day. A delay caused by faulty construction or broken parts is expensive.

THE YUBA BALL TREAD TRACTOR

The same engineering skill and the same mechanical accuracy that reduces possible delays from such causes to a minimum in Yuba Gold Dredges are exercised in building Yuba Ball Tread Tractors. As for the machine—there is a booklet describing it.

THE YUBA CONSTRUCTION CO.

433 California Street, San Francisco
Dept. G-3
Works, Marysville

RHODES DOUBLE CUT PRUNING SHEAR

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

Pat'd June 2, 1903.

RHODES MFG. CO.,
580 S. DIVISION AVE., GRAND RAPIDS, MICH.

varieties that have been thoroughly tested:

Santa Barbara Soft Shells.—Originated by Mr. Joseph Sexton of Santa Barbara. It is a seedling grown from a sack of nuts which probably came from Chili. This is the prevailing type of seedling walnuts of Southern California. The nuts vary in size and are irregularly shaped. Trees come out early in the spring, having a growth of six to eight inches by March 20th. The trees vary in their bearing qualities, are very susceptible to blight and are not very desirable for this reason and for their irregular bearing.

Santa Rosa.—A chance seedling introduced by Luther Burbank at Santa Rosa. The tree is a very thrifty grower and very precocious, but the nuts are small on old trees and susceptible to blight, consequently not very desirable.

Placencia.—The Placencia, which originated in Placencia near Fullerton, was extensively propagated by Mr. J. B. Neff of Anaheim, California. It was a seedling of the Santa Barbara soft-shell type. The nut is of medium size, averaging one and one-eighth by one and one-fourth by one and one-half inches, runs largely to average size; has very few large or small nuts; form is regular and somewhat elongated; the surface is quite smooth and the ridges not very prominent; the nuts are uniform in size but vary considerably in shape and smoothness, some quite elongated, others nearly round, but the shell is thin and strong. The nuts are poorly sealed. The septum is almost free from the shell so that the nut can be very easily opened with the fingers and the whole meat taken out intact. Kernel full size, quite smooth with comparatively few convolutions, averages 50 per cent or more of the total weight of the nut. Flavor mild and pleasant with no pronounced character. The tree makes a vigorous growth and the foliage very abundant and thrifty. The foliage period is quite early, about the same as all Santa Barbara seedlings, having a growth of about six inches by the 8th of April. It comes into bearing early and is a heavy bearer and the harvest season is early. It is very susceptible to blight and the nuts are sometimes very badly perforated.

Ware's Prolific.—This variety also originated from a Santa Barbara soft-shell seedling at Garden Grove, California. This is rather a large nut even on old trees. It is oval, quite elongated and elliptical, base and apex equal breadth, pointed at both ends. It is quite smooth and has conspicuous longitudinal grooves which gives it a characteristic appearance. The nuts are very uniform but poorly sealed, meat is decidedly plump and well filled, averaging about 50 per cent. Flavor is mild and pleasant, but the meat is quite dark, ranging from amber to dark brown, and in many cases nearly black. The tree comes out early in the spring, makes a fairly vigorous growth, forming much fruit wood, which makes the tree low and spreading. It is well filled

Go South Sir and **Prosper**

Purchase a Southern Farm

Look at the map of the United States. See how close to the big Eastern markets—by modern rapid transportation—are the states south of the Ohio and east of the Mississippi Rivers. Then consider the climate—mild winters, pleasant summers, ample rainfall. The soil—suitable to all crops—corn, cotton, alfalfa, wheat, oats, potatoes, tobacco, fruits and garden truck. Then the price—according to the improvements and location. Remember there are no cold winters—stock can graze on green pastures the year round, making production costs low. Expensive barns are unnecessary. Large local demand for farm products at profitable prices. *Industrial opportunities everywhere.* The Panama Canal will greatly benefit the South. Investigate this section of good roads, schools, churches and a healthful climate where *living is pleasant and profitable.* Booklets on the States of Virginia, North and South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee and Kentucky. In which are you interested? Our magazine "The Southern Field" sent on request.

GOOD LAND AT \$15 AND UP AN ACRE

M. V. RICHARDS, Land and Industrial Act.
Room 13 SOUTHERN RAILWAY Washington, D. C.

Mobil Oil Co. Southern Ry. Co. S. Ry.

with fruit spurs and the foliage is abundant and thrifty. The harvest season is early. It is one of the most precocious varieties we have, coming into bearing when very young. It is subject to blight the same as the other soft-shell seedlings, and very prone to perforations. This nut is worthy of consideration, on account of its heavy and early bearing, as a tree for replanting for a few years.

Chase.—This originated in a tree near Whittier and has been widely propagated by Mr. Rideout of Whittier, California. This original Chase nut is medium to large size on young trees, but small on older trees. In form it is broadly oval or rounded; apex and base of equal breadth, apex terminating in a short and pronounced point. Surface is quite smooth, nut not so very uniform. They are badly sealed, the meat is plump and well filled, averaging nearly 50 per cent of total weight. Flavor is mild. This tree comes out earlier than the average Santa Barbara seedling. The growth is very vigorous and thrifty and the foliage abundant. The nuts are harvested early and is a very heavy bearer, but is somewhat subject to blight. It is a good type of the Santa Barbara soft shells except that the nuts are small.

El Monte.—A Santa Barbara soft-shell seedling which originated near El Monte, California. It is a somewhat irregular shaped nut with pronounced ridges. The nuts are well sealed and filled with light-colored meat. Comes into bearing early and bears quite heavily. The tree is a thrifty grower, comes out early in the spring, about the same time as the other Santa Barbara seedlings, and harvests early. Its blight resistance is about the same as the other Santa Barbara seedlings. It is desirable on account of bearing early and heavily, but the nut is quite homely.

Nell's Prolific.—The original tree is a Santa Barbara soft-shell seedling in Mr. J. B. Nell's orchard at Anaheim, California. Mr. Nell selected this tree on account of its heavy bearing and not being so subject to blight and perforation as the ordinary seedlings. The nut is of good size, well sealed, exceptionally heavy and well filled with light-colored meat of good flavor. This variety has not been propagated very extensively and is a good variety on account of its heavy bearing, although the nuts are rather rough and irregularly shaped.

Franquette.—The French variety has several types. The one most commonly known as the Vrooman, from the Vrooman grove at Santa Rosa, was first propagated by John Rock at Niles. The Leibs of San Jose are also large growers of the Franquette. The Oregon Nursery Company controlled the scions and nuts from the Vrooman grove for a number of years. This variety, being well advertised and highly recommended, has been extensively planted on the Pacific Coast in recent years, not only as grafted trees but as seedlings. Not being enough grafted trees

\$30,000 for One Crop from a Sober Paragon Orchard



ACTUAL SIZE

Plant for profit or for decoration—Plant a thousand trees or a single one—Sober Paragon Chestnut will pay you more in dollars and satisfaction than anything else you could plant. 1913 crop sold for the highest price per bushel on record. Large nuts averaging 1 to 2 inches in diameter, and as sweet and delicious as the Native Chestnut. The only large sweet chestnut in the world.

SOBER PARAGON Mammoth, Sweet Chestnut

The tree pictured, seven years old, bore more than a bushel of perfect nuts. At one year from graft, bore three pints; at three years it bore three quarts. An orchard pays almost from the start, because you start with bearing trees.

Every Tree We Ship Is A Bearing Tree

These are magnificent trees for park or lawn; they make quick, hardy, symmetrical growth, with luxuriant spreading foliage, clean trunk and stately appearance.

We have had exclusive control of this variety since 1897, when we introduced it and sold the first trees. Every year our stock has improved, and we now have 100,000 bearing trees to offer. **CUTION.** Be sure your trees bear the nutal, copyrighted seal with the trade mark name "Sober Paragon."

Our 1914 Catalog and Planting Guide—Includes Nut Culture, Frosts, Insects, Sherabs, Evergreens, Etc., mailed free on request.

GLEN BROS., Inc.
Glenwood Nursery Established 1866
2270 Main St., ROCHESTER, N. Y.

The Wastefulness of "Price" Buying

To save money in purchasing is a duty everyone owes to his business. "Price" buying, however, does not always mean economy.

A few dollars "saved" in buying a typewriter may turn out to be many dollars wasted and make an expense of what should have been an investment.

The higher price paid for the

L. C. Smith & Bros. Typewriter

is paid for the greater amount of superior work it will turn out and its greater durability.

You will be surprised to learn what a great difference there is in typewriters. The cheapest is usually the most expensive.

Send for Free Book or Ask for a Demonstration

L. C. Smith & Bros. Typewriter Company

Home Office and Factory, SYRACUSE, N. Y.

Branches in All Principal Cities

PORTLAND
BRANCH
OFFICE



305 OAK STREET
PORTLAND
OREGON

PORTLAND, OREGON

PORTLAND HOTEL

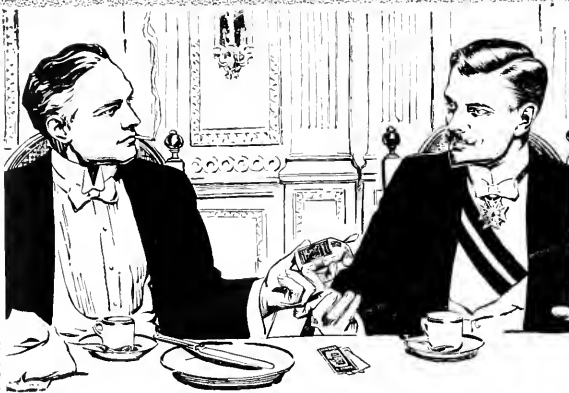
The hotel which made Portland, Oregon, famous
Most Desirably Located. In the Center of Shopping and Theatre District
Covers a City Block

Broadway, Sixth, Morrison and Yamhill Streets

EUROPEAN PLAN—\$1.00 per day and upward

Write for Portland Hotel Booklet

G. J. Kaufmann, Manager



"Bull" Durham An International Favorite

Smokers of experience and discrimination the world over obtain year-round, daily enjoyment from "Bull" Durham tobacco. Men prominent in the social, business and public life of many nations find supreme tobacco satisfaction in the deliciously fresh, mild cigarettes of unique flavor they roll for themselves, to their individual liking, from this wonderfully pure, mellow tobacco. Their distinguished example has made it correct, smart, fashionable to "Roll Your Own" upon every occasion.

GENUINE "BULL" DURHAM SMOKING TOBACCO

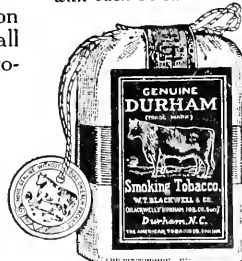
There is no purer, milder tobacco in the world than "Bull" Durham—none other with such a sweet, mellow, irresistible fragrance. This rare, balmy aroma is as delicate and elusive as it is distinctive and pleasing, and can only be retained and enjoyed in the *fresh-rolled* cigarette.

"Bull" Durham hand-made cigarettes afford wholesome enjoyment and lasting satisfaction to more millions of men than all other high-grade smoking tobaccos combined.

FREE An illustrated booklet, showing how to "Roll Your Own," and a Book of cigarette papers, will both be mailed, *free*, to any address in U. S. on postal request. Address "Bull" Durham, Durham, N. C., Room 1105

THE AMERICAN TOBACCO COMPANY

Ask for **FREE**
book of "papers",
with each 5c sack



to supply the demand, many resorted to planting seedlings. The eagerness of planters to set out walnuts causing Franquette seedlings to be planted. Of course the result of this, as with all other seedlings, is going to be variable and disappointing. The Vrooman Franquette nut is medium to large and retains its size on old trees. Decidedly elongated, but pointed base much broader than the apex, surface medium smooth with sutural ridges. The color is a light yellowish brown. Their uniformity is strong and their characteristic shape makes them easy to identify. The nuts are well sealed but thin shelled and are readily cracked. The meat is moderately plump and the shell well filled except at the point of the nut. Flavor is sweet with a characteristic nutty flavor. The consistency of the meat is also soft or oily. The buds just begin to swell about April 15th. The harvest season is late, often being caught by the fall rains. It is a fair, vigorous grower. The precocity is not pronounced. It is one of the slowest of the varieties to come into bearing. Has a thick husk and abundant foliage which protect the nuts from sunburn. It is one of the best proven varieties for Central and Northern California and has been considerably tested. The quality of the nuts is the best. With its uniform shape, pretty color, white meat and firm sealing, makes the Franquette one of the very highest quality, and were it a heavy bearer it would be an ideal nut. I have a couple good types of imported Franquette, however, which are much more precocious than the Vrooman strain.

Mayette.—This, like the Franquette, is a French nut. Like the Franquette, there are several types of Mayette, due probably to being originally propagated in France by seedlings. They differ widely in character, but have a general resemblance. The Mayette, like the Franquette, is characterized by the shape of the nut. In the true Mayette type the base of the nut is decidedly flat and square, cut so that it can be set on the basal without falling over. The nut rounds broadly to a point at the other end, giving it sort of a flat-iron shape. In a good Mayette the meat is plump, white and well developed and of good flavor. It averages about 50 per cent of the total weight. The shell is thin and strong and well sealed. The Mayette comes out late in the spring, about a week or ten days before the Franquette, but ripens at least three or four weeks earlier in the fall than the Franquette. The different types vary considerably in their rapidity of growth and the amount of foliage, also in their bearing qualities, most of them being very light producers. Mr. S. F. Leib of San Jose has some imported trees. There are several types that were imported by the late Mr. Gillet. Tribble Bros. of Elk Grove also propagate two or three types which were imported from France. Mr. Leonard Coates of Morgan Hill has propagated quite extensively San Jose Mayettes, which is one of the most attractive and



Your Hands Support the World

HELP them do it right—for the world's good and for your own safety, comfort and profit in the working. Send for our Free Book on

Hansen's Gloves

Learn how and why they give "free hand" service long wear, and pay for themselves many times over. The book tells all about the glove or mitten that's made for you—for work, driving or sport—for any and all times. Strong, easy fit.

Strongest, softest leather. Never garden, crack or peel. No rough or binding seams. Write now. If no dealer is near, let us know.

O. C. Hansen Mfg. Co.
321. Detroit St. Milwaukee, Wis.

Save \$35 to \$50

Yes sir, I'll save you \$35 to \$50 in the first cost alone on the best, most modern, most sanitary and closest admitting cream separator ever built. When you buy the

New Galloway Sanitary

—you pay just one small profit above actual cost of materials and labor. Why pay any dealer \$55 to \$110 for an inferior machine. Buy direct and save one-half. Get my

Special 1914 Offer and 90 Days FREE TRIAL

test of this machine right on your farm.

The new Galloway Sanitary skims to trace, gears run in oil—easy to run—easy to clean. Sold direct, backed by \$25,000 bond. Write for new catalog and special 1914 offer that will help you get your machine partly or entirely without cost to the end. Write today.

WM. GALLOWAY COMPANY
1023 Galloway Station Waterloo, Ia. 463

BUY AND TRY

White River Flour

MAKES

Whiter, Lighter Bread

handsome walnuts grown in California. It is of large size, above the average of most varieties. Has a typical Mayette form with smooth surface and uniformity. The nuts are not any too well sealed, has a thin shell and the meat is small in proportion to the shell. This type is of slow growth and scant foliage and not a heavy producer. I have a Mayette imported from France which is most promising, as the nut is a good type precocious and a heavy bearer. If it continues its present standard it will be a leader.

Bijou.—This is also a French variety, having the characteristics of those varieties, that is, coming out late in the spring. As a rule they are very rough and poorly filled with meat and are not considered a commercial nut. There are, however, Bijou seedlings which have smoother and better nuts, such as the Acme, which is fairly smooth, rather elongated at the apex than at the base and almost square in end view. The shell is heavy and it is fairly well filled with meat, averaging about 40 per cent of the total weight. It is not of any special value for commercial purposes. The Klondyke is another walnut of the Bijou type. The Willson Wonder, propagated by F. C. Willson of Sunnyvale, is perhaps the best Bijou type we have. The nuts are very large but smoother and better filled than those of the Bijou. It is extremely precocious, coming into bearing very early. The nut is smooth and symmetrical, being broader at the apex than at the base and nearly square in end view. The flavor is mild and sweet and the meat white. These nuts are very large. They sometimes measure two by three inches. The tree is a slow grower and of scant foliage, probably due to its heavy bearing qualities. It is like the other late varieties, quite blight resisting in dry climates.

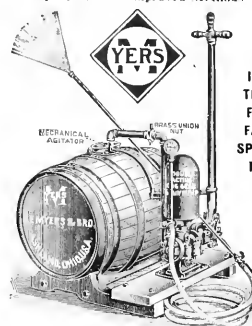
Payne.—This nut is an accidental seedling discovered by George C. Payne of Campbell, California. It is of the Franquette type and is an excellent nut. It comes out rather early in the spring. It is a very heavy bearer but blights badly.

Parisienne.—This is a French variety introduced by the late Felix Gillet. The nut is rather long and pointed, somewhat resembling the Franquette but broader in the center. The shell is light, the meat is fairly well filled, light color and a good flavor. Like the other French varieties, it is late in coming out in the spring. This is a very good nut. Its greatest drawback being that it is a light producer.

Concord.—This variety originated in a seedling tree on Mr. George M. Westcott's place at Concord, Contra Costa County, the original tree coming from Felix Gillet. It has been propagated by Leonard Coates of Morgan Hill. The nuts are not large; they are broad and short with a square cut base, slightly wider than the apex and fairly smooth. The nuts are fairly uniform and are well sealed. The meat is plump, white and well formed, filling the shell completely. The tree comes out medium

WE HAVE A MYERS SPRAY PUMP CATALOG

For Every Fruitman, Gardener, Farmer or Townsman who is Interested in efficient Spraying and Improved Methods



IT'S TIME FOR FALL SPRAYING

If you raise fruit or vegetables in any quantity or have flowers, shrubbery and ornamental trees that must be protected by spraying, you will find a MYERS SPRAY PUMP that will just fit your needs shown in this Catalog. Better ask for your copy today and name of our nearest dealer, and spray Myers Way this fall.

F. E. MYERS & BRO.
Ashland Pump and Hay Tool Works
120 Orange St., Ashland, Ohio

Portland Wholesale Nursery Company

Rooms 301-302 Stock Exchange Building
Corner Third and Yamhill Streets
PORTLAND, OREGON

The Cashmere Nurseries

G. A. LOYDENBACK, Proprietor

A COMPLETE LINE OF NURSERY STOCK

WRITE FOR PRICES

CASHMERE WASHINGTON

Orchardist Supply House

Franz Hardware Co.
Hood River, Oregon

YOU CAN MAKE \$20.00 A DAY

AND JUST ONE MAN ON THE JOB WITH A **KING OF THE WOODS DRAG SAW**



Pushes right up the steepest hill and over the roughest ground. One man writes his sawed 44 ft. in 10 hours. Another sawed 10 cords in 8 hrs. Another sawed 20 cords in a day. Another writes his machine will climb a tree. **THERE IS MORE YOU SHOULD KNOW** Write for Testimonials and Catalog D-1

Reierson Machinery Co.
Manufacturers, PORTLAND, OREGON.

The leading varieties for Southern California are the Placencia, Nell's Prolific, El Monte and Ware's Prolific. For Central and Northern California the Eureka is undoubtedly, all things considered, the best variety on heavy soil with good moisture conditions. Then come Mayette, Franquette and Concord. These being better on the lighter soils than the Eureka.

Hogs in the Orchard

By Kenneth C. Miller, Sheridan, Oregon

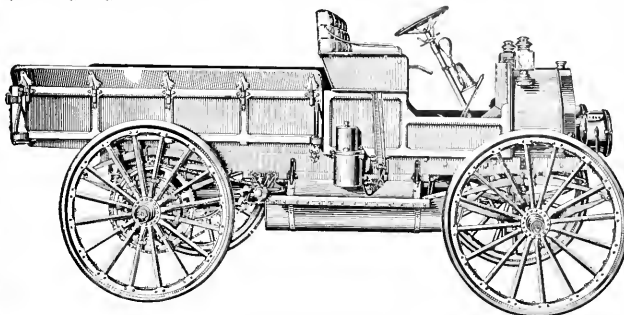
OREGON'S mild winter climate, which allows the vetches, rape, turnips and other suitable orchard cover crops to produce such an abundant growth, also allows the hog to feed and grow without having his feed frozen or covered by snow for any length of time. For the past several years we have grown cover crops and raised hogs in our young 65-acre orchard, situated on the rolling hills at Sheridan, Yamhill County, Oregon. These crops were originally intended merely to replenish the soil, which had been "grained to death." The type of soil is the deep red hill soil, common in that section of the Willamette Valley.

Our starting to raise hogs in the orchard was rather an accident and began in this way: We first commenced to raise common vetch to replenish the nitrogen in the soil, and, in the spring, having bought a prolific old brood sow, there was no place for the pigs to run that winter except in the orchard. The year-old pigs taken from this vetch crop in the spring and fed for ten days averaged 225 pounds in weight; and the pigs, in the meantime, had increased from one brood sow to forty-two pigs in all. After having used vetch for three seasons and obtained an enormous tree growth, we decided to try some potash producers and sowed rape, cowhorn turnips and yellow Aberdeen turnips, also sowing some pieces to common vetch and hairy vetch.

The preference of the hogs for the various feeds was quite interesting. They kept the common vetch cropped very closely at all times and did not touch the hairy vetch at all. Next in preference to the common vetch was the yellow Aberdeen turnips. They ate all of them before touching the cowhorn turnips, which came next in preference. After cleaning up the cowhorn turnips they took to the rape, but always keeping the common vetch closely cropped down and never touching the hairy vetch. Of course they would undoubtedly do well on any of these feeds, but their lines of preference for the different feeds were very decidedly marked. It would seem that hairy vetch would be eliminated in this climate, as common vetch does so well and can be bought here for two to three cents per pound in the fall, whereas the hairy vetch costs us sixteen cents per pound. However, the same number of pounds of hairy vetch will seed more ground than the common, as the hairy vetch seed is much smaller. The yel-

Use An International Motor Truck

Many an up-to-date successful fruit grower will tell you that we are justified in saying this: Wherever fruit growing is a business, and produce is still handled by horse and wagon, there are respectable fruit profits going to waste.



The International Motor Truck

saves and makes money for thousands of firms in practically all lines of business. Your business deals in perishables that require timely, rapid, perhaps long-distance hauling.

Buy an International and be ready for your daily hauling problems and for emergency trips. The International is simple, sturdy, easy to operate. It is always ready to go, rain or shine, day or night, in all seasons on all roads. It does the work of three or four horse-and-wagon rigs, goes three or four times as fast as one. When it is not in use it puts you to no expense, and when you want it the International will be ready for you.

Our catalogue will tell you of many such features as these: Solid puncture-proof tires; simple, accessible, powerful motor; single lever control; wheels high enough for good traction and ample road clearance; any style of body, etc. If better business interests you write us for more information.

International Harvester Company of America

INCORPORATED

Chicago

U S A

D. Crossley & Sons

ESTABLISHED 1878

Apples for New York and Export

CALIFORNIA, OREGON, WASHINGTON, IDAHO AND
FLORIDA FRUITS

Apples handled in all European markets at private sale. Checks mailed from our New York office same day apples are sold on the other side. We are not agents; **WE ARE SELLERS.** We make a speciality of handling **APPLES, PEARS AND PRUNES** on the New York and foreign markets. Correspondence solicited.

200 to 204 Franklin Street, New York

NEW YORK

LIVERPOOL

LONDON

GLASGOW

"PEARSON'S"

(CEMENT COATED)



Honest Quality
and
Full Count
have made them
the
world's standard.

Always Specify
PEARSON'S

Accept no
Substitute

Pacific Coast Agents

UNITED STATES STEEL PRODUCTS CO.
San Francisco—Los Angeles—Portland—Seattle

J. C. PEARSON COMPANY, Inc., Old South Building, Boston, Mass., Sole Manufacturers

The Hood River Apple Sizer

Apple buyers and consumers are demanding standardization and uniformity in the grading and sizing of apples. This work is usually done by hand, costing from five to fifteen cents per box. The apple industry demands economy in every phase of the business. Consequently an apple grower in Hood River has invented

The Hood River Apple Sizer

It will reduce the labor of grading and sizing from 20 to 30 per cent after crop is in the apple house, making the little machine save \$2.50 to \$5.00 per day.



The Hood River Apple Sizer is simple in construction and operation—with no complicated machinery to get out of order. It is small and compact, occupying a space of 4½x6 feet so it can be used in any packing house, no matter how small. With extra help it has a capacity of 500 boxes per day and the cost of grading and sizing can be done for 3c per box. The price is so low that every grower, no matter how small, cannot afford to be without it.

ANY GROWER WITH A 1,000 BOX CROP CAN SAVE THE COST OF THE MACHINE IN ONE YEAR.

FOR PARTICULARS AND PRICES WRITE TO

J. F. VOLSTORFF, Hood River, Oregon

low Aberdeen and cowhorn turnips do equally well as to growth.

The number of hogs per acre that you could run depends upon how your crop is handled, whether you irrigate or not and numerous other conditions. We have sown our cover crops from July 1 to September 1, putting them in with a grain drill so they will then get moisture enough to come up at once. This gives us plenty of fall pasture for the spring pigs. We have the sows farrow in the spring and carry them and the young pigs on summer pasture. We find it essential to have a quick maturing type of pure bred stock. Pure bred because you get the proper type of a market hog, which brings you more money per pound and also because they put on more fat with more ease, giving you more per bushel for your grain when finishing. We feed no grain except for finishing off. For feeding grain, your hogs must have the proper age. You cannot lay too much stress on type and age. Whenever we have finished plowing under the cover crop in the spring, we then put the hogs in to fatten. They always come off in fine shape to fatten and sometimes hogs of sufficient size are ready to sell without any grain feed; but it is no trouble at all to put on an average of over two pounds per day per hog by feeding ground wheat. We have had hogs, of selected type and age, actually put on four pounds a day. Our buyers like the fat hog to weigh from 175 to 225 pounds and will cut the price on you if they weigh over 250 pounds. Also, in order to get the best prices, you must have the hogs fat before the early summer slump comes in the market price, which is usually about the time clover hogs come off in June.

After having conducted several feeding experiments as to the value of feeding wheat, we have found that the wheat will bring from as low as 85 cents per bushel to \$1.47 per bushel. This will vary a great deal, according to your type and age of hog. On the average, though, your wheat will bring you better than a dollar per bushel. Other grain feeds, though, might be cheaper in some localities, but we use wheat because we raise our own. Of course, the amount you can pay for your grain depends also on how much you get per pound for your fat hogs. On a bunch of mixed hogs, recently fattened, many of which were of inferior type and too young, we obtained 86 cents per bushel for our wheat, the hogs selling at 7½ cents. This was just about the price the buyers would pay for wheat at this point. Selected types of hogs, though, did much better, in that they put on more fat for the amount of grain they ate and brought a higher market price, due to their type.

This is just one of the many ways to make the orchard help pay for itself. Although we have run hogs in our orchard for several years, we have never yet had them seriously injure a tree. They will rub against the trees a good deal, sometimes breaking a small limb, but they have never rooted them

HOOD RIVER APPLE VINEGAR CO.

HOOD RIVER

**YELLOW NEWTON VINEGAR
AND SWEET CIDER
EVAPORATED APPLES**

Made from Choice Hood River Apples

If your jobber cannot supply you
send your order to

Hood River Apple Vinegar Co.
HOOD RIVER, OREGON

Established 1893

W.P. KRANER & CO.

Importers and Tailors

2nd Floor Couch Bldg.
109 Fourth Street
Portland, Ore.

GEO. E. KRANER — C. W. STOSE

The Question of the Day

With the fruit grower's loss, how can he derive a revenue from his overripe and unsalable fruits?

It can be done. It is being done. How? By the use of the new and up-to-date process of

DEHYDRATING

Which is the cheapest, quickest and best process ever devised for preserving fruit without changing the taste or flavor; is clean and sanitary. There is always a market for this product. Can be operated by anyone. Capacity to meet all requirements.

For descriptive booklet address

Luther Vacu-Dehydrator Co.
SPOKANE, WASHINGTON

H. HARRIS & CO.

Fruit Auctioneers

227 State Street
Boston, Massachusetts

Established 1847

Frank Moseley
Frank L. Ripley
Cutler B. Downer

F. A. BISHOP, Secretary

HOOD RIVER ABSTRACT COMPANY

HOOD RIVER, OREGON

ABSTRACTS INSURANCE
CONVEYANCING

YOU WANT THE BEST SPRAYER



You want to save time, temper, trouble and trees. You want to raise fruit that brings the highest price. You want to know all about our sprayer before you buy. There is more you ought to know. Do You Want To Know The Price?

Write for a free
Catalogue #6
REIDSON MACHINERY CO.
Manufacturers 182 Morrison St., Portland, Ore.

out or eaten the roots. There was, however, always an abundance of feed. We find they will eat the tender young shoots in the spring if left in the orchard after the cover crop has been turned under. Of course they would eat the apples from low-headed trees if put in the orchard too early in the fall. Then, too, they will pack the ground in many places, especially in winters like the past one, when we had no freezes to loosen the ground. This requires great care to plow at the right time or your ground will be cloddy. Generally it will require more work to get your ground in the same condition than it would had the hogs not been pastured. However, when you pocket the returns from a nice, smooth bunch of fat hogs you will not be able to see that your orchard has been harmed in the least; but you will be able to see the benefits to your trees from your cover crop, and also a nice profit from your hog raising, which was accomplished without extra help and with very little extra labor on your part.

Fine Table Syrup from Apples

(U. S. Department of Agriculture)

FOLLOWING extensive experiments begun last spring, the head of the fruit and vegetable utilization laboratory of the Department of Agriculture has applied for a public service patent covering the making of a new form of table syrup from apple juice. This patent will make the discovery, which the specialists believe will be of great value to all apple growers as a means of utilizing their culls and excess apples, common property of any cider mill in the United States which wishes to manufacture and sell apple cider syrup.

The new syrup, one gallon of which is made from seven gallons of ordinary cider, is a clear ruby or amber colored syrup of about the consistency of cane syrup and maple syrup. Properly sterilized and put in sealed tins or bottles, it will keep indefinitely, and after being opened will keep under household conditions as well as other syrups. It has a distinct fruity aroma and special flavor of its own, which is described as being practically the same as the taste of the syrupy substance which exudes from a baked apple. The syrup can be used like maple or other syrups for griddle cakes, cereals, household cookery and as flavoring in desserts. The government cooking experts are at present experimenting with it in cookery and expect shortly to issue recipes for use of the new syrup in old ways and for taking advantage of its special flavor in novel dishes.

The department chemists have already produced over ten gallons of this syrup in their laboratories, using summer and other forms of apples. The success of the experiments has greatly interested some of the apple growers, and during October a large cider mill in the Hood River Valley, Oregon, will, in co-operation with the government chemists,

Things We Are Agents For

Knox Hats

Alfred Benjamin & Co.'s Clothing

Dr. Jaeger Underwear

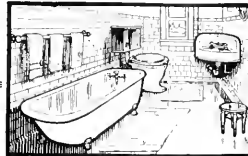
Dr. Deimel Linen Mesh Underwear

Dent's and Fownes' Gloves

Buffum & Pendleton

311 Morrison Street

PORTLAND, OREGON



Wise Buying is Necessary for the Successful Fruit Ranch

Call or write for details of our system that saves you the retailer's and plumber's profits on all your plumbing supplies, pipes and fittings. Money-back guarantee of complete satisfaction. Estimates free.

STARK-DAVIS CO.
212 Third Street — 249 Salmon Street
PORTLAND, OREGON



WHITTIER COBURN CO. S.F. SOLE MFRS.

True-to-Name Nursery

GALLIGAN BROS.
Proprietors

Hood River-Dufur, Oregon

Wholesale and Retail General Line of Nursery Stock. Seventeen years in the business. For catalogue and prices write

True-to-Name Nursery

Hood River, Oregon

Vehicles and Agricultural Implements

THE BEST OF
ORCHARD AND GARDEN TOOLS
A SPECIALTY

Gilbert Implement Co.

HOOD RIVER, OREGON

The Orchard Heater that Lights Itself

Announcement to Fruit Growers



It Lights
Itself

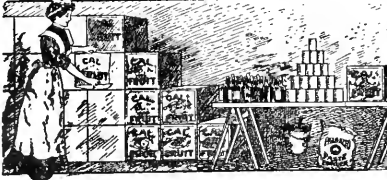
After many years of experimenting, we have succeeded in perfecting, and are now able to offer to the FRUIT GROWER, our **AUTOMATIC ANTI-FROST STOVE**; the Best and Cheapest Insurance against damage by Frost to trees in bloom or setting fruit. The **AUTOMATIC ANTI-FROST STOVE** is the **ONLY SELF-LIGHTING** and **OPERATING ORCHARD HEATER** in the world.

Send for Catalogue and Price List

The Anti-Frost Stove Co.

621 Main Street, CINCINNATI, OHIO

Paste for Labeling—"Palo Alto" Paste Powder



added to cold water, instantly makes a beautiful, smooth, white paste. Ready for immediate use at a cost of ten cents a gallon. No labor. No muss. No spoiled paste.

Paste Specialists

Robinson Chemical Works
349-351 Eighth Street
San Francisco, California

KINGMAN & HEARTY, Inc.

E. W. J. HEARTY, President

Commission Merchants

Box Apples a Specialty

20 Faneuil Hall Market (North Side)

BOSTON, MASSACHUSETTS

WE MAKE A SPECIALTY OF

Catalogs, Booklets and Circulars

FOR

*Nurserymen, Fruit Growers, Manufacturers
and Selling Agents*

Write us for specifications and information. Quality and Service

F. W. BALTES AND COMPANY

Fine Printing Portland, Oregon

endeavor to produce 1,000 gallons on a commercial scale and give the new product a thorough market test by making it accessible through retailers in a limited field. The interest of apple growers in the product arises from the fact that the new apple cider syrup promises to give them a commercial outlet for vast quantities of windfall and other apples for which they hitherto could find no market either in perishable raw cider or in vinegar. Cider production, it seems, comes largely at one season of the year, during which the market is more or less flooded with this perishable product. The bulk and perishability of the raw cider, moreover, the cider makers state, often make it unprofitable for them to ship the raw cider of one district long distances to a non-apple-growing region. The market for cider, therefore, has been largely restricted in many cases to localities near the area of production. No method of sterilizing ordinary cider has been found practicable, for the reason that boiling cider at once interferes with its delicate flavor.

With the cider mill able to make a palatable, long-keeping table syrup out of its apple juice, growers, it is believed, will be able to use all excess juice for bottled or canned apple syrup. The new syrup, the specialists find, will keep indefinitely, so that the cider makers can market it gradually throughout the year. The process for making the syrup calls for the addition to a cider mill of a filter press and open kettles or some other concentrating apparatus. The process is described as follows: The raw cider is treated with pure milk of lime until nearly, but not quite, all of the natural malic acids are neutralized. The cider is then heated to boiling and filtered through a filter press, an essential feature of the process. The resultant liquid is then evaporated either in continuous evaporators or open kettles, just as ordinary cane or sorghum syrup is treated. It is then cooled and allowed to stand for a short time, which causes the lime and acids to form small crystals of calcium malate. The syrup is then refiltered through the filter press, which removes the crystals of calcium malate and leaves a syrup with practically the same basic composition as ordinary cane syrup. Its flavor, however, and appearance are distinctive. Calcium malate, the by-product, is a substance used in medicine and is at present selling for two dollars a pound. It is believed that if calcium malate can be produced in this way cheaply and in large quantities, it can be made commercially useful in new ways, possibly in the manufacture of baking powder.

List of Fairs, Apple Shows and Expositions for 1914

New Westminster, B. C., September 28-October 5.

Utah State Fair, Salt Lake, October 5-12.

Fifth Annual Apple Show, San Francisco, October 1-11.

Manufacturers' Land and Product Show, Portland, October 26-November 14.

Sixth National Apple Show, Spokane, Washington, November 16-21.

Hard times cannot be cried down by shouting, but they can be beaten down and driven off by everyone lending a helping hand and showing the way over from the dark side to the bright side.

Remember that every dollar this country had a year ago or five years ago it has today. We have not been drained of our resources. Our factories have not been burned down, our young men have not been killed in tens of thousands, we have not lost thousands of millions in trade, but on the contrary shall gain trade. All we need is to attend to our business, produce, sell, buy of each other, stop pessimistic talk and we shall have all the prosperity we want and possibly more than we deserve.

STEINHARDT & KELLY

Herewith Proclaim Their Unshaken Faith in the American Apple

The 1914 crop of apples is being harvested under conditions that have no parallel in the past. There has probably never been a larger crop, our export outlets have been blocked, money is at unheard-of premiums, if obtainable at all, the growers and the trade are all at sea.

Nevertheless STEINHARDT & KELLY are placing contracts for choice blocks of Western box apples from the famous growing districts. They have contracted for approximately

650 CARS

already and are steadily buying more for storage.

Apples will be paying property this year as in the past. Nothing but lack of confidence makes the 1914 situation different from that in other years.

STEINHARDT & KELLY have been handicapped by as much uncertainty as anybody else, but now, after a careful study of conditions and prospects they are carrying out a conservative but confident policy and take this method of publishing their confidence for the encouragement of the apple trade and apple industry.

The crop now being harvested represents eight to ten months of anxious work by the producers of fine apples. Without distribution growers cannot continue to produce. It is now the duty of the trade to back the growers loyally. Old antagonisms must be dropped on all sides, old fallacies about the "superfluous middleman" must also be forgotten and the foundations laid for a bigger and a more glorious future.

Whether we handle box, barrel or bulk apples it is our duty as distributors to back up our fellow Americans who produce this fruit in which we all have vital and permanent interests. Let us talk less of difficulties and more of the possibilities. The Export outlook may be dark now, yet without exports of any sort we could still consume the whole crop at home at a profit to all concerned. Where there is a will there is a way!

STEINHARDT & KELLY cannot buy all the apples in the United States, but they can buy quantities in keeping with their supplies of past years, and are doing so, and they can and are placing contracts judiciously to sustain and compensate those growers in all the famous districts who have worked hardest to establish and maintain the highest standards in quality, goods and pack.

Everybody Must Help

Let us all work together towards a constructive end! The 1914 apple deal may be no different from that of other years; it merely looks a little different now.

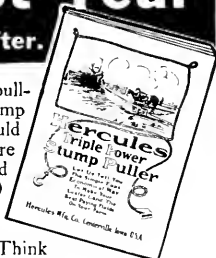
Buy apples! Buy good apples! Handle them skilfully, work to stimulate consumption, let them go at prices that will encourage use and give everybody a sure but moderate profit. If you do this the 1914 apple deal will eventually be a paying proposition for everybody concerned, grower, trade and public.

Your 40 Acres of Stump Land Can Be Turned Into a Profit of \$1281.00 The Very First Year

And \$750 Every Year After.



YOU can double the land value by pulling out the stumps. If your stump land is worth \$20 an acre—it would easily be worth \$40 an acre if it were tillable. On 40 acres the increased realty value would be \$800. On 40 acres of cleared land—*virgin soil*, you could easily raise 1500 bushels of corn—at 50c per bushel—\$750. Think it over Mr. Farmer. Stumps cost you big money. With land values going up—and crop prices as high as they are—you *can't afford* to keep on paying taxes for land that doesn't bring in a cent.



This Free Book Proves It

Read how thousands of other progressive men have pulled out stumps on their land instead of buying new lands. They've taken advantage of the *virgin soil* that the stumps keep away from cultivation. They've paid for their stump puller over and over again the first year with the profits from the extra crops and increased value of the land. And now they're doing contract stump pulling for their neighbors or renting their Hercules Stump Puller at a nice profit. But the main thing is, their own land is free from costly stumps—they farm all their land—and all their acres are at top-notch realty value.



HERCULES

All Steel, Triple Power Stump Puller

It will pull up any size stump, green tree or hedge in five minutes. It will clear an acre or more of stumps a day.

I want you to bear in mind that the Hercules is the only Triple Power, All Steel Stump Puller made; that it can be changed from triple to double or single power in a moment's time without trouble; that it is the only stump-puller having all the working parts machined and finished to reduce friction—hence the lightest draft machine. I want you to remember that the Hercules is 60 per cent lighter and 400 per cent stronger than cast iron or the so called semi-steel or new process steel which are catchy phrases now-a-days used to describe cast iron pullers; that you can clear almost three acres without moving the Hercules that the double safety ratchets absolutely prevent accident to the men or team.

Guaranteed for Three Years

The all-steel construction, the triple power feature that saves your team and gives a tremendous increase of power, the double safety ratchets and careful turning and machining of every part—all these things make it safe for us to guarantee the replacement of any casting of a Hercules that breaks at any time within three years, whether it is the fault of the machine or your fault. Could any guarantee be fairer or stronger?

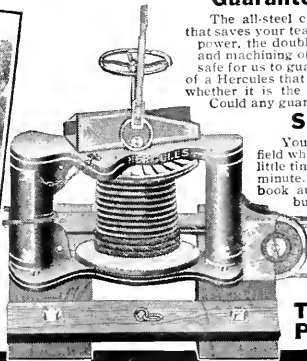
Send In Your Name

Now you can't afford to have stumps in your field when it is so easy, so cheap and takes so little time to pull them out. Don't wait another minute. Mail me a postal at once for my fine book and my low introductory offer to first buyers. Address me personally.

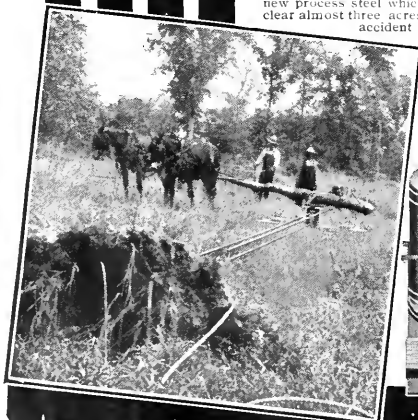
B. A. FULLER, Pres.

Hercules Mfg. Co.

869 23rd Street
Centerville
Iowa



Triple Power



BETTER FRUIT

VOLUME IX

DECEMBER, 1914

NUMBER 6

Special Information About Pruning and Shaping Young Trees Pruning for Fruit Every Year



*Engraved by
Hick-Chatten Company
Portland, Oregon*

The Spitzberg is universally conceded to be one of the best eating apples grown, having a distinct spicy flavor and being very juicy, and is a beautiful red in color. The Spitzberg is usually at its best during the months of October, November, December and January; however, it can be kept in good condition in cold storage much longer. For richness of flavor cooked it has no superior. It is grown extensively in the Northwest.

BETTER FRUIT PUBLISHING COMPANY, PUBLISHERS, HOOD RIVER, OREGON

Subscription \$1.00 per Year in the United States; Canada and Foreign, Including Postage, \$1.50

Single Copy 10 Cents

OUR SPECIALTIES

and the **DEACHES**
THREE BIG YEARS
ROUTES

We handle more box apples than any concern in Ohio and want to hear from every grower and shipper who will have either large or small lots to offer. Let us hear from you at once.

I. N. PRICE & CO., CINCINNATI, OHIO

REFERENCES: ANY BANK OR CREDIT AGENCY

to **PUGET SOUND**
CENTRAL OREGON
SPOKANE and
EASTERN CITIES

IS THE

OREGON-WASHINGTON RAILROAD & NAVIGATION CO.

"THE LINE OF STEEL COACHES AND AUTOMATIC BLOCK SIGNALS"

- Superior Service
- Splendid Equipment
- Convenient Schedules
- Oil-Burning Locomotives
- First-Class Dining and Sleeping-Car Appointments
- Courteous, Capable Employes

Information, Tickets, Reservations, etc., upon application to any agent of the O-W. R. & N. Company, or

CITY TICKET OFFICE
THIRD AND WASHINGTON STREETS, PORTLAND, OREGON



THE SOUTHERN GATEWAY
THE SOUTHERN GATEWAY
THE SOUTHERN GATEWAY

6458 Acres

IN OUR ENTERPRISE

4178 Acres

ALL IN APPLES

Nine miles continuous rows of trees, the largest apple orchard ever planted. All are one, two and three years old; the two and three year old all sold, amounting to over 3,000 acres.

We are now offering our one year at terms to suit you.

We give five years', from date of planting, free care. Our company is unlike others in the feature of staying with our purchasers after the free care period. Our plans make our interests mutual; we all work together for the interest of all.

Our Booklet will give you a simple statement of our dealings and methods. Write us for information.

Northwestern Bank Building
Portland, Oregon

6% MONEY 6% MONEY 6%

Loans may be obtained for any purpose on acceptable Real Estate security; liberal privileges; correspondence solicited.

A. C. Agency Company

758 Gas. Electric Bldg.
Denver, Colo.

440 Phelan Building
San Francisco

F. A. BISHOP, Secretary

HOOD RIVER ABSTRACT COMPANY

HOOD RIVER, OREGON

ABSTRACTS INSURANCE
CONVEYANCING

THE SOUTHERN GATEWAY

Our location and facilities are in the 4A class.

We have also reservations in a new Cold Storage House for a number of cars of Box Apples—on which a liberal cash advance will be made.

"The Pioneer Box Apple House"

LILLY'S SOLUBLE SULPHUR COMPOUND

THE SULPHUR SPRAY PERFECTED

MANUFACTURED IN SEATTLE UNDER NIAGARA SPRAYER CO. PATENTS

Beware of Inferior Substitutes put up under deceptive labels and in similar packages

THIS LABEL ONLY IS USED ON THE PACIFIC COAST. ONLY ONE FACTORY—SEATTLE—WEST OF ROCKY MOUNTAINS



UNDER THIS LABEL ONLY IS SOLD THE GUARANTEED PRODUCT (NIAGARA) SOLUBLE SULPHUR COMPOUND

ONCE IT WAS SAID, even by chemists, that it was impossible to make a clear lime and sulphur solution. Niagara Lime-Sulphur Solution was the answer. First made on the Pacific Coast in Portland, it soon became known all over America. Out of that work, and by the same progressive efforts, has been produced the improved form of sulphur spray known as Soluble Sulphur Compound. This is another impossibility turned to the greatest success.

Much misinformation has been dispensed concerning the composition of Soluble Sulphur Compound. The following analysis is made by a national authority in his profession, Dr. H. G. Byers, of the University of Washington:

Sulphur freed by acids.....	51.4%
TOTAL SULPHUR.....	62.1%
SULPHUR AS POLLYSULPHIDE.....	42.3%

Sulphur as Thiosulphate.....	19.4%
Sulphur as Sulphate.....	0.4%
Sodium.....	22.1%
Ash.....	0.05%
Moisture.....	0.02%
Carbon Dioxide.....	0.0
Alkalinity equivalent to one gram of spray material, expressed in milligrams of acid.....	0.3082%

THERE IS ABSOLUTELY NO FREE ALKALI.

Note the high percentage of POLLYSULPHIDE sulphur—the most valuable constituent of a sulphur spray.

Soluble Sulphur is not a caustic soda preparation. The above analysis shows what it is.

Three years of successful work, during which time thousands of tons have been used, sufficiently proves its value.

Write for circulars and spraying instructions.

We supply the BEST SPRAY—You must spray in the BEST WAY and at the RIGHT TIME to succeed.

PORTLAND

THE CHAS. H. LILLY CO.

SEATTLE

Arcadia Irrigated Orchards

THE LARGEST AND MOST SUCCESSFUL ORCHARD PROJECT IN THE ENTIRE WEST

7,000 acres planted to winter apples. Gravity irrigation. Located 22 miles north of Spokane, Washington, directly on the railroad. We plant and give four years' care to every orchard tract sold. \$125, first payment, secures 5 acres; \$250, first payment, secures 10 acres; balance monthly.

SEND FOR BOOKLET

Arcadia Orchards Company
Deer Park, Washington



When you get to Hood River stop at the

Mt. Hood Hotel

Occupying one-half block
With a new brick annex

ROOMS SINGLE OR EN SUITE
TWENTY ROOMS WITH BATH
SPECIAL RATES TO FAMILIES

Trains stop daily in front of the Hotel
Bus meets all boats

HOOD RIVER VALLEY NURSERY COMPANY

Phone 5634 Route No. 3, Box 227 HOOD RIVER, OREGON

Plantation four miles southwest of station, Belmont Road

We will be pleased to show you trees, apple trees that have a heritage, a quality that should be considered by everyone who plants a tree. Our trees are grown in clean bulble virgin red soil with clay subsoil, producing the most vigorous root system. Our buds are selected from the best bearing locality Hood River trees that make the Hood River apple famous throughout the world. Our trees will give you satisfactory results in vigor, fruit and quality. Ask for catalog. We guarantee our products. Apples, pears, peaches, apricots, almonds and walnuts. A complete line of the best varieties of all kinds of fruits.

H. S. BUTTERFIELD, President

W. J. ENSCHEDE, Manager

SIMONS, SHUTTLEWORTH & CO., Liverpool and Manchester
 SIMONS, JACOBS & CO., Glasgow GARCIA, JACOBS & CO., London
 J. H. LUTTEN & SON, Hamburg
 Agencies and Representatives in Every Important European Market

European Receivers of American Fruits

FOR MARKET INFORMATION ADDRESS

Simons, Shuttleworth & French Co. 204 Franklin Street, New York
 Ira B. Solomon Canning, N. S.
 Simons Fruit Co. Toronto and Montreal
 Simons, Shuttleworth & Webbing Co. 16 Clinton Street, Boston

OUR SPECIALTIES ARE APPLES AND PEARS

IF YOU WANT TO MARKET
 YOUR

FRUIT

RIGHT

ALWAYS SHIP TO

W. B. Glafke Co.

WHOLESALE FRUITS
 AND PRODUCE

108-110 Front Street
 PORTLAND, OREGON

W. H. DRYER

W. W. BOLLAM

DRYER, BOLLAM & CO.

GENERAL
 COMMISSION MERCHANTS

128 FRONT STREET

PHONES: MAIN 2345
 A 2348

PORTLAND, OREGON

LEVY & SPIEGL

WHOLESALE

FRUITS AND PRODUCE
 Commission Merchants

SOLICIT YOUR CONSIGNMENTS
 Top Prices and Prompt Returns
 PORTLAND, OREGON

STORAGE

Ship your Furniture
 to us to be stored
 until you are located

TRANSFER & LIVERY CO.
 Hood River, Oregon

The Old Reliable

BELL & CO.

Incorporated

WHOLESALE

Fruits and Produce

112-114 Front Street
 PORTLAND, OREGON

Richey & Gilbert Co.

H. M. GILBERT, *President and Manager*

Growers and Shippers of

**YAKIMA VALLEY FRUITS
 AND PRODUCE**

Specialties: Apples, Peaches,
 Pears and Cantaloupes

TOPPENISH, WASHINGTON



Stop at "The Oregon," Hood River
 Clean Rooms—Excellent Meals—One block from depot

Mark Levy & Co.

COMMISSION
 MERCHANTS

Wholesale Fruits

121-123 FRONT AND
 200 WASHINGTON ST.

PORTLAND, OREGON

A PANORAMIC VIEW

of the

Famous Hood River Valley

showing
 13,000 acres of apple orchards,
 Mount Hood, Mount Adams and
 the Columbia River Gorge.
 40 inches long Price \$1.00

SLOCUM & CANFIELD'S BOOK AND ART STORE
 Hood River, Oregon

W. F. LARAWAY

DOCTOR OF OPHTHALMOLOGY

EYES TESTED  LENSES GROUND

Over 30 Years' Experience

Telescopes, Field Glasses
 Magnifiers to examine scale

Hood River Oregon and Glenwood Iowa

BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

The History of the Apple

Hon. Curtis Guild, of Boston, Massachusetts, before National Apple Shippers' Convention, 1911

ACCORDING to Boston's own history of itself, the first apple tree planted west of the Atlantic was planted within the city limits of the City of Boston, on Governor's Island. The land was assigned by the General Court of the colony to Governor Winthrop, the first governor of Massachusetts, on the special condition that he should plant it with an orchard of apple trees, and also—shades of the prohibition Puritans look down upon us—with a vineyard, that the new colony might not be lacking for intoxicating stimulants. You may be interested to learn the exact language of the act: "On the 3d of April, 1632, at a Court of Assistance, the island called Conant's Island, with all the liberties and privileges of fishing and fowling, was demised to John Winthrop, Esq., the present governor; and it was further agreed that the said John Winthrop did covenant and promise to plant a vineyard and an orchard on the same, and that the heirs and assigns of the said John Winthrop for one and twenty years pay yearly to the governor the fifth part of all such fruits and growth as shall be yearly raised out of the same, the lease to be renewed from time to time by the heirs and assigns of said John Winthrop, and the name of the said island is changed and it is to be called The Governor's Garden." The name has since changed to Governor's Island. It seems the governor carried out his pledge and did plant the apple trees, though he seems to have made rather a failure in regard to vines.

The vineyard, it is to be feared, failed, but as a matter of fact the yearly dole of apples amounted to two bushels, which were handed over every year, not to the taxpayers but to the legislators who, in those wicked days of graft, openly consumed this property of the people during the sessions of the General Court of Massachusetts. In other words, the legislators, and not the people, received that magnificent income of the commonwealth.

To go back from the origin of apple culture in the United States to the origin of apple culture in the world is perhaps the longest step that any man was ever asked to take, for it would be necessary, almost, to go back to the time of the pterodactyls and dinosaurs to arrive at the blossoming of the first apple tree. One of the most interesting ways to study history is through etymology, through the most enduring of monuments, human speech, which carries down in every word we speak some remote fact of history, even in prehistoric times. Apples and pears

have been found with relics of the stone age. Apples and pears, dried or preserved or petrified, have been found among the relics of the Swiss lake dwellers, who formerly lived, as you remember, on large platforms built on piles over the large lakes of Northern Switzerland. Apples and pears go back to the very beginning of civilization as does the oldest of known vegetables, asparagus, the name of which, of course, is Greek, meaning simply "sprouts," probably the first vegetable known to man. The Chinese, you will remember, cook bamboo sprouts today.

Features of this Issue

THE HISTORY OF THE APPLE

OBSERVATIONS UPON STEMS OF APPLES

THE PRUNING OF TREES IS AN ART RATHER THAN A SCIENCE

PRUNING AND SHAPING THE YOUNG TREE

PRUNING FOR FRUIT EVERY YEAR

SOME FACTORS IN THE CONTROL OF PEAR BLIGHT

CULTURE AND HANDLING OF SHIPPING PLUMS

Now the word "pear" is of Greek origin. But the origin of the word "apple" is lost in mystery. Nobody knows who first invented the name, what its original significance was or what it means. We only know that "apple" is found in the German language as well as in the English language, and also, in a slightly changed form, yabloco, is found in the Russian language. The more familiar Latin name is pomum. It really doesn't mean apple; it means fruit.

In seeking to discover what were the earliest fruits known to men we find that many of the more common fruits have no remote ancestry, but appeared in comparatively modern times. For example, you will find no mention in the Bible of the word "pear" or the word "plum," which is a corruption of "prune." Prunum is the original form and plum was corrupted from prunum. You will find no mention of the word "peach" in the Bible in either sense of that much abused word. You will find no mention there even of dates, which is very peculiar, as the Jews were very close to the Arabs and one might have

supposed they would have been familiar at least with the fruit of the palm tree, but you can search your concordance through and you will find none of those fruits mentioned. In the times of the Old Testament, the Jewish people were in the enjoyment of grapes, which by the way is not the proper name of the fruit, grape simply meaning a cluster. Melons were also known to the Jewish people; so were pomegranates, meaning apples with seeds in them; so were apples—apples themselves. Of course you will remember a dozen familiar quotations in the Bible referring to apples: "Apples of gold in pictures of silver," and all sorts of references to the sweet scent of the apple and its curative properties: "Comfort me with apples for I am sick with love," and so on. Not merely among the Swiss lake dwellers, therefore, but among the Jews for hundreds of years before the coming of the Saviour the apple was a well known and much appreciated fruit.

As I said a moment ago, the most durable monument is human speech. For example, very few people who eat cantaloupes, at this delightful season of the year, know the origin of that name or where that kind of melon arose. The name tells every time you utter it. It came from a small village in Italy, Cantaloupa, where they were first raised, and in similar fashion cherries commemorate their Asiatic origin. They were not known in the days of the Bible, but were known to the Greeks and the Romans, and were originally produced and raised in and about the town of Kerasos in Asia Minor. The name plum comes from the Greek. The orange is a Persian fruit. There is only one nation in the world today that gives to the orange its original name, the Spanish. In the Spanish language the word is naranja. Naranja is a Persian name given to the orange, which originated in that nation. The peach also came from Persia. The name in Latin, persicum, means simply the Persian fruit. Nectarines were named from nectar, the food of the Gods of Olympus, being the kind of peach that was supposed most nearly to approach in taste that divine diet. Apricots—I scarcely suppose any of you would connect apricots with the word precocious, but the apricot was so called because in the early times and today it comes on the market earlier than the peach or the plum.

The apple, as I have told you, in the English language and the German language, has been given that name for such an enormous period of time, long

before any language was reduced to writing, that no one knows what was the origin of the word in that form. The Latin language had two names for it, pomum and malum. You will find malum very little used in any modern language, although melon is another form of it, meaning a large round fruit like an apple, but pomum originally applying to all fruit became more particularly applied to the apple because then, as now, it was esteemed the most valuable and healthful fruit given to man.

From that word pomum came all kinds of queer words whose origin you would scarcely associate with it. For example, a word nobody would ever associate with apples is pomade, as used in any barber shop. Yet pomade had its origin in your special and favorite fruit, the apple, because in classic times the Greek and Roman ladies used to dress their hair with pomade. Of course ladies never use that sort of thing today. Well, in those days the fashionable feminine hair dressers did use pomade, and it has been called pomade ever since because one favorite dressing for the hair and face was juice extracted from the apple, with certain other ingredients. In similar fashion are derived from the Latin name for apple the pommel of a sword and the pommel of a saddle, the round object which rises up on the saddle, and the apple-shaped ball at the extremity of the old-fashioned sword hilt. The word pummeling comes not from the apple itself but from the pommel of a sword. It originally meant to strike a man in the face with the pommel of a sword instead of slashing him with the blade. Thus, you see, in more senses than one, the apple has been at the root of discord from the days of antiquity 'til now.

Another use of the word apple is familiar to you through the old English word for tomato, "love apple." Did you ever happen to hear the reason why tomatoes a hundred years ago in New England, in fact all over the country and in old England as well, were called love apples? Some old-fashioned people, like myself, can remember the time when our mothers always called tomatoes love apples. They were cultivated as garden plants in Old and New England because the fruit was beautiful, and for years many people thought the fruit unwholesome. It was a Mexican plant in origin and utterly unknown to Europe until after the voyages of Columbus. It is an Aztec plant. The original name for it was tomatl, but the pronunciation of the final "l" was extremely difficult in Spanish mouths; so the Spaniards called it tomato.

Incidentally, of course, the wild fruit was very much smaller than the cultivated fruit is today. There was also a second Spanish name. The Spaniard uses the word "moro" in the same sense that some Americans and Englishmen use the word "nigger," a word which I hate because it is used in a derogatory sense. Yet you know some sailors of both English speaking na-

tions are in the habit of using that word to mean not merely any black person but any person that is not a white man. In the Far East sailors so designate a Hindu, for instance, or a Filipino, or any person that is not a Caucasian. In the same way "moro" in the Spanish language means any person that is not a pure-blooded white. The second Spanish name of the tomato was "the apple of the moor," or, translated into English slang (I apologize for the use of the word) "nigger apple." Very well, there is a word in French which very much resembles moro, but has a very different and much more charming meaning, "amour," and the French, hearing the name of this new fruit as apples "de moro," thought it was apples "d'amour," and consequently called the fruit "pomme d'amour," apples of love, which the English translated into love apples, an old name which has continued in the back country districts down to this very day, suggesting that if apples are active in promoting discord they also may promote love.

There are many other stories connected with the apple from the very dawn of history. Of course the most familiar apple story is of the origin of the race in the first chapter of the Old Testament, the story of Adam and Eve, where the apple is mentioned as a temptation, not merely on account of its, shall I say magical powers, but also because of its attractions as a delicacy.

In similar fashion story after story in Greek mythology rests on the apple. You will remember the particular one of the apple of discord to which I have already referred. With names changed a little it is exactly like those old German house stories, "hausmarchen," as they are called, which were collected by the brothers Grimm, where at some splendid wedding of a prince and princess the wicked fairy comes in and spoils the entire happiness of the occasion, but incidentally does some service by furnishing the plot of the story. Thus at the marriage of Thetis and Peleus the goddess Discord arrived, not having been invited to the feast, and presented as a wedding gift a golden apple on which was inscribed, "For the most beautiful," and the three goddesses, Minerva, Juno, the wife of Jupiter and Queen of the goddesses, and Venus competed as to which was the most beautiful. Even in those days bribery of voters apparently seems to have been known. Paris, you will remember, the Prince of Troy, was established as the umpire, and after they were through everybody wanted to kill the umpire in the good old style of the fans. Each goddess offered Paris a gift if he would give her the apple, and he finally chose Venus as the most beautiful because she had promised to give him to wife the most beautiful woman in the world. He chose Helen, who was the wife of another gentleman, but apparently that made no difference, and in the attempt to recover Helen the Greeks invaded Troy and the Trojan war came about. So, if the apple lies at the root of all our religion, an apple

also lay at the root of remote antiquity's greatest war.

There are many other stories I might relate to you from Greek mythology. You will remember the celebrated foot race in which one Greek woman was even then demanding to be put on a par with man. I don't think she demanded a vote, but she managed to beat all the men that competed with her until she became famous as the champion runner. Her name was Atlanta. At last she was beaten, not through man's superior skill but through man's superior guile, for Hippomenes, who competed with her in the race, carried three beautiful apples in his hand and whenever she was outstripping him he dropped an apple. The woman, in Greek as well as in Jewish history, was too much tempted by the apple to follow the straight and narrow course, and every time he dropped an apple she stopped to seize it. Thus Hippomenes won. After the race he took a terrible risk and married Atlanta, which he had defeated; so she met her match in both senses at the same time.

Another story concerns the Hesperides, once supposed to be fabulous, but now believed to be the actual continent of Atlantis and which some archaeologists have re-established in the middle of the Atlantic Ocean. The golden apples of the Hesperides, those western islands in the Greek legends, the great source of civilization where all was peace and comfort and happiness, sometimes called the Islands of the Blessed, were said to lie off the Portuguese coast to the west of what are now the Azores. The Aztecs of America had a tradition of a similar abode of the gods lying in the same place. The deep-sea dredgings of His Majesty's ship Challenger have shown that the ocean bottom at that place is a great table land, rising sharply from the lower depths nearly to the surface and covered with signs of volcanic eruptions. It is more than possible, therefore, that this continent did exist and was destroyed by volcanic eruptions and earthquakes, as we have seen smaller islands destroyed in our day.

On these Hesperides, these so-called fabled but probably existing islands in the West, there was, according to the story, a wonderful tree of golden apples guarded by a dragon with a hundred heads. The Twelfth Labor laid upon Hercules, the demigod of classic mythology, was to go forth and slay this hundred-headed dragon and to bring back some of these golden apples. He reached the island, killed the dragon and returned with the apples.

Greek and Oriental mythology and mystery are not, however, the only places where the apple has been so honored as the emblem of health. In like manner our American "superstition" with the old verse, handed down from England, "An apple a day keeps the doctor away," has an origin in no superstition at all. The use of the apple does promote health and the modern medical fact is recorded in the mythology of all kinds of nations all over

the world. In the stories of the Arabs, in the stories of the Persians, the apple always appeared as a life-bringing, as a health-giving medium; even in the old poems and songs of the Scandinavians of Northern Europe the apple appears in the same light. It was by constantly partaking of the indestructible apple of Idum that the Gods in Valhalla retained their immortality.

In historic times the crabapple, so called on account of its sour, biting taste, like the nip of a crab, was found all over Europe. It was first brought to America, as I have told you, but the real origin as far as the historians can discover was exactly where the Bible puts it, that is to say, the first apple trees were probably found somewhere in that district back of Palestine and Asia Minor, in a rough way toward Mesopotamia, where the Paradise of the Bible, as you remember, was located. Thence they were slowly spread over Europe, being taken out first, of course, by the Pelasgians, Greeks and Romans and by them extended through Europe. The Romans first brought the cultivated apple to Britain. Still the typical English apple has a French name, and therefore must have been brought in by the Normans after their invasion. The English "pipin" comes from an old French word, *pépin*, which means a seedling. From England the Puritan forefathers of New England brought their favorite fruit to these

shores, and thence the apple steadily traveled west.

It is very interesting to remember that the birthplace of the apple tree is also the birthplace of the Caucasian race, and that wherever the white man has moved west on his trip around the world, to Greece, to Rome, to Northern Europe, to England, to the United States, he carried the apple tree with him. The apple tree, in its march through civilization, typifies the advance of the white race, its original friends in its native home. Once in America, it crossed the Allegheny Mountains with the pioneers. I wonder how many of you in Ohio, in Indiana and in Illinois have read the story of Johnnie Applesseed, the crazy man of the colonial days, who traveled about with a piece of sacking as his only clothing, bare footed, respected by the Indians, who regarded him, being insane, as one stricken by the Great Manitou above and let him pass safely. Wherever he went, he planted apple seeds all through the Middle West, and the first crop of apples grew up wild and without cultivation. Crossing the Mississippi River, the apple went with the Mormons into Utah, where some of the most splendid apples raised in the world are grown today. Thence it spread to California, Oregon and the Pacific Coast, and at last, as our American white soldiers crossed the Pacific Ocean to the Philip-

pines and joined the West to the East, so the apple tree has sent its fruit across the Pacific Ocean from the West to the East and American apples raised in the most western country in the world are now being exported to Asia, returning to their ancient home—the apple tree, with the white race, having completed its march around the world.

You have been very patient, gentlemen, in listening to this somewhat rambling and I fear rather uninteresting and desultory talk. I thank you very much for your kindly reception. In these days of terror and horror and bloodshed across the seas, which cannot but have their effect also upon our own country, I can only give you as a sentiment today, one of those old songs that used to be sung in other and happier days, centuries ago, before free trade had ruined English agriculture and horticulture, and when the farm laborer in the old country as well as in New England lived a happy and contented life. Do you know the old song, "Speed the Plow":

Let the wealthy and great,
Seek splendor and state,
I envy them not, I declare it,
I grow my own lamb,
My chickens and ham;
I shear my own wool,
And I wear it,
I have birds, I have bowlers,
I have fruits, I have flowers,
The lark is my morning alarm,
So my jolly boys, now
Sing "God speed the plow";
Long life and success to the farmer!

Observations Upon the Stems of Apples

By Maurice A. Blake

THE stems of apples receive comparatively little attention from fruitgrowers and horticulturists except in identification of varieties, packing of fruit and in judging fruit exhibitions. But in all of these instances the form and length of the stems is of considerable importance. Certain varieties are more or less distinct from others because of the extra length of the stems of the fruits. Rome Beauty, for example, has a characteristically long, slender stem, while Roxbury Russet and the Newtown Pippin have short stems. In the packing of fruit in boxes, the short-stemmed apples are more desirable than long-stemmed

ones, as it greatly lessens the danger of stem bruises or punctures, and in some cases it is almost impossible to prevent some stem bruises in the packing of such varieties as Rome. It is in the judging of fruit, however, that differences of opinion in regard to the proper form and length of stem for any variety arises. The term "form" appears upon nearly every score card designed for the judging of apples. And this term, as interpreted by most judges, includes the shape and length of the stem and the form and depth of the cavity and basin of an apple, as well as its general outline. In fact variations in the stems of apples of any single variety are more or less associated with variations in the form of the cavity and sometimes of the whole apple itself.

Most judges will agree that an apple receiving a perfect score for form should be one that is exactly typical in shape for the variety. It is then only a matter of deciding what is the true form of each variety in order to secure uniformity in judging. This is where difficulty often arises, however, because there is considerable variation within the variety, and this variation is not confined to the apple as a whole, but also extends to the stems. The Baldwin, for example, may have a short, thick stem and a narrow, abrupt cavity in some cases, and a long stem

with a much wider and less abrupt cavity in other specimens. This variation is also quite common with Tompkins King and some other varieties.

If we are to judge the form of an apple, including the character and length of stem, according to the true botanical type for the variety the question then arises, why do we have Baldwin apples with different types and lengths of stems, what causes the variation and which is the normal type? Observations of a number of varieties of apples growing at the New Jersey Agricultural Experiment Station in July, 1914, revealed the following:



FIGURE 1.—Apple Cluster from Baldwin Tree. Central apple with short, thick stem.



FIGURE 2.—Cluster of King Apples at the tip of a long twig hanging downward. Apple at left with short stem was fully exposed to light, while the three apples at right with long stems were on the side of the cluster facing the tree.



FIGURE 3—A Cluster of Baldwin Apples in which the central fruit failed to develop properly. Note uniform length of other four apples.

Wherever five apples had set in a single cluster upon Baldwin the center apple of the cluster, or the one directly opposite the end of the spur upon which the cluster was borne, invariably had a short, thick stem. In some cases the stem was even decidedly lipped as illustrated in Figure 1. The apples surrounding the central one of a cluster always had longer and more slender stems than that specimen.

A further study of the matter shows that this behavior is not unusual. A normal fruit bud upon the apple commonly develops five flowers and the central one of these, if uninjured, blooms and sets fruit in advance of the others. If conditions continue to be favorable this fruit will be the largest one in the cluster for some time. The foliage and flowers of the higher forms of plants are arranged so as to secure the greatest possible exposure to light. In the family Umbelliferae the stems of each individual umbel making up an entire flower is of such length that all the flowers are in the same plane. This means that the stems of the marginal umbels must be the longer.

In some varieties of apples there seems to be an attempt to have all the apples of a cluster in the same plane, and this requires the apples surrounding the central one to have longer stems, as illustrated in Figure 1. It is evident, too, that in a cluster of apples hanging downward on a slender twig



FIGURE 4—Cluster of King Apples. Central apple of different form than the other three.

that one or more apples will be located toward the trunk or center of the tree, while others will be on the side of the cluster fully exposed to the light. It might be expected then that the apples located on the side of cluster facing the center of the tree would have somewhat longer stems than those on the fully exposed side, and this is often the case, as shown by the illustration, Figure 2. When the central apple of a cluster fails to set the remaining apples have stems of a more uniform length, as illustrated in Figure 3. With some varieties of strawberries such as Wm. Belt the first fruit of a cluster to set and ripen, or the "king berry" as it is sometimes called, is distinctly different in form from the other berries of the cluster. And this is true of some varieties of apples in a more limited degree. It can be noticed in Figure 4 that the central apple of the cluster is more roundish oblong and less roundish conic than the others. Again, in Figure 5 the central Barry apple is much less ribbed than the others.

The form of an apple, including the length and thickness of the stem, is determined to a considerable extent by



FIGURE 5—Cluster of Barry Apples. Central apple not as distinctly ribbed as other two.

its location upon the spur and upon the tree. This applies particularly to such as Baldwin, King, Chenango, Barry, King David, and undoubtedly to other varieties not observed by the writer. Gravenstein, Smith Cider, Rome and Ben Davis, however, show a much greater degree of uniformity of stem. In some seasons such varieties as Baldwin would have a larger proportion of short or long-stemmed apples, depending upon the weather, or according to whether the central apple of a cluster set and persisted or failed to do so. Botanically the short-stemmed Baldwin or King, as grown in New Jersey, is just as typical as the long-stemmed specimens and vice versa, so if we judge apples upon that basis it would seem that a somewhat liberal score for form should be allowed in judging such varieties.

Demand for Orchardists

Trained orchardists are in great demand in Oregon and in other states. Of twenty-one graduates in horticulture at the Oregon Agricultural College last year five are members of the college staff, one is assistant at the Southern Oregon experiment station, two are in-



FIGURE 6—Chenango Apple Cluster. Note the short stem of the central apple.

structors in Eastern universities, one is school landscape gardener of Alameda County, California, four are managers of departments in large commercial orchards, three are graduate students at the Oregon Agricultural College, two are managers of the home orchards and three are owners of large orchard and garden tracts. Although attractive salaried positions were offered most of the graduates not thus employed, the positions were declined in the belief that further study or working for themselves is more profitable than working for salaries.

Cooking and Serving Apples for Dessert.—It is very gratifying to "Better Fruit" to see the publications and people of the United States in general advocating the value of apples cooked and served in different ways as desserts and putting on a campaign to increase the consumption in this way because in 1912, long before the idea was advanced by any publication or taken up by any organization or the people in general, "Better Fruit" conceived the importance of developing this field for the greater consumption of apples and published a special edition of "Better Fruit" in October, 1912, showing 209 ways of serving the apple as a dessert.



FIGURE 7—Cluster of Yellow Transparent Apples. Note basin and stem of central apple.

The Pruning of Trees Is An Art Rather Than A Science

By Jay L. Reynolds, Horticulturist, Spokane, Washington

THE pruning of fruit trees is an art rather than a science, for the reason that each and every tree is a unit and must be treated as such. No two trees or units are alike, no two units requiring the same treatment. Again, different varieties frequently require different treatment. Therefore, there can be no fixed or scientific rules established which may be followed in doing the work. The result, whether for weal or woe, must depend upon the genius of the individual in charge of the pruning. An orchard may be brought to high efficiency, or its efficiency may be destroyed by proper or improper pruning. There is perhaps no other department of agriculture wherein men differ so much as in this particular line. Indeed, it would be a difficult matter to find two men who agree in every particular in the pruning of a given tree. It is a matter of judgment—of art, if you please. The building of an ideal tree is the making of a picture. It is the putting of your ideal into form, and the reason, perhaps, no two men agree in every particular in the pruning of a given tree is because their ideals are different. We all may be after the same result, but some may not place so much importance upon the formation of the tree as others, hence the difference of opinion.

Why do we prune? The answer is: To make the tree produce better fruit—not more fruit. A fruit tree if left to itself, under normal conditions, will grow thrifty and produce abundantly if never pruned by man, but the fruit will be inferior and of little or no value as fruit. Take the apple for illustration. A natural or seedling apple tree if left to itself will grow prolifically, with innumerable branches, and invariably will produce a great crop of small, gnarly apples which are scarcely fit for cider. Certainly not much use to man. But did you ever stop to think that that tree, according to the wonderful plan of nature, is not growing for man's benefit? Man is not considered in its economy. Its great purpose is to reproduce itself, which it will do abundantly if not pirated by man. If we examine these little apples, we will find they have a tough, pithy pulp or pericarp, within the center of which are plump, well-developed seeds, covered and splendidly protected by hard, bony carpels. Thus you see it is nature's plan for the tree to produce as many seeds as possible which will grow. It stores them away in the little carpel pockets in the core of the apple, beneficently surrounding the whole with stored-up food in the pericarp, which together with the food tucked away in the seed, will keep the germ in the seed moist and nourish it until it can establish its roots in the soil and send up and unfold its leaves to the sunlight and air.

Man, with all his boasted abilities, cannot produce an atom of food for himself. He must pirate it from the

vegetable and animal kingdom. In his struggle for existence, and to supply his wants and desires, he discovered that by cutting back the limbs of the apple trees, they would produce larger fruit; that the pericarp of the apple was very much enlarged and improved; that he could make the tree produce apples that were more juicy, of higher flavor and of finer texture—an apple that he could eat with very much healthful enjoyment. The chances are that, at first, the man who purposely pruned an apple tree did not know the why or wherefore of it all, but now we know a little of why we prune it, and the same will practically be true of all fruit trees.

The leaves are the manufacturing department of the plant. The plant food in the soluble elements is gathered from the soil by the plant rootlets, and conveyed in a thin, watery form called sap, up through the white or sap wood in the outer portion of the tree, to the leaves, where, by the effect of sunlight and air, a change takes place. Just what that change is is not definitely known, but the botanist tells us that here the sap is elaborated, whatever that is, by the action of the sunlight and air. Anyway, the leaves filter out the plant food from the water and the water is permitted to pass off into the air. The food thus provided by the leaves is then carried back along the branches and limbs in a mucilaginous form through the cambium layer to all parts of the tree to build up new wood growth as well as the fruit. A high grade of fruit is dependent upon an increase in the supply of sap and the healthfulness of the leaves for size, texture and flavor. Apples get their color from the sunlight and air direct. At least that is the prevailing thought. You can no doubt now see how essential it is to concentrate and increase the supply of sap and direct it into less space for the benefit of the fruit, and also to form the tree in such a manner as to expose the largest possible leaf and fruit surface to light and air.

I will mention three forms in which fruit trees may be trained, and each has its admirers in greater or less numbers, namely: The central-stem form; the double-story form, and the open-center form.

To train a tree with a central stem, with limbs radiating from it, one above another, or in any other form of a tree which has limbs so situated that when the tree is laden with fruit the limbs will close down over each other, thus shutting out the light and a free circulation of air, is but to defeat the very object sought in proper pruning.

The double-story form, or rather a tree having a double head, one above the other, formed by having one or more leaders leading up from the lower or main heading of the tree. The object sought is to increase the fruit surface on a given trunk. Personally, I don't like the looks of the tree; it is only

running the fruit up into the air and harder to get, and I question the increased fruit surface, and further, you are pretty apt to get the same result as with the central-stem tree. The limbs closing down over each other.

My ideal tree has an open center, trained in the form of a goblet. I do not mean that accentuated open top which we see in some of the orchards, but the tree trained or pruned in such a manner that it has from four to six, preferably five main limbs, at the heading of framework of the tree, with branches well directed to fill up all the spaces on the outer parts of the tree, then with secondary branches leading from these main framework limbs upward and to the center. Then you will find that when the tree is laden with fruit the limbs will bend away from each other and the tree will unfold like a flower, exposing the largest possible leaf and fruit surface to the sunlight and air. Never permit a long, slender limb on your trees. Cut off terminal ends so as to make them grow sturdy, then they will hold up their fruit without breaking and without propping.

You can learn much about how to prune your trees if you will but study them when they are loaded with fruit. In fact that is the time to pick out your ideal tree. And, remember, in picking out your ideal tree, you are not raising trees to beautify the landscape. If I am not mistaken, you are endeavoring to raise trees which will deliver the largest return in apple value. Therefore, when pruning your trees, whether they are large or small, endeavor to shape them to that ideal, which with me is one which will produce and hold up without breaking, bracing or propping, the largest measure of extra fancy fruit. And it is not so much a question of quantity as it is of quality. If you once get your ideal tree in your mind you will have no trouble in determining whether to cut this limb off or leave that one on, for the picture in your mind will determine that for you if you are an artist. And if you are not artistic enough to keep your ideal tree in your mind while pruning you will never be a good pruner.

As soon as your trees are planted, cut the top off anywhere from 20 to 30 inches from the ground, preferably about 24 inches. I allow this range of 10 inches, viz., 20 to 30 inches, because it is absolutely essential that the cut be made above a good, well developed, live bud, for, remember, the framework of your tree must form below this point, and if there is no live bud or buds below where you cut the whip off the young tree is liable to die, or if not, it is liable to sprout out at the ground, and if below the graft it will be valueless. If you have a prevailing wind in your locality, always cut to a bud on the windward side of the tree. Keep your young trees free from all such sprouts as are not intended for the heading or framework of the tree. This

can be done when they first start by rubbing them off with the fingers, but if permitted to grow until wood is formed in the sprouts by all means do not pull them off, but cut them off with a sharp knife.

Let all the limbs and leaves grow which form near the top of the tree. The more the better, except that if one limb gets so much of a start that it is hogging all the rest cut it back. The more leaves a young tree can form the greater will be its root system. A tree, like any other plant, cannot form roots and a strong body unless it has leaves to manufacture the food to nourish them, and it is a good root system you should be most interested in the first year. Therefore, let every leaf and limb grow that will grow the first year, except as above mentioned, for a plant cannot form roots without leaves any more than it can form leaves without roots.

I am in favor of low-headed trees for several reasons, but not so low that the lower branches will lie in the dust and dirt when loaded with fruit. I am in favor of a low-headed tree because, first, the branches will shade the trunk of the tree and prevent sunscald, which is a very disastrous effect we are liable to get from the direct rays of the sun in some of the hot, dry districts. Second, the lower you keep your trees the more will you facilitate the pruning, spraying, thinning and the picking of the fruit. The low measure of average expense in the doing of the work will be just in proportion to the amount of it which can be done by men standing upon the ground. And the increased average of expense will depend upon the proportion of the work which must be done upon ladders. The increased cost of cultivation by reason of the disadvantage of low-headed trees is a very insignificant item in orchard expense when everything is considered.

Pruning One-Year-Old Trees.—This is the year when you can gain or lose more time in the life of your orchard than at any other period of its existence. If the trees are started right at this age, and then kept in good form, you need never thereafter do heavy cutting, thereby losing a great growth of wood which ought to be bearing fruit. In the season of 1913 I was called upon to prune some six-year-old trees which had never had proper care, especially in pruning. In these trees fully three-quarters of the growth will have to be taken out before they can be gotten into anything like proper form for good results, and some of them can never be made good trees. The waste of such misdirected growth, if not criminal, is certainly most expensive. All lack of intelligent attention and care, when it comes to orcharding, is expensive and puts the balance away over on the wrong side of the ledger. To me, a fruit tree is a living, breathing creature. And the trees I work upon have almost as close a hold upon me as my own flesh and blood. They will quickly respond to proper care and attention, and you can train them into practically any form you want. They are like children.

If neglected, they seem more inclined to go wrong than right. How essential it is, then, that we give them good care.

This is the time, one year after the trees were set out, to commence the framework or heading of your trees. In pruning one of these trees, look at it, but endeavor to see it in your mind's eye, fourteen or fifteen years old, and start your framework to grow to what you want your ideal tree to be when it is fifteen years old. Four well-directed limbs is enough for a heading, but leave five or six if you can. Six will be better, so that if any one of them gets broken off your tree will not be so apt to be thrown out of balance. If you only have three or four limbs, if one of these is destroyed your tree may be ruined forever, unless you understand budding or veneer grafting, in which case you may start a limb where needed, but such limbs are seldom as strong as those growing out naturally on the tree. Lo, but the young tree suffereth much from the hired help, so don't let them get closer than two feet from the tree with cultivating implements. Do the rest of the cultivating around the tree with a hoe. It will pay. So my injunction is, keep a little more growth in your young trees than is actually needed for framework, so that if it meets with an accident it can be overcome without serious loss. I never expect necessarily to bring my trees to my ideal form until they are ready to bear. Then if I find I have any surplus timber, I cut it out and put my tree in trim, well-balanced form for business. If your trees are properly pruned this first year and then kept in good form, you will never need to do heavy cutting, thereby losing a lot of misdirected growth, and your trees will be thrifty and strong and should begin to produce a fine crop when four to five years old.

In pruning young trees, always avoid bad crotches. If there are two limbs growing upward of about equal size, if you try to save both, you will have a bad crotch. Make your tree out of the best one and cut the other off close up to the trunk. If you have a tree with one strong, upright shoot with weak, stunted limbs only on one side, top the shoot off, make your tree of it and remove the stunted limbs. According to my experience and observation it is a mistake to have Tom-Dick-and-Harry in charge of the pruning of an orchard of young trees, for, if the pruner does not have the future of these young trees at heart, he will not—he cannot—give them the care and attention they should have.

In the rejuvenating of old orchards, which have been more or less neglected and permitted to grow up into the air so that an airship is needed to get the fruit out of them, is the place for the artistic orchard man to show his genius. It may take three or four years to get these old trees into anything like good form, but if they are of good variety it is worth the effort. Invariably, in attempting to re-form these old trees, the orchardist is afraid to cut for fear he is going to spoil the tree. If he feels

that way about it he had better keep out. He should know "what" he is doing, "why" he is doing it and "what the result" will be and then go ahead, regardless of how devastating the work may appear to others. If an apple tree is vigorous and thrifty it is a splendid fighter. If heavily pruned it will immediately proceed to throw out new limbs from bottom to top in an endeavor to obtain a leaf surface which will balance its root system. By taking advantage of this new growth you can build practically a new tree on the old trunk by selecting and directing new limbs. It is not so much a question of the size of a limb you cut off as it is the question of what you leave just below where you cut the limb off. In taking the high tops out of these old trees, I would not hesitate to cut off a limb ten inches in diameter, provided there is just below where I cut it off a good-sized limb with plenty of branches to it. Never cut a limb off leaving a bare stub. It will die from lack of leaf surface to sustain it. In making these cuts, cut as close up as possible and make a clean, smooth cut, avoiding splits. On cutting off a large limb, first cut it off 18 to 24 inches above where you are to make the regular cut and then cut off the stub. This will avoid the possibility of a bad split. In doing heavy cutting such as may be necessary in re-forming old trees, do it early in the spring before the buds start, never after the foliage is out. Make all cuts in a slanting manner so water will run off.

All cuts larger than three-fourths of an inch in diameter should be painted and kept painted with lead paint. Whenever cracks appear, paint again to keep out the water. If water gets in and the scar is kept wet, decay will start and your tree may be permanently injured. Scars caused by having the bark knocked off, or where limbs have been broken away, should be first trimmed around the edges to make a good, smooth surface and then painted over and kept painted. All cuts and scars rightly cared for will baste over and heal up smoothly. Never use tar or any preparation having tar in it for painting of cuts and scars on trees. Always use a good quality of lead paint.

The question is sometimes asked: When is the best time for pruning? And my answer is, whenever you see an undesirable limb or sprout on any of your trees cut it off if you have a sharp tool to do it with. The "best" time to prune will depend upon what you are after. If you after wood growth, prune during the dormant season, preferably early in the spring. So-called "summer pruning" is practiced where increased fruit production is desired, or to encourage trees to produce on off years. The term is not well applied, however, for it would indicate that "any old time in summer" would do, which is a mistake. The time to do summer pruning is after the main season's growth is over and the terminal buds are formed, which will be about the latter part of August, depending,

Continued on page 31

Plums—Culture and Handling of Shipping Plums

By H. C. Blake, Vacaville, California

THIS article covers conditions obtaining only in California. I will not discuss the origin of the plum, as it makes but little difference to the practical commercial grower whether it was introduced here from Asia or Europe or some other place; suffice it to say that nearly all edible plums are found in the north temperate zone. Species of the wild plums are to be found in most all of the countries of both the north and the south temperate zones. Plums furnish us more different varieties than any other cultivated fruit, and also a greater range of flavor, texture, color, size and form. Because of the plum's great variability and the adaptation of the different varieties to different climatic and soil conditions it is the favorite fruit for the many amateur propagators in developing new varieties, and the list of varieties is now almost without number.

For one contemplating going into the shipping plum business geologic location would probably be the first important consideration; next the selection of the proper soil and, third, the selection of varieties, and this last consideration to be somewhat influenced by the markets one intends to patronize. At the present time there are but three or four localities in California that are very extensively engaged in the shipping plum business, located as follows: What is known as the Sacramento River district, comprising that portion of the river territory located between Sacramento on the north and Rio Vista on the south, and including the section around Lodi; the Vacaville district, comprising what is known as the English Hills, and the Lagoon Valley and the Vaca Valley proper; and the Hill section, comprising the Newcastle and the Placerville districts. These three localities are very extensive and successful plum-growing districts, but the conditions obtaining in each are entirely different from the other. If you should locate on the river you would find a deep, rich, sandy, sediment, loamy soil with plenty of water for irrigation. Should you locate in the Vacaville district good judgment must be exercised in the selection of a location. Secure a deep, rich, loamy soil, although if very well drained a heavier soil may be selected if other conditions are attractive. Should you go to the Newcastle district you will find a decomposed granite soil, entirely different from either of the soils just mentioned and requiring an entirely different treatment. In the past the Tragedy has been the great favorite plum on the river, but many of the other varieties succeed well. In the Vacaville district it seems that almost every variety known to mankind is being tried out to the full limit. Of the one hundred and fifty different varieties of plums shipped last season by the California Fruit Distributors Vacaville seems to have been represented in almost every variety. The Newcastle district runs

strongly to Burbanks, but follows very closely with any new-born favorite reported from Vacaville. Placerville confines her shipments almost exclusively to Ponds, known in this state as Hungarian or Gross.

When the selection of a location, soil and variety has been settled, the next important problem is the root stock, and a big problem it is, and one on which I hesitate to offer advice except in a general way. The first choice for root stock for all locations and conditions is the Myrobalan, followed very closely with the peach, but the peach requires a very well-drained soil. A most excellent stock, though but little used on this Coast, is the Marianna, a hybrid originating some years ago in Texas. It grows very readily from cuttings and does not sucker or sprout up, as it is commonly called. Great care must be exercised in the selection of a root stock. Some varieties refuse to make a satisfactory union on certain roots, and other varieties refuse to produce a crop, while still others refuse to produce satisfactory quality.

In growing your nursery stock the usual nursery practice is followed. The seedlings are budded or grafted the first season, and usually remain in the nursery until the buds or grafts are one year old, and should have attained a height of from four to six feet. Before the trees are planted in orchard form the land should be well prepared by plowing about eight inches deep with a good turning plow, and this plow should be followed in each furrow with a good sub-soil plow running to a depth of from sixteen to twenty inches. The sub-soiling is sometimes substituted by the use of dynamite, but this must be done when the ground is absolutely dry. Thorough cultivation must be practiced during the life of the tree. For planting the ground must be marked off to require from about ninety to one hundred trees per acre, the lesser number being preferable. This is usually done with a wire about two hundred feet long and having a bolt of solder at every place where a tree stake should be located. Holes should be dug of ample size to allow for the placing of the roots without crowding, and the soil well settled around each tree either by tamping with the feet or by the use of water.

The tree should be topped at once to a height of about sixteen inches. It seems almost superfluous to urge very great care in every act, but it is absolutely necessary to success. In many localities it is necessary to protect the bodies of the trees from the hot rays of the sun during the first summer season. This is done by the use of shakes or some of the very excellent manufactured tree protectors to be found on the market. During the winter, after the trees have been planted one year, they should be pruned back about one-half or two-thirds of the season's growth, leaving about three or four

branches in such a position as to form a good strong head on which to build your future tree. Until the tree comes into bearing the pruning must be done with the main idea of forming a tree as strong and well shaped as possible, and care must be exercised to keep from leaving too much wood in the tree. After the tree has come into bearing and the crop is set the most important step is thinning. Without proper thinning you cannot hope to meet the strong competition of those who do thin and produce a fine, smooth, good-sized and well-colored fruit. With some of the new and improved varieties it is necessary to thin two or three times. Unless the laborer doing the thinning is an old hand at the business it is scarcely safe to let him look at the ground under the tree after thinning or he will never get enough fruit off. Like everything else, thinning requires good judgment and experience.

As the culls from shipping plums are usually a dead loss the pruning and thinning should be done in such a manner as to reduce the percentage of culls to a minimum. As to the state of maturity for picking for Eastern or European shipment, no ironclad rule can be laid down. It is another case where the exercise of good judgment and experience is necessary, as what is proper in one locality would be failure in another. Great care must be exercised not to disturb the bloom on the fruit in handling. Great variation exists as to the proper ripeness at which to pick the different varieties, also the same varieties in different localities. The usual practice by the inexperienced is to pick too ripe and by those after the early markets is to pick too green. The matter of picking must be settled by experience with each variety in each locality. Take, for instance, the Kelsey plum. It will not color on the tree in the Vacaville district until too ripe for Eastern shipment, but will color well en route if picked hard. On the other hand, the same variety in the Lodi district will show a fine color and still be firm enough for shipment. The Climax, when picked straw color or with slight pink at the apex, will ripen and color to perfection en route. The Tragedy may be picked as soon as the blue color begins to show, or it may be left on the tree until almost fully colored and still go the long route and arrive in perfect condition. With the long list of varieties now grown in this state it would be useless for me to try to describe the proper condition of each variety in each locality in this short article.

Plums are usually packed in five-pound baskets, four baskets to a crate. The smaller varieties are usually packed three layers, 1x5 or 5x5, and in some instances with the very early ones as small as 5x6. The larger sizes are usually packed 1x5 and 1x1, and in some cases 3x1. In the extremely large sizes they are frequently wrapped in individual papers instead of being placed in layers between long strips of paper, as is the usual custom. The packing should be done in such

manner that every plum is keyed in place, secure but not bruised, and nothing but perfect fruit should be packed. The cover must not press the fruit sufficient to bruise same, but must bear firm enough to hold fruit from being displaced by rough bumps by the train en route.

The man in business tries to follow the lines of least competition. So with the plum grower. During the last few years so much advance has been made in the creation of new and improved varieties that it has stimulated the grower's desire to get his plums in market when the market is as bare of fruit as possible. Under existing conditions this is secured by getting his fruits to market ahead of others. Many standard varieties now considered comparatively old will always command a place on the market, such as Tragedy, Burbank, Wickso Climax, Hungarian Grand Duke, Giant and Diamond, but many new and valuable varieties are now competing for first place on the list of valuable shippers. Prominent among these are the Beauty, Formosa, California or Vacaville, Caviota and many others, some unnamed, which I am not at liberty to discuss. One very promising new variety originated by my neighbor, Mr. Burton, which he has called the Earlianna, was entirely harvested by the first of June. It is a good-sized plum, splendid color and shape and an excellent plum for the table, a good bearer and an AI all-around early blue plum. In conversation with a neighbor recently, who is growing over one hundred different varieties, he remarked that he would confine his energies in the future to about three varieties, all of them new, such as the Beauty, Formosa and California Blue or Vacaville; and after inspecting his orchard his judgment seemed to me to be wise.

From our experience in the past we feel that the possibilities for improved varieties are almost unlimited. As we are now growing many times as many varieties as are needed, and so many as to keep the buyers at sea as to what is being offered them, I think it wise to eliminate all of the second-rate and third-rate varieties, except where absolutely necessary to retain them for pollenizing purposes. On account of the very great variation in the time of blossoming in different seasons, varieties requiring special pollenizing are rather unsatisfactory. A very unsatisfactory condition obtains on this Coast in the naming of our fruits. It is bad enough to have to be confused with a thousand or more distinct varieties, but when we add to this trouble by insisting on calling the same variety by four or five different names we are surely in need of a guardian.

And now in conclusion, my advice to those contemplating the shipping plum business is to go slow and to investigate thoroughly first, and to be satisfied with nothing but the best conditions, and then with care and good judgment you are pretty sure of a success that will net you a good income. We now have the United States and

Canada for a market, as no other portion of America grows successfully the fine varieties of plums grown on the Pacific Coast. As soon as the Panama Canal is opened to traffic you may annex the markets of Europe with an excellent refrigerator steamer service direct from your own great City of San Francisco.

Deterioration of Heaters

The Citrus Protective League has just received the following letter from Mr. C. C. Teague, general manager of the Limonera Company, Santa Paula, in relation to the heavy depreciation in oil pots in citrus groves due to lack of care. Mr. Teague has had more experience in the handling of frost-fighting equipment in citrus groves than any other man in the state, and this letter from him should be read and acted upon by every grower who has installed frost-fighting equipment. On account of the large amount of money invested in oil pots and the great importance of keeping this equipment in first-class working order for possible use in other years, we are asking the co-operation of the newspapers in giving publicity to the letter from Mr. Teague which follows:

"I have just returned from a two-days' automobile trip through the principal citrus districts of Southern California, and the thing that impressed me more than anything else upon the trip was the tremendous loss that the growers were having through neglect of the care of their oil pots, and it seemed to me to be worth while to try and bring them to a realization of what this means. It has been estimated that the citrus growers have over two million dollars invested in oil pots. In the two-days' trip before mentioned I only saw a very few cases where the pots had been coated with asphaltum or paint to prevent rusting, and as a consequence nearly all of the pots were rusting badly, and in my opinion will be a mass of junk in from two to three years if this is not remedied—probably in two years. The new type of pot should last at least ten years, and probably fifteen, with proper care, as the burning action is not hard on them until they are burned entirely out, which will rarely be necessary. It then is extremely important that the oil pots should be kept thoroughly painted. In my opinion, if the present method of care is continued the growers will meet with a loss of four or five hundred thousand dollars a year in unnecessary depreciation, and at the end of two or three years will be without adequate frost-fighting equipment, and if a freeze comes along will again be badly injured.

"We have dipped all of our pots in asphaltum paint before putting them out in the field, and if it is necessary to burn them so as to melt off the protecting paint, we then send men around with pails and brushes and touch them up where it is needed. The material that we use is cheap and is made as follows: We take asphaltum and place it

in kettles and melt it, then remove it from the fire and after it has stopped boiling dilute it in the proportion of one gallon of stove distillate to ten pounds of asphaltum. This stock mixture is then put in barrels ready for use. If it proves too thick to apply well with brushes, it can be diluted with engine distillate or gasoline to the required consistency. The paint herein described costs less than ten cents per gallon."—F. O. Wallschlaeger, Secretary Citrus Protective League of California.

Handling By-Products

Means of converting second and third-grade fruit and vegetable products into marketable goods are the subjects of a new bulletin on fruit and vegetable by-products, written by Professors C. I. Lewis and W. S. Brown and issued by the Extension Division of the Oregon Agricultural College.

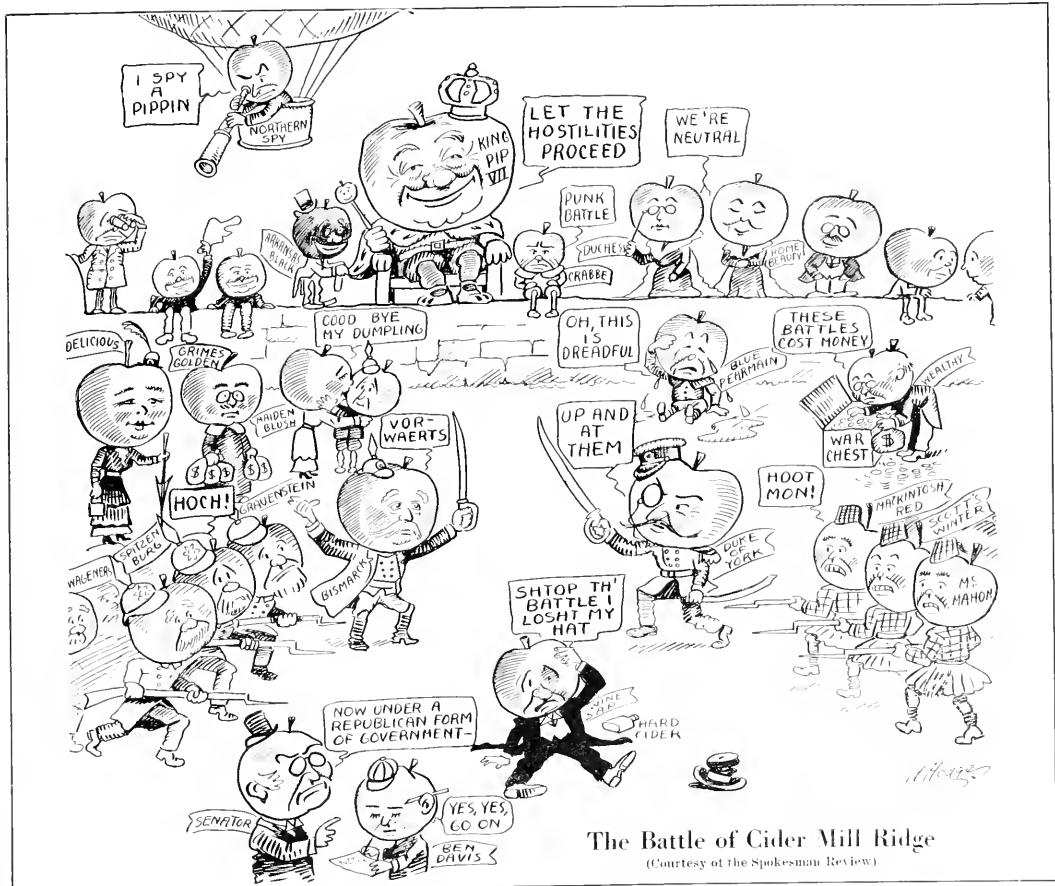
"It is comparatively easy to sell high-class fruit or vegetables," says the bulletin. "They are in such demand and bring such high prices that they justify high cost of production, expensive freight rates and higher charges for distribution and selling. Our problem is thus seen to be concerned not so much with fancy produce as with second and third-grade products—the low grades, so to speak. These grades will not justify a heavy outlay. Furthermore, the amount of them is increasing each year and the bulk of this fruit in the Northwest is becoming enormous. How best to utilize such products is testing the greatest brains in the country. We must attempt to utilize all our products in some form or other and reduce the enormous waste now taking place. We believe that the fruitgrowers' associations and the general selling agencies are going to find it to advantage to handle various fruit products. The best grades of fruits can undoubtedly be best disposed of in a fresh state, but the other grades in many cases will bring more satisfactory returns when utilized by the canneries, vinegar works, evaporators or jelly factories."

The bulletin deals with the by-products plant as an adjunct to fruitgrowers' associations. In it are considered the problems of the amount of capital necessary, the best system of organization and the technique of handling that is bringing the best results.

**Orchardist
Supply House**

Franz Hardware Co.

Hood River, Oregon



The Battle of Cider Mill Ridge

(Courtesy of the Spokesman Review)

Some Factors in the Control of Pear Blight

By P. J. O'Gara, Chief in Charge of Agricultural Investigations, American Smelting and Refining Company, Salt Lake City, Utah

THE interesting subject of pear blight and its control has been so frequently discussed before the meetings of the various horticultural organizations of the Pacific Coast and Pacific Northwest that I take it for granted that practically every grower of pome fruits fully understands the nature of this disease, which should be properly termed the Bacterial Blight of Pome Fruits. Besides attacking all pome fruits in a more or less serious manner, the bacterial organism of pear blight also attacks, in a limited way, various members of the stone-fruit family. I take it for granted that the fruitgrowers who have heard the subject of pear blight frequently discussed know of its early history and native origin, namely, that it is a strictly North American disease and was first noted on the highlands of the Hudson, New York, by William Denning in 1780. Until a few years ago the disease was confined to the North American continent, but it is now

known in two or three parts of Europe, having been noted as occurring there by certain agricultural explorers of the United States Department of Agriculture. However, from all accounts of its occurrences in Europe we are led to believe that it has not as yet become a serious menace to fruitgrowers. With this introduction, we will proceed to discuss some of the important factors in the control of a disease which in many ways is more destructive than all the other diseases which the fruitgrower must combat.

Cause of Serious Infection.—In order to have a serious pear-blight epidemic the following conditions are necessary: (1) The germ must be present; (2) insect or other agencies for the "sowing" or spread of the blight organism must be plentiful and active; (3) conditions for the best development of the germ after it has been "planted" must be favorable. Another factor, and an important one, might be added, and that is lack of adequate

means for the eradication and control of the disease. It is easily seen that there can be no infection if the blight germ is not present, and, furthermore, there can be no epidemic even though the blight germ be present providing the other factors are wanting. Those who have had experience with pear blight know that it will attack all species of the pome family, and that any part of the tree may become infected,—blossom, twig, limb, body, crown, root or fruit. Such expressions as "blossom blight," "twig blight," "body blight," "collar-rot phase," "root blight," "fruit blight," "fire blight," etc., are all in a measure misleading, as fruitgrowers are often mistaken in thinking that these terms indicate a different disease in each case. The term "fire blight" is not a good one, for the reason that fire-scorched trees do not resemble trees badly blighted by the blight germ. Furthermore, serious infection which may result in the death of the tree may not show any indica-



Who would do your work if you suffered accident? Write for book that explains the splendid *hand-insurance* in Hansen's—the mittens and gloves made of softest and strongest leather known.

Hansen's Gloves

They fit snugly, with ease and comfort, outlast many other of the bulky, flimsy kind, and the saving in time and health is beyond price.

Write for Free Book

Gloves for every work, driving or sport. At dealer's or write us.

O. C. HANSEN MFG. CO.
130 N. Detroit Street Milwaukee, Wis.

tion of the so-called "fire blight." This is true in serious crown and root infections. The term "collar-rot phase," as used by an occasional writer, is a notably bad one, simply because the germ does not produce a rot. The germ causing pear blight does not belong to the rot-producing group of plant parasites. Even the term "pear blight" is not good; it would be best to make use of the term "pome blight" or, better, "bacterial pome blight." There are certain other diseases of pome fruits which often produce effects somewhat resembling the bacterial blight, and therefore it would be much better, in speaking of blight, to qualify it. If we would use the term "bacterial blight" in the case of pears, apples, quinces and other pome fruits we would not fall into error.

As stated above, in order to have a general infection or, for that matter, any infection, the blight germ must be present. It has been demonstrated that this germ will live during the dormant season of a tree in the cankers formed by the previous year's infection of limbs, bodies or roots of pome trees. The germ "holds over" or lives over in no other place. No part of the pome fruit trees may be free from infection. The germ is carried from these centers called "hold overs" by various agencies, principally insects. However, birds and other animals, even man himself, may be distributing agents. A very large number of species of insects and their near relatives have been found to

be carriers of the contagium vivum, the pear-blight bacillus. Not only flying insects have been found to be effective in spreading infection, but also many insects and insect-like species, which do not depend upon flight have been found to be particularly dangerous. While the odium of the fruitgrower has been heaped upon the honey bee, it must be remembered that this beneficial insect is active during a relatively short period of the season, that is, during the period of blooming. Certainly the honey bee spreads infection at this time provided that oozing hold-overs are present in the orchard, or at least in the neighborhood. It has been particularly noted that serious blossom infection in pears, especially the early-blooming varieties, rarely occurs. The reason for this is because at this time, when the days are relatively short and moderately cool and the nights relatively long and generally cold, the hold-overs are not actively oozing. The important factor, namely, the presence of active organisms is wanting. Later, when the late-blooming varieties of pears and apples are blooming, conditions are favorable for the germ and all hold-overs in pome-fruit trees generally become active because of the favorable conditions for growth. The number of days in any season when the honey bee is active in the orchard may be known by noting the number of days covered by the blooming period. When the blooming season for orchard fruits is over, the honey bee will be found to be busy on a different variety of flowering plants. It is well known that bees do not visit more than one group of flowering plants at the same time; that is to say, the bee works wholly upon the apple during its season, then turns to some other plant, and then another and so on. Even the amateur bee-keeper knows that honey of different color, flavor and quality comes from different plants.

It is well known that the greatest amount of infection may occur, and usually does occur, at a time when bees could not have carried the infection. Of course, the primary infection noted in some of the blossoms was probably carried there by the bee, but subsequent infections of the later blossoms, twigs, shoots and watersprouts are certainly caused by other agencies. Biting and sucking insects are here responsible. Aphides are notably bad as carriers of the pear-blight germ. Upon the control of blight, therefore, depends in a great measure the control of insects. However, in the first place all sources of infection, namely, the hold-over cankers should be carefully removed. This is a difficult thing to do, for the reason that the most careful worker will often miss hold-over blight, especially if the hold-over occurs in the body or root system of the tree.

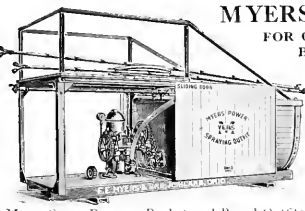
Resistance and Susceptibility.—We know that there are varieties of pome fruits which are quite resistant, others that are very susceptible to the pear-blight disease. We often hear of varieties being "immune"; but, so far, no

species of the pome family has been found immune to blight. There are various degrees of resistance, and that is about all that can be said. Very often the attention of the fruitgrower is directed away from resistant varieties by the statement that they are so resistant that blight will not hold over in them. However, every fruitgrower knows that our cultivated varieties of pome fruits are not growing on their own roots. For instance, a Bartlett pear is not all Bartlett; a Newtown apple is not all Newtown, and the same may be said for any other variety. Until recently no attention was paid by nurseriesmen to blight-resistant stock upon which to work our commercial varieties. In the main, our commercial varieties of pears are all worked on French stock which is very susceptible to blight. Our commercial varieties of apples are also worked on seedling stock which is never selected for its resistance. From this it may be readily seen that, although the variety top-worked on the stock may be quite resistant, the stock or root being susceptible renders the tree unsafe from the blight standpoint. It is often said that a chain is no stronger than its weakest link, and, in the same way, any variety of pome fruit is no more resistant than its least resistant part, and if this part be the root system so much the worse for the tree. If the root system is very susceptible, the tree may be lost, although apparently there may have been no infection noted above the graft union. I have seen the worst cases of blossom and twig infection in very resistant varieties where not a single hold-over could be found in the orchard itself or in the immediate vicinity so far as the examination above the graft union was concerned; however, by noting the infection centers, examinations of the growths and roots below the ground showed the presence of hold-over blight in certain trees. In the case of the Newtown (and I am only using this variety as one example), which is quite resistant under average conditions, I have found the most serious hold-overs in the roots (stocks). Here, then, is an important factor in the control of blight. Not only should the parts above the ground be examined, but the crown and roots of a tree should be bared and inspected so as to be sure that no hold-over exists there. There is no mystery about crown and root infection; certain insect agencies work as readily under ground as others do above. Furthermore, in cases of severe blossom, twig or limb infections, these may be carried down to the roots from above by rain. I have been able to demonstrate the presence of blight germs in droplets of rain water trickling down the trunks of infected trees. Referring again to the matter of insect control, it may be said that the persistent use of insecticides, such as some of the better sulphur compounds, arsenicals and nicotine compounds, together with sticky bands, will go far to reduce the amount of summer infection. It has been particularly noted in certain districts on the Pacific

Coast that the orchards freest from blight infection were those where insects were kept well under control.

The Use of So-Called Remedies.—Tree medication has always been a favorite hobby with those who are ignorant in matters of plant physiology and pathology. Theoretically, there may be some basis for this kind of work, but the practice of controlling blight by the use of the hypodermic needle or any other method for the introduction of "dope" into the tree has proven unsatisfactory. Occasionally we find a man who is absolutely sure that he has prevented blight infection by boring a hole to the heart of a tree and filling it with such insolubles as sulphur, charcoal and calomel. However, had he looked about for another explanation as to why his experimental tree did not blight he would have easily found it. In my investigation work covering a long period of years, I have used all sorts of chemicals and chemical combinations in various ways, but up to the present time no promising results have been forthcoming. A drowning man will grasp at a straw; we have grasped at everything, whether it showed promise or not. We are able, by the use of chemicals applied to the soil, to inhibit the growth of the tree by reason of the fact that the root system of the tree will take up from the soil any water soluble substances. But, inhibiting the tree's growth is not, after all, controlling blight. Lack of a reasonable amount of vegetative vigor will result in the production of fruit of inferior quality. The work of pear-blight control must depend, at least for the present, upon the methods which have been worked out, namely, careful eradication of hold-over blight, through disinfection of instruments and wounds, and last, but not least, the control of all insect agencies which aid in spreading infection. During the growing season, blight should be removed whenever it appears; and living infection should always be considered a center for further spread of infection.

Breeding and Selection.—Breeding and selection, we hope, will in time solve the question of blight control, but for the present we must adopt the best practice known to save the pear and apple orchards now in existence. The promise that in perhaps ten, one hundred or one thousand years we will have commercial varieties of pome fruits at least as good as the best varieties now grown and wholly resistant to blight is small comfort to the man who must depend upon his orchard for his present livelihood. The man must know what to do now to save that which means to him his all. There may be some of my readers who would like to tell of the wonderful work now being done along the lines of selection and breeding of pome fruits resistant to blight. I wish to say that ever since the life history of the pear-blight germ was first fully understood important work along this line has been in progress. The work now being carried on by certain individuals savors of nothing new, and besides this work is very limited



MYERS POWER SPRAY RIGS
FOR OPERATION BY GASOLINE ENGINES.
Built in Three Styles and Five Sizes. All
Ready for Wagon Trucks and Engine.

Have you large orchards to care for or do you do custom spraying?—In either case it will pay you to investigate **MYERS POWER RIGS**. You do not have to buy a new gasoline engine or special wagon trucks—They are built for any engine or trucks—and are high efficiency, large capacity, economical to operate power outfits fully equipped with nozzles, hose, extensions and all fittings ready to spray. Write us about them and our catalog for hand operation. Catalog by return mail.

Myers Spray Pumps—Bucket and Barred Outfits—with name of dealer.
ASHLAND PUMP AND IRON TOOL WORKS. F. E. MYERS & BRO.
120 Orange St., Ashland, Ohio

in its scope as compared with work that began more than a quarter of a century ago, and which as yet has not produced any startling results. Do not get excited over the persuasive eloquence of the tyro who has had little or no experience in selection and breeding, and who has not had time to demonstrate whether or not he has anything in sight. The development of commercial varieties of pears equal to our well-known varieties and at the same time resistant to blight is an ideal we have been striving toward for many years. Many European-Oriental hybrids of considerable resistance have been produced, but their quality does not compare with even our mediocre commercial varieties of European blood. I have in mind such varieties as Kieffer, LeConte, Garber, Smith and others. Although the above-mentioned varieties are being grown in considerable quantity, nevertheless we do not hear of their quality as compared with our well-known Bartlett, Anjou, Bose, Comice and Winter Nelis.

Cause of Pear-Blight Epidemics.—Every fruitgrower has noted that blight is more prevalent some years than it is others. It has been noted that, although little effort had been made toward eradication during the previous dormant period, meaning that much hold-over was left, a relatively light infection occurred the following season. On the other hand, it is has been found that, although considerable effort had been put forth in eradicating hold-over blight, the following season resulted in much infection and serious losses. To some, this is an apparent paradox. The question is often asked as to why we have epidemics of pear blight. This question is no more difficult to answer than the question as to why we have enormous yields of fruit or harvests of grain. No farmer expects his crop yields to be the same from year to year, at least if he expects this he does not often realize it when the harvest is over. The answer to the question as to why we have more bountiful crops one year than another is usually given by the average man in a single sentence, namely, that the conditions were more favorable. The reason why we have occasional phenomenal yields is because the conditions for plant growth have been unusually good. In the case of a heavy wheat crop the seed was put in at the right time, and in the proper amount, the soil had been previously well pre-

pared, climatic conditions during the growing and ripening season were favorable, and more than likely good judgment was used in taking advantage of favorable natural conditions. It must be remembered that the pear-blight germ is a plant which depends upon favorable conditions for its best development; it must be "planted" on the right soils, and the conditions for its maximum growth and development must be favorable, as in the case of the wheat plant. It is true that epidemics of disease, whether in animals or plants, are quite frequently preceded by periods in which there has been a lack of thoroughness in control work. Very often the absence of serious infection and the consequent absence of disease results in inducing a spirit of carelessness in the matter of careful inspection and eradication. The present outbreak of the foot-and-mouth disease in the United States among stock is a good case in point. The last serious outbreak occurred a good many years ago, and as time went on watchfulness gave way to carelessness and to lax methods of inspection and quarantine.

While it is known that disease-producing bacteria may be more virulent at one time than another, just as seeds may be more or less viable, nevertheless the conditions for a disease-producing organism's development must be favorable or it will not develop so as to cause an epidemic. However, it is for the epidemic which is liable to occur that we must be prepared. It must be remembered that the pear-blight germ is a plant, and that, as a plant, it will not make its best growth where conditions are below normal. Change these conditions for the better and maximum growth or development will result. If the fruitgrower will remember that the pear-blight germ is a plant, he will understand that the same conditions of environment which influence the growth and development of his cultivated plants will also influence the growth and development of the pear-blight germs. Hence, there will be epidemics of pear blight as there will be "epidemics" of good fruit crops.

WILL YOU TAKE ORDERS ?

Make over \$20 to \$60 every week demonstrating our
1914 Model Street Automobile Hand Tools,
Lifting and Piling Jack, Wire Stretchers, Sizer and
Washer, Post and Stump Puller, Tire Tightener, Cable
Washer, Press, Vice, Hoop, Wrench, etc. Operate auto-
matically. Has power of 40 lbs. Guaranteed for life.
Save time—Demonstration—**Demonstrator**
Issued. Credit given. Write for factors & prices of R.
CHAS. E. BENEFIELD CO. 317-8 Industrial Bldg., Indianapolis, Ind.

BETTER FRUIT

HOOD RIVER, OREGON

Official Organ of The Northwest Fruit Growers' Association
A Monthly Illustrated Magazine Published in the
Interest of Modern Fruit Growing and Marketing
All Communications Should Be Addressed and Remittances
Made Payable to

Better Fruit Publishing Company

E. H. SHEPPARD, Editor and Publisher
H. E. VAN DEMAN, Contributing Editor

STATE ASSOCIATE EDITORS

OREGON

C. I. Lewis, Horticulturist, Corvallis
H. S. Jackson, Pathologist, Corvallis
H. F. Wilson, Entomologist, Corvallis

WASHINGTON

A. L. Melander, Entomologist, Pullman
O. M. Morris, Horticulturist, Pullman

COLORADO

C. P. Gillette, Director and Entomologist, Fort Collins
E. B. House, Chief of Department of Civil and Irrigation
Engineering, State Agricultural College, Fort Collins
E. P. Taylor, Horticulturist, Grand Junction

IDAHO

W. H. Wicks, Horticulturist, Moscow
W. S. Thornber, Horticulturist, Lewiston

UTAH

Dr. E. D. Ball, Director and Entomologist, Logan
Leon D. Batchelor, Horticulturist, Logan

MONTANA

O. B. Whipple, Horticulturist, Bozeman

CALIFORNIA

C. W. Woodworth, Entomologist, Berkeley
W. H. Voick, Entomologist, Watsonville

BRITISH COLUMBIA

R. M. Winslow, Provincial Horticulturist, Victoria

SUBSCRIPTION PRICE:

In the United States, \$1.60 per year in advance
Canada and foreign, including postage, \$1.50

ADVERTISING RATES ON APPLICATION

Entered as second-class matter December 27, 1906, at the
Postoffice at Hood River, Oregon, under Act
of Congress of March 3, 1879.

By-Products.—In the year 1912 when the crop of apples was very heavy and the prices low, the editor of "Better Fruit" saw the necessity of only shipping high-grade fruit to Eastern markets because the low grade did not justify the expense necessary in marketing it. In other words, it did not pay a profit. Consequently after giving the matter a great deal of serious thought, it seemed wise to take steps to encourage the development of vinegar factories, cider mills, evaporators and factories for making various by-products. After several months of investigation a number of people were found who had had practical experience and knowledge in this line of business, and from them was secured a number of excellent articles of a practical nature in reference to the by-product industry. When all of this data was secured, it was published in a special edition of "Better Fruit" in May, 1913, and called the "By-Product Edition." The stimulus was quickly felt by fruitgrowers of the Northwest and they were quick to realize the value of this suggestion. Consequently this subject was discussed very vigorously and very generally by the fruitgrowers of the Northwest during the year 1913. Officers connected with the National Apple Show at Spokane have always shown their progressiveness in assisting the fruit industry in every way possible and they realized the importance of this industry, and therefore accorded by-products a special place on the program in the conference of growers. The result was that the movement immediately jumped into popularity and resulted in a committee being appointed to carry on research work along this subject. This committee has done some splendid work and

accumulated an immense amount of information and data of great importance. All of this was embodied in their report which was given to the fruitgrowers at the Seventh Annual National Apple Show in Spokane from November 16th to 21st. In the meantime, in April, 1914, "Better Fruit" published another special edition along this same line. After the report of the committee was received and accepted a new committee was appointed to carry on this work, including many of the old members of the original committee. It seems to be the consensus of opinion that a number of by-product factories can be built throughout the Northwest, and will be built, either co-operatively by the growers themselves or perhaps in some localities by individuals or privately incorporated companies. It is the desire of the committee to assist in building by-product factories and to give all information possible. In addition to this, the committee believe that some central marketing agencies must be utilized or established to handle the output in order to obtain the most satisfactory results for the by-products produced. This can be done much better by a concern handling an immense volume of this line of business than it could be done by a small number of individual concerns. The overhead expense of selling would be reduced by handling the output through one large concern and the field could be more thoroughly covered by one concern with a large number of salesmen than it could by a lot of individual concerns. In addition to this, one large concern can advertise and build up the trade and create the demand more satisfactorily than a number of small individual concerns. There are growers in many districts who believe in co-operative by-product factories. There are some who believe in privately-owned by-product factories. The solution of this problem seems to be one that will depend a good deal on circumstances and the condition of the growers financially. Without question a larger proportion of the growers believe in co-operative work. If they are in a position to establish a co-operative by-product factory all well and good. Good judgment would dictate the advisability of going ahead. Where growers are not able to finance a co-operative institution without question the advisable thing to do will be to encourage a privately incorporated institution to take care of the waste and convert it into by-products. Every grower always has, and always will have, a percentage of cull apples that are hardly high enough grade to justify packing, which will vary perhaps from ten to twenty per cent. On younger orchards the percentage might be smaller. At the present going prices of cull apples per ton of \$6.00 in some districts this would amount to \$10.00 or \$20.00 per acre to the fruitgrower, and it seems safe to say in many cases that it would equal the maximum figure of \$20.00. The grower, in harvesting the crop, has to pay the expense of picking, grading,

etc., and whatever he receives from the by-product factory for his cull apples is money saved. A man with forty acres, with a good by-product factory nearby, will secure an income of \$800 more than he would if he had no place to dispose of his cull apples. The fruit industry of the Northwest is probably somewhere in the neighborhood of \$5,000,000 to \$10,000,000,—an immense sum. A comparison with California will give some idea of the opportunities in the Northwest for disposing of their fruit in other ways than selling it fresh. The canned fruit industry alone in California amounts to between \$25,000,000 and \$30,000,000. While the editor has never seen any figures as to the value of by-products in California, he has been informed that the total amount received in California from other sources than fresh fruit, such as canned fruits, evaporated fruits, raisins, wine, etc., amounts to approximately \$75,000,000 or nearly fifteen times as much as the fresh-fruit industry of the Northwest.

Reducing the Cost of Apples From the Packing House to the Retailer.—The editor of "Better Fruit" took part in this discussion at the National Apple Show at Spokane. Considerable progress has been and is being made along this line. The first item of consideration in this subject was reducing the harvesting cost, which will be explained in detail in a separate article in this issue. The second important feature in the discussion pertained to reducing the selling expense of our selling organizations. This discussion was ably handled by the editor of the Spokesman-Review, a man very highly esteemed by fruitgrowers in the Northwest, well and favorably known by all. His idea was that owing to the large number of selling concerns already in existence in the field, that there must necessarily be a large duplication of overhead expense. With suggestion and advice he conveyed the idea that the next important step in the Northwest would be for the fruitgrowers to reduce the number of marketing concerns. There are several methods of marketing in vogue at the present time; first, the co-operative association, owned and controlled by the grower; second, marketing concerns which are incorporated with a definite capital, not necessarily confined to growers; third, by private concerns which are engaged in handling fruit for the fruitgrower at so much per box, or sometimes buying the same outright from the grower; fourth, by dealers who handle large quantities of apples for individual growers, either buying the same direct or making an advance and selling on a consignment basis; fifth, individuals who either sell their crop direct, accept an advance on consignment or place it on consignment without an advance. Some of these different marketing concerns are more or less similar in their policy and in all probability could be harmonized with others in existence. In other words, it would seem possible that certain

LILLY'S
208 PAGE ANNUAL—
Ready Early In January
 — Mailed FREE to
 Anyone, Anywhere.
 Shows Seeds, Poultry,
 Bee and Stock Supplies,
 Sprays and Fertilizers.
 The CHAS. H. LILLY CO.
 Seattle and Portland

ANNUAL

groups could be harmonized under one policy and other groups harmonized under another policy which would reduce the number of marketing concerns. This suggestion may not carry out the idea advanced by some that all of the fruit could be marketed through one agency. This may be done; there are many who believe that it could be done and there are others who believe that it is doubtful that the fruit in the Northwest could ever be marketed entirely through one concern, and even go so far as to say that if it was such an arrangement would be indefinite in its continuance. However, be all that as it may, it seems certainly advisable to reduce the number of marketing concerns.

The January edition of "Better Fruit" will be devoted to spraying and will contain everything that is interesting, valuable and new in reference to spraying that is at all recent. In addition to this, it will give publicity to the Manufacturers' and Land Products Show in Portland, with illustrations of some of the exhibits, and also will feature the National Apple Show at Spokane with a story and illustrations. Publicity in "Better Fruit" in reference to these shows will be confined principally to the fruit displays, for the reason that "Better Fruit" deals almost exclusively with fruit.

Cost of Harvesting.—In harvesting apples there are ten items of expense,—the price of the box, hauling knocked-down boxes to the orchard, making up, picking apples, hauling apples from the orchard, grading, packing, extra packing house expense, nailing up and hauling to the depot. It is not often that growers can give you an itemized expense per box along this line. Every business man connected with a factory aims to ascertain the cost of each particular part of the work. This is absolutely necessary in order to manufacture at minimum cost. It is equally important that the grower, too, should know the actual cost of each one of these items in order to see where a saving can be made.

A few years ago the editor of "Better Fruit" published figures which resulted in much discussion and much good resulted. They enabled many orchardists, by comparison, to ascertain where the expense was too high and thereby

reduce the harvesting expense. Below are given the items of cost of each one of these transactions on a crop of seven carloads, the total cost being 36 cents per box:

(1) Box	\$0.095
(2) Hauling k.d. boxes to orchard.....	.005
(3) Making up box.....	.01
(4) Picking .....	.0863
(5) Orchard hauling .....	.0116
(6) Grading .....	.0168
(7) Packing .....	.04
(8) Extra packing house expense.....	.005
(9) Nailing up .....	.01
(10) Hauling to depot.....	.017
	<hr/>
	\$0.3277
Paper .....	.033
	<hr/>
	\$0.3607

One grower claims to have harvested his apple crop at 27 cents per box. Others state their crop cost as high as 50 cents to harvest. In the itemized list given above the picking expense can be reduced to 4 cents. The picking cost is especially high in this case, as the crop was scattered over a large acreage and the yield light. A number of growers have contracted with their help to pick their apples at 3 cents per box, loose, which is equivalent to about 4 cents per box packed. The grading cost can easily be reduced under favorable conditions to 3 cents per box, and possibly may be done for 2½ cents per box. A number of growers have employed packers at \$2.50 per day with the understanding that the packer must pack 100 boxes in order to earn \$2.50, reducing the packing cost 2½ cents per box or less. Nailing up can be reduced to about three-quarters of a cent per box.

To summarize, a saving of picking can be made on above itemized expense of.

On grading	\$0.0163
On packing .....	.0168
On nailing up.....	.015
	<hr/>
	.002

Or a saving of.....\$0.0801

Thereby reducing the cost to 28 cents per box, which apparently seems to be what would be considered the minimum.

More Profit in Apples.—Another editorial in this issue shows where a reduction in harvesting can and is being made; another editorial points a way to reducing the selling expense of our marketing concerns by reducing the number and at the same time securing a better price. To this must be added another important feature in connection with the cost,—that of reducing the cost of growing or producing the crop. In these three items considerable money can be saved the grower, but perhaps more important than this in enabling the grower to make more money is the importance and the necessity of reducing the retail price to the consumer. In the year 1909 the editor of "Better Fruit" was invited by Professor Thatcher, then Director of the Experiment Station at Pullman, Washington, to accompany the lecturers on their institute meetings throughout Yakima Valley, which covered the territory from one end of the valley to the other, and lasted a week, consisting of eighteen different meetings. At that time the Northwestern apples were selling from 75 cents to \$1.50 per dozen, retail. The editor



This man believes in enjoying life. He lives in the country but he has the advantage of the city. His home is equipped with kitchen sinks, hot and cold water, modern bath room, sanitary toilet, wash room. His garden has taps here and there and his dairyhouse and barn has running water where needed. It cuts down his own work and very much reduces the work of the women folks. He likes it, his wife likes it, and his children like it. He had the goodness of judgment to invest in a

Mitchell

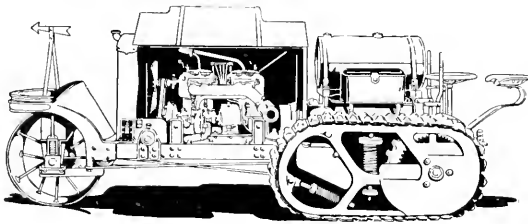
WATER SYSTEM

Hundreds of these systems are making country homes brighter and more comfortable. They are economical, dependable, simple. If you have a well, cistern, spring or creek on your place you can have running water in your home. We guarantee satisfaction.

Now the chap below believes in "getting along with things as they are." His wife totes water from the well, lits the pail a hundred times a day. He spends hours pumping water for stock when he has other things to do. His children leave for the city as soon as they can get away where they can "at least have a few comforts." Don't you think you'd better take our tip and send your name and address for our Free Book No. W15 called "Through the Eye of a Camera."

Mitchell, Lewis & Staver Co.
 Portland, Or.
 Spokane and Boise





built like a high grade auto

Throughout The Yuba Ball Tread Tractor an endeavor has been made to gain greatest strength with least bulk and weight.

It was the adoption of this policy that made the high-grade automobile of the present day dependable, simple to operate and cheap to maintain.

THE YUBA BALL TREAD TRACTOR

An ample margin of safety is built into every portion of the machine. Each part is made strong enough to withstand much greater strains than it will ever be called upon to bear in the course of ordinary work. The use of highest grade materials and careful workmanship insure maximum wear and reliability.

In outward appearance The Yuba Ball Tread Tractor resembles an automobile—neat, clean-cut, pleasing to the eye.

There is a booklet describing it fully.

THE YUBA CONSTRUCTION CO.

433 California Street, San Francisco
Dept. G-7
Works, Marysville

of "Better Fruit" endeavored to convince the growers that this exorbitant retail price would ultimately and in the near future be a menace to the fruitgrower. However, little attention or consideration was given to the idea advanced at that time. In the year 1912 growers began to agitate this subject, and in 1914 the growers of the Northwest were almost unanimously united in the idea that nothing was being done to hamper the apple industry more than the exorbitant retail prices that were being asked. In 1910 the editor of "Better Fruit" took this subject up with prominent handlers of boxed apples and discussed the matter quite thoroughly, finally being informed by the dealers that when apples were sold to the retailer the right and title had passed and the dealer had no license in either suggesting or dictating to the retailer what price he should sell at. But in 1914, we are pleased to say, dealers throughout the country are taking a different attitude, frequently advising and endeavoring to show the retailer how he can make more money by selling a greater quantity at a reasonable profit than he can by selling a smaller quantity at a high profit. To sum up the importance of

selling apples at a lower price retail, the retailer by handling a greater quantity at a smaller profit can make more money than by handling a smaller quantity at a larger profit. The lower the retail price the greater the consumption will be. The greater consumption the better the demand will be and therefore firmer jobbing prices, which means more profit for the dealer and at the same time better prices for the grower.

National Apple Day and a Greater Consumption.—Nothing that has been done in the apple business illustrates the possibility of a greater consumption of apples more forcibly than the campaigns pulled off on National Apple Day in the cities of Portland and Seattle. Each one of these cities has a population of somewhere between 250,000 and 300,000. In Portland in the year 1913 National Apple Day was featured, and again this year an extensive campaign of publicity was put on some time in advance of National Apple Day and arrangements made for supplying the consumers at a reasonable price and the sale of apples stimulated in many ways. The result was that in about two weeks the sale of

apples amounted to 80,000 boxes. In an interview with Mr. Frank Ryan of Seattle, who was chairman of the committee for National Apple Day, a number of features that contributed to the success of their campaign in Seattle were related very forcibly. The Seattle campaign was thoroughly and extensively planned. In the first place, a committee was appointed, consisting of fruit dealers, fruitgrowers and prominent business men, to map out the campaign of procedure. Briefly stated, it was as follows: They made arrangements with all of the wholesale fruit dealers and later called a meeting of 600 grocerymen and retail fruit dealers and arranged with them to encourage consumption in every way possible and during the campaign to retail apples at a profit of 15 cents per box. In addition to this, arrangements were made with a delivery company for a blanket rate to deliver a box of apples to any address in the City of Seattle at 15 cents per box. The apples retailed at various prices, according to grade and variety, all the way from about \$1.00 per box to \$1.75 per box. The aim of the committee was to see that every family in Seattle secured a box of apples. Arrangements were made with retail dealers, where one of their customers or anybody living in their district was not able to purchase a box, to have a box sent to them, to be paid for by funds raised by the committee. Some 1500 boxes were given away in this manner. During one week, Mr. Ryan stated, that 60,000 boxes were sold in the City of Seattle. The population being 300,000, this would mean one box to every five people, or practically one box to every family in the City of Seattle. The population of Seattle is approximately 300,000; the population of the United States is approximately 90,000,000, or 300 times greater than that of Seattle. Therefore, if Seattle purchased 60,000 boxes, the United States, if apples were properly distributed so that every section could

Correspondence Invited

By thoroughly competent horticulturist and general farmer. College training. Practical experience in planting, care, pests, spraying and harvesting. Thoroughly familiar with dry farming and irrigation. Fitted by experience and training to take charge of large or hard or farm. References. Address "J." care "Better Fruit."

FOR SALE

One of the large sprayer companies who have a large established business are discontinuing the sprayer end of their business and will sell all patterns, drawings and good will at an extremely low price. This is a bargain. Investigate at once. Address Box "A." care "Better Fruit." Hood River, Ore.

COLORADO GROWERS and others are using with great success
TAKANAP SOFT NAPHTHA SOAP
mixing with Arsenate of Lead to make even spread; positively won't damage; kills green and woolly aphids; prevents blotches and stung fruit. Makes kerosene emulsion in Cold Water.
TAKANAP CO., GERMANTOWN, PA.

be supplied and sold at reasonable prices like they were in Seattle at retail, with the proper amount of publicity and the proper arrangements for delivery, would have purchased 18,000,000 boxes, or bushels, in one week. Ten weeks would mean 180,000,000 bushels at the same rate. The government estimate, which is generally conceded by fruitgrowers to be far greater than the actual yield, is given as 210,000,000 bushels. In other words, the whole apple crop of the United States could be consumed in ten weeks, whereas the period of sale and consumption begins in September and lasts until about the first of May, covering a period of about eight months. Apparently it would seem fair to conclude that only about one-third of the consuming public are being properly supplied with apples at all times at reasonable retail prices. Take Oregon for another illustration. The crop of apples in the State of Oregon will not exceed 2,000 carloads, or about 1,200,000 boxes. If Portland consumed 80,000 boxes of apples in two weeks, then the City of Portland alone could consume the whole apple crop of the State of Oregon in less than eight months, the usual apple season. Or the State of Oregon, which has a population of about three-quarters of a million, could consume its whole apple crop in about two and one-half months if people would consume apples like they did in Portland during the campaign. Such illustrations as these are about as strong evidence as can be furnished indicating the possibility of creating a greater consumption of apples.

Advertising the Apple.—The Northwest Fruit Exchange began putting up a brand of apples known as the Inter-Community Brand called "Skookum," which in the Indian language of the Northwest means "the superlative degree," or the best in every respect. This brand is high class and is confined to apples of superior eating quality. As I remember the varieties, they are Jonathan, Grimes Golden, Spitzenberg, Delicious, Ortley, Winter Banana, Winesap, Stayman Winesap, Newtown

Greater growth from the ground
 Scientific soil cultivation gives bigger results, and you save time and lighten labor if your implements are

Planet Jr

Light, strong, lasting, and fully guaranteed.

No. 3 Planet Jr Hill and Drill Seeder sows all garden seeds accurately in hill or drills. Sows in a narrow line making wheel hoe cultivation quick and easy.

Planet Jr Twelve-tooth Harrow, Cultivator, and Pulverizer is invaluable in strawberry and truck patches and the market garden. Has 12 chisel-shaped teeth and pulverizer. Also solid steel wheel, which prevents clogging.

FREE An instructive 72-page illustrated catalogue! Send postal for it today!



S. L. ALLEN & CO
 Box 1106U
 Philadelphia

We carry stock in San Francisco and Los Angeles Agencies in leading Pacific Coast cities

VIRGINIA FARMS PAY MORE

Core Clob boys raise 100 bushels and up per acre in Virginia and North Carolina, bring here 20% more than in West. Milk here wholesale 25c, Cream 75c gal. Va. export cattle bring biggest prices London Markets. Va. apples sell here at \$2.00 box. Ideal Hog Country—Va. Cured Hams wholesale at 25c lb. Good climate. Farms \$15.00 per acre and up on N. & W. Ry. Write for lists and information now.

F. H. LA BAUME, Agr. Agt.
 Norfolk & Western Ry. Room 298
 N. & W. Bldg., Roanoke, Va.

and Rome Beauty. Very attractive advertising cards in colors are placed in each box. The Northwest Fruit Exchange has carried on a large publicity campaign in the City of New York advertising the "Skookum" brand in these ten varieties, consisting of newspaper advertising, street-car advertising, etc. A beautiful card about two feet long and ten feet wide has been printed in colors showing each variety, with the name of the apple underneath; also underneath each variety the time at which it is best for consumption. The Northwest Fruit Exchange made a very attractive exhibit of "Skookum" brand apples at the Manufacturers' and Land Products Show at Portland and another display at the National Apple Show in Spokane. On one of the placards in the booth it was stated \$10,000 was being spent in the advertising campaign,—another evidence of the value of advertising and publicity in creating a greater consumption of apples.

Self-Competition.—With a large number of marketing concerns in existence, much complaint seems to exist, which is quite universal, that self-competition has unnecessarily cut prices this year. Fault finding has been more or less general and therefore cannot be well laid to any one institution in particular. Some experiences has already been cited where sales have been actually made at a satisfactory price to the purchaser and lower prices quoted by some competing concern, varying from ten to twenty cents per box, which, as can be readily understood, caused trouble between the seller and the buyer. Just how such differences of opinion can be eventually settled re-

mains to be seen. However, such circumstances illustrate the fact that unnecessary self-competition is a big factor in establishing the selling price of apples below the actual marketing value.

The North Pacific Fruit Distributors made a very attractive and original display at the Manufacturers' and Land Products Show at Portland, consisting of a very handsome display of boxed apples and a light house, all made of apples, about twenty feet in height. At the National Apple Show at Spokane a solid bridge about thirty feet long and ten feet wide was built from apples, being fashioned after the stone-arch bridge, with a very attractive sign signifying that the Distributors were the bridge between the fruitgrowers and consumers.

Plant Pathologists to Meet

A meeting of the Western American Phytopathological Society is to be held at Corvallis, Oregon, December 28, 29 and 30. This meeting is planned primarily for the benefit of technical plant pathologists, so that they may get together to discuss problems of particular interest in the western area of the United States and Canada. The practical problems connected with control of plant diseases, however, will also be considered by the meeting, so that it should be of interest not only to technical men but also to practical growers who are interested in making a careful study of problems which they have. Plant pathologists and persons who are interested are cordially invited to attend this meeting.—Wm. T. Horne, Secretary-Treasurer, University of California, Berkeley, California.

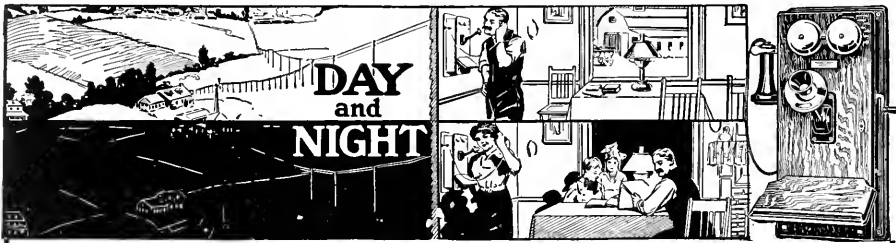
Dow Arsenate of Lead

We want distributors and agents in the Northwest. We are headquarters for the highest quality of

Arsenate of Lead

being one of the largest manufacturers. Our material has been used for six years successfully throughout the United States. Write us for agent's prices, terms and samples.

The Dow Chemical Company
 Midland, Michigan



A Telephone Pays—Every Hour

It pays in MONEY. It pays in PLEASURE. It pays in TIME SAVED. Put in a telephone, and you can talk to your friends' homes in the evening for a social chat, or get the doctor *quick*, or call for help. You will never feel lonely or "away off" if you have a telephone. In the daytime you can call up the town and find out latest prices for crops, order supplies, ask the railroad about shipments, or talk over matters with neighbors. Why be isolated, cut off from everybody, when a

Western Electric Rural Telephone

will put you "next door" to everybody, and save long drives through cold and wet. A FEW DOLLARS buys all this convenience. A FEW MINUTES' TIME taken to write us on how to secure good telephone service will put you in possession of full information. Write nearest house below and mention this paper.

WESTERN ELECTRIC COMPANY

Manufacturers of the 8,000,000 "Bell" Telephones

PACIFIC HOUSES:

San Francisco

Oakland

Los Angeles

Seattle

Portland

Salt Lake City

EQUIPMENT FOR EVERY ELECTRICAL NEED

Pruning for Fruit Every Year

By Professor W. S. Thornber, Lewiston, Idaho

THE fruit industry of the Pacific Northwest has received another severe shock this year in being unable to satisfactorily market its early varieties of apples. This is again going to cause hundreds of orchardists to neglect their trees and permit their orchards to get in such condition that it will be impossible for years again to produce large quantities of extra fancy fruit. Conditions of this kind are always unfortunate, but the most serious difficulty is that the effect will be very lasting, even to the extent of causing the destruction of some very good orchard properties.

One of the first, yet very important factors to receive neglect in an orchard is "pruning." Spraying must be done because some of our good state laws say so. Cultivation and irrigation, or irrigation is essential to the life of the tree in certain districts, but no law says you must prune, nor has a tree ever been known to die because of the lack of pruning, and so for this reason I consider pruning a very essential factor for the future good of the orchard. In the past we have heard much about the pruning and training of young trees. We have had differences of opinion as to whether the tree should be headed down to six inches from the ground or thirty inches from

the ground, and whether the framework should consist of three limbs or more, and even some have gone so far, without considering other factors, as to tell us in just what moon to prune for wood and for fruit. Theoretically this has been fine, because we could definitely plan our work, but practically it has been another story, and so after years of practical experience in the orchard, I want to give you my observations on how to prune for fruit every year.

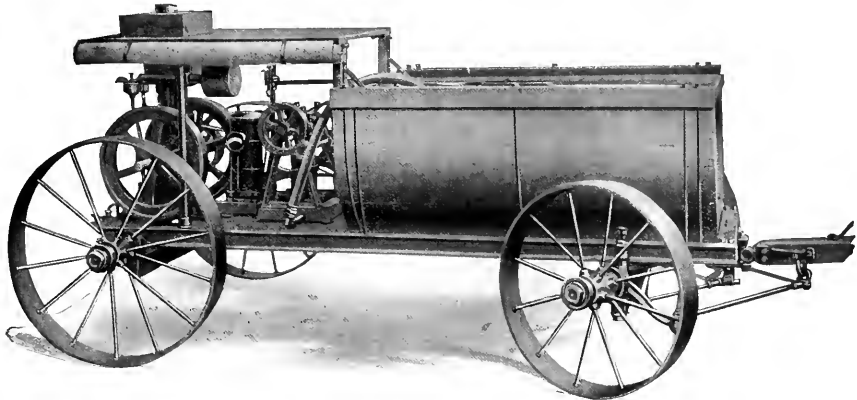
First of all, let me correct any misapprehensions that might exist along the line that cultivation, irrigation, spraying, fertilizing or even pruning alone can under even the most favorable conditions always produce fruit. No one of these horticultural practices, no matter when done, can make a production of fancy fruit on a tree, if any one of the others is seriously neglected. They are as closely tied together as any group of natural laws of the universe. By breaking one you interfere with the working of the others, and so it is inadvisable to consider the pruning of an orchard without taking cognizance of its cultivation in the past and the probable cultivation of the future. Long ago horticulturists recognized the unity existing among the factors of cultivating, spraying, pruning and ferti-

lizing, and that it was essentially the business of the grower to see that these worked in harmony and that each was given its due consideration, but with the addition of "irrigation," complications have arisen among the factors, and while all are affected, since I am confined to pruning I will deal with this factor alone.

Assuming that the tree has reached bearing age and size, and that it already has its fruiting wood, two rather minor factors closely allied to irrigation become strongly apparent. These are: (1) Abundance of available fruit-bud food at the proper season of the year. (2) Sufficient moisture during the close of the growing season to perfect the development of the fruit buds. We have learned that the wrong inter-pretation of these two factors is just as detrimental as the ignoring of either or both. Of course most lands in the Northwest have abundance of plant food, however we occasionally find limited areas that need correction or additional food for the best fruit production, and strange as it may seem, this correction has in several instances been made through a spray, a spray of plant food in dormant trees. The application of large quantities of complete fertilizers to the soil of the orchard, not infrequently retards and indefi-

The SURE WAY TO SUCCESS

in fruit raising is in producing the highest percentage of high class fruit to your entire crop.
No surer way to accomplish this can be had than by the purchase of



A Hardie Hillside Triplex

Side hills and bad soil conditions don't delay its high-pressure efficient work. A closely set orchard is not injured and can be sprayed with ease. There is no machine to be compared with it. Get our catalog giving details.

The Hardie Mfg. Co. 49 North Front St. Portland, Oregon

nately postpones the production of fruit, while limited quantities that will become available early in the growing season accelerates or increases fruit production, providing sufficient moisture is available during the close of the growing season. For best results I want my trees to make a strong, vigorous spring growth, followed by a long, slow summer and fall growth. Sufficient moisture during the close of the growing season to perfect the development of the buds formed early in the summer is, to my mind, an extremely important factor and one that cannot be profitably overlooked by any practical fruit man.

It might be interesting to know that a large percentage of the fruit buds of a tree are formed during June and July, and that the available plant food and supply of moisture during August and September very largely governs the spring in which they will bloom. Of course variety enters into this also, and while the very tardy bearers like Spitzenberg and Northern Spy respond, they are rather slow as compared to many early bearers. My attention was first very forcibly directed to these factors some five years ago while making a critical study of two young peach orchards, planted at the same time, by the same party, from the same stock, cultivated exactly alike, pruned the same, by the same man, and separated only by a wire fence. Yet one of these orchards at that time was bearing a big

crop of fine fruit, and has annually since produced excellent crops. The other orchard, up to last year, never produced even a fair crop. Now don't tell me it was due to frost, soil, rain, ownership or the state in which they grew, because these factors have all been considered. Then, where is the difference? One property was given annually a most thorough irrigation during the months of August and September for the purpose (according to the owner's viewpoint) of preparing the trees for winter, the other was permitted to remain dry during these same months until the late September or early October rains came.

What, then, were the results? The non-irrigated trees ceased to grow early in August and dropped their leaves by the end of the month without developing fruit buds or piling up reserve material for vigorous spring growth, while the irrigated trees continued to grow until late October or early November and then reluctantly dropped their leaves, but not until large fruit buds had been produced in abundance, and the twigs and bark were gorged with plant food for spring growth. These trees could not help but bear fruit, and it would have mattered little how or when they were pruned so long as the fruit buds were undisturbed. They would have fruited just the same. The non-irrigated trees could not bear fruit because they were too nearly starved, nor could any

amount of pruning compel them to bear fruit. This condition prevailed for four years in succession. During the months of August and September of the fourth year, the non-irrigated orchard received abundance of water, developed an enormous crop of fruit buds and produced a good crop the following year. This same condition has been repeatedly observed with reference to apple and pear trees, until now we come to recognize the fact that moisture during the fruit-bud formation period is quite as important a factor as any other practice, art or condition.

After this rather lengthy introduction, I want to give briefly my plan of pruning for fruit every year, and while I recognize that it will not be applicable to all conditions, yet I am sure that it is worthy of the consideration of every practical fruitgrower. From the planting of the orchard up to the third or fourth years, I desire a strong, vigorous growth, and while I do not save even one-half of the first two years' growth, it must be strong enough to provide the scaffold limbs of the trees. From this time forward, I permit fruiting wood to form and even permit the trees to bear limited quantities of fruit, recognizing in this the one fact, and that is the establishing a relation or balance of nature between wood formation and fruit production, a balance that must never afterward be disturbed or broken. Trees brought

Wet Weather Comfort
 Three Dollars Buys a lot of it
TOWER'S FISH BRAND
REFLEX SLICKER



Wear it when you work. Cannot absorb water—turns off every drop and keeps you dry and comfortable. In every sense a service coat, strong at every point. A big buy any way you look at it.

SOLD EVERYWHERE
 Protector Hat, 75 Cts.

TOWER'S FISH BRAND

Catalog Free
 Satisfaction Guaranteed
A. J. TOWER CO., Boston

BUSINESS OPPORTUNITY
LIVE REPRESENTATIVE WANTED

on liberal commission basis in every fruit district for **TAKANAP SOFT NAPHTHA SOAP**. Makes kerosene emission in cold water. Mixes with arsenate of lead. Positively won't harm. Prevents blotches and stung fruit.

TAKANAP CO., Germantown, Pa.

English Seeds
 AND
Bulbs



grown by the famous seed house of James Carter & Co., London, England, and tested by **HIS MAJESTY KING GEORGE V, IVTS**

Assure Success

Due to the similarity of climatic conditions our Grass, Vegetable and Flower seeds produce unequalled **RESULTS** in this section.

Barter's
Tested Seeds Inc.

Ask for Catalog B
ARCADE BLDG. SEATTLE
 Dean D. Ballard
 Manager

YOU WANT THE BEST SPRAYER



You want to save time, temper, trouble and trees. You want to raise fruit that brings the highest price. You want to know all about our sprayer before you buy. There is more you ought to know. Do You Want To Know The Price?

Write for Catalogue B6
BEYERSON MACHINERY CO.
 Manufacturers 182 Morrison St., Portland, Ore.

True-to-Name Nursery
GALLIGAN BROS.
 Proprietors
 Hood River-Dufur, Oregon

Wholesale and Retail General Line of Nursery Stock. Seventeen years in the business. For catalogue and prices write

True-to-Name Nursery
 Hood River, Oregon

into bearing in this manner can readily be forced by systematic pruning to produce annual crops. While those compelled to produce large size and great quantities of wood up to the fifth or sixth year without producing fruit come into bearing with a bang, produce a big crop, exhaust themselves and take the next year or two to recuperate, and then they do the same thing over again. The good orchardist then says it is not natural for these trees to produce big crops annually, and I am sure we all agree with him.

The first and essential thing to do with a tree large enough to bear is to establish this balance of nature. This may be accomplished by using one or more of the following methods: (1) Checking wood growth by means of clover, alfalfa or some other crop. (2) Cease to do heavy winter pruning. (3) Put into operation a systematic plan of both winter and summer pruning. After establishing the balance of nature, maintain it constantly, permitting the trees to produce only sufficient growth annually to keep the trunks and large limbs in perfect condition, replace any breaks or losses and furnish new bearing wood. This, then, is the ideal condition and if followed up will compel annual fruitage.

The season following a heavy winter pruning is usually one of heavy wood replacement, and I find it very difficult for a bearing tree to produce a large quantity of wood and develop a good crop of fruit buds at the same time, and so, for this reason, where bearing trees require heavy pruning, I prefer to do it just at the close of the summer-growth period. To most people this is summer pruning. However, to those who have made it a study it is only one phase of summer pruning, and that of pruning for fruit production. The plan I find that gives the most uniform results is as follows: (1) During the winter remove all crossing, broken and diseased limbs and do such branch thinning as is absolutely necessary, but never cut back unless it is for the purpose of thickening the top. (2) Just before the close of the growing season (after the fruit buds have begun to show) do the regular pruning, consisting of the removing of crossing, broken and diseased limbs and any necessary topping at this time necessary. I prefer that all limbs removed be taken off close to the limb from which they originate and that no stubs be left. The exact date or even months for all districts this pruning must be done cannot be foretold in advance, since it varies with districts, methods of cultivation, irrigation and varieties. The only accurate way to determine just when a tree should be pruned for fruit is by examining some of the fruit buds of the tree to determine the stage of development of the embryo flower in the bud. Just as soon as the bud shows the least development of the flower, pruning will aid the growth. Too early pruning causes many of the buds that would naturally be fruit buds, but have not developed sufficiently, to expand as fruit buds,

OUR SPLENDID CLUBBING OFFER

"Better Fruit" offers to its readers one of the finest lists of clubbing offers ever placed before the public. These rates do not apply to Canada, owing to extra postage.

Review of Reviews.....	\$3.00
Everybody's.....	1.50
Better Fruit.....	1.00
Total.....	\$5.50
All for.....	3.60
World's Work.....	\$3.00
Scribner's.....	3.00
Better Fruit.....	1.00
Total.....	\$7.00
All for.....	5.25
Outlook.....	\$3.00
Ladies' Home Journal.....	1.50
Better Fruit.....	1.00
Total.....	\$5.50
All for.....	4.90
Woman's Home Companion.....	\$1.50
World's Work.....	3.00
Better Fruit.....	1.00
Total.....	\$5.50
All for.....	3.70
Fruit and Produce Distributor.....	\$2.00
Better Fruit.....	1.00
Total.....	\$3.00
Both for.....	2.00
Delicatore.....	\$1.50
Everybody's.....	1.50
Better Fruit.....	1.00
Total.....	\$4.00
All for.....	3.70
Harper's Magazine.....	\$4.00
Good Housekeeping.....	1.50
Better Fruit.....	1.00
Total.....	\$6.50
All for.....	5.45
Cleanings in Bee Culture.....	\$1.00
Good Housekeeping.....	1.50
Better Fruit.....	1.00
Total.....	\$3.50
All for.....	2.65
Ladies' World.....	\$1.00
Modern Priscilla.....	1.00
Pictorial Review.....	1.00
Better Fruit.....	1.00
Total.....	\$4.00
All for.....	2.50
Today's.....	\$0.50
Ladies' World.....	1.00
McCall's.....	.50
Better Fruit.....	1.00
Total.....	\$3.00
All for.....	2.00
Pacific Homestead.....	\$1.00
American.....	1.50
Better Fruit.....	1.00
Total.....	\$3.50
All for.....	2.50
Northwest Poultry Journal.....	\$0.50
Good Housekeeping.....	1.50
Everybody's.....	1.50
Better Fruit.....	1.00
Total.....	\$4.50
All for.....	3.60
Oregon Agriculturist.....	\$1.00
Northwest Poultry Journal.....	.50
Better Fruit.....	1.00
Total.....	\$2.50
All for.....	1.85
Hoard's Dairyman.....	\$2.00
Woman's Home Companion.....	1.50
Better Fruit.....	1.00
Total.....	\$4.50
All for.....	3.15
Western Farmer.....	\$1.00
Northwest Poultry Journal.....	.50
American Bee Journal.....	1.00
Better Fruit.....	1.00
Total.....	\$3.50
All for.....	2.35

Through lack of space we are unable to give a more extended clubbing list. Rates on all magazines will be given to any of our subscribers by writing "Better Fruit."

LESLIE BUTLER, President
TRUMAN BUTLER, Vice President
C. H. VAUGHAN, Cashier

Established 1900

Butler Banking Company

HOOD RIVER, OREGON

Capital \$100,000.00

4% Interest Paid in our Savings Department

WE GIVE SPECIAL ATTENTION TO GOOD FARM LOANS

If you have money to loan we will find you good real estate security, or if you want to borrow we can place your application in good hands, and we make no charge for this service.

THE OLDEST BANK IN HOOD RIVER VALLEY

LADD & TILTON BANK

Established 1859

Oldest Bank on the Pacific Coast

PORTLAND, OREGON

Capital \$1,000,000.00

Surplus 1,000,000.00

Officers:

W. M. Ladd, *President*
Edward Cookingham, *Vice President*
W. H. Dunckley, *Cashier*

R. S. Howard, Jr., *Assistant Cashier*
J. W. Ladd, *Assistant Cashier*
Walter M. Cook, *Assistant Cashier*

INTEREST PAID ON TIME DEPOSITS AND SAVINGS ACCOUNTS

Accounts of banks, firms, corporations and individuals solicited. Travelers' checks for sale, and drafts issued available in all countries of Europe.

of a normal vegetative cell through the opening. The second mode, equatorial, consists in a rupture in the side instead of the end of the spore. The third mode, absorption, consists in a direct development of the whole spore into a vegetative cell. In suitable conditions germination may occur immediately after spore formation; if conditions be unsuitable it may be delayed for many years.

American Association of Nurserymen

The Hotel Cadillac, Detroit, Michigan, has been chosen by the committee on arrangements, Mr. Thomas I. Ilgenfritz and Secretary Hall, as convention headquarters for the fortieth anniversary of this association. The accommodations for meetings, exhibits, committees and for social purposes are unexcelled, and have been generously placed at our command by the management. It will be the committee's aim from time to time to keep members posted regarding progress made in the development of all efforts to have the program, general arrangements and entertainment of the very highest quality. What is now asked of members is that they shall become so enthused that they will importune nurserymen who are at present in the cold to become members before the cold storage doors shut them up beyond the possibility of thawing. The convention of June 23-25, 1915, will go down in American Association history as a phenomenal event.—John Hall, Secretary, 201 Chamber of Commerce Building, Rochester, New York.

while too late pruning has no effect whatever upon the undeveloped buds. The purpose, then, of summer pruning for fruit is to accelerate the fruit-bud growth and at the same time retard wood growth.

In irrigated districts, immediately after the pruning has had its desired effect of checking growth, which may be shown in from three to six weeks, begin to gradually increase the amount of moisture in the soil until by the last of October the soil is thoroughly saturated. At this time the fruit buds will stand out distinctly, be round pointed

and show every indication of vigor. Water applied before growth has been completely checked will cause late fall terminal growth, a condition that may or may not be detrimental to the trees—however a condition not at all desired by the good fruitgrower. The pruning for fruit every year can be briefly summed up in the following sentence: Develop a good frame, produce abundance of fruiting area, check wood growth, strike balance of nature, keep up vigor, feed well, summer prune and irrigate thoroughly at least every autumn.

Bacteria

By E. Leech, Stevensville, Montana

BACTERIA were discovered in 1683. That they do not originate spontaneously was shown in 1860-61. The first disease-producing bacteria were recognized in anthrax in 1819; and the first definite proof that bacteria caused animal disease was by Koch with anthrax in 1875-78. The first plant disease to be definitely ascribed to bacteria was the pear blight in 1879.

Entrance to the host plants is made in various ways, very often through wounds, particularly wounds caused by insects, through roots, stomata, water pores, through delicate tissues as blossoms, etc. Once in the tissue, bacteria may migrate rapidly by means of the vessels, intercellular spaces (between cells) or more slowly through cavities dissolved by the aid of enzymes (an unorganized or soluble ferment).

Typically a bacterial spore consists of a highly refractive ovoid (resembling an egg) walled body within the mother cell. This body possesses high resistance to ordinary stains, a great tenacity against decolorizing if it be once stained, a higher resistance against adverse temperatures and adverse conditions generally than do vegetative cells, and finally the ability to germinate and thus aid in perpetuating the species. While the absolute number of bacterial species that form spores is large, comparatively they are few. They are most frequently met among the rod forms, and are rare among the spirilla and cocci.

There are three modes of spore germination, the most common, polar germination, consists in a rupture of one pole of the spore and the development

The First National Bank

Hood River, Oregon

Capital and Surplus
\$135,000

4% Interest Paid on Savings
and Term Deposits

F. S. STANLEY, President
E. O. BLANCHAR, Cashier

You Men Who Ship—Listen!

Do you know how much money you could save in one year if you would sell **your own** products through the **BLUE BOOK**, with the assistance of the **PRODUCE REPORTER CO.**?

We Will Help You Figure It Out

Write us frankly just what your situation is, and we will tell you exactly how we can help you—we will tell you what it will mean to you to be a member of this organization, and to have, right on your own desk, the latest **BLUE BOOK** with its mass of valuable information.

THE PRODUCE REPORTER CO.

NEW YORK
Fruit Trade Building

"The Fruit and Produce Man's Best Friend"

CHICAGO
Bell Telephone Building

KINGMAN & HEARTY, Inc.

E. W. J. HEARTY, President

Commission Merchants

Box Apples a Specialty

20 Faneuil Hall Market (North Side)

BOSTON, MASSACHUSETTS

Pruning and Shaping Young Trees

A. G. Craig, of Deer Park, Washington, before Fruit Producers' Congress, Spokane, Nov. 16, 1914

THIS article is limited to the discussion of pruning and shaping the tree up to five years of age and does not cover the problems of pruning the bearing tree, and is confined almost wholly to apple and pear trees. Most of the thoughts contained in this article are the resulting ideas gleaned by the writer from five years' experience supervising the pruning of 7,000 acres of orchard in one district in Washington and a close study of pruning in the other fruit-growing districts of the Northwest and also of Michigan.

It being universally conceded by fruitgrowers that the low-headed as opposed to the high-headed tree is the more desirable, therefore this article will not discuss the advantages of the low-headed tree. Just how low the heads should be will depend somewhat on the texture of the soil, the variety of fruit and somewhat on the grower. On light soils and upright-growing trees, the first limb of the head may be as low as eight inches from the surface of the soil, and thorough cultivation maintained with extension discs and other wide harrows, so adjusted that the team may walk at considerable distance from the trunks of the trees and still till practically all of the surface

soil. But with more heavy soils and trees with spreading habits, or if the grower expects to grow humus crops among the trees that require a plow to turn down, the heads must be high enough so that a plow can be run quite close to the trees.

The important thing in training and pruning an orchard is to get our ideal tree and purpose of the tree correctly fixed in our mind and to make each cut cause the tree in hand to conform more nearly to that ideal. One of the great errors made by the grower is that of changing ideals and methods of pruning. What is accomplished one season is defeated the next by the pruner having a different ideal in mind. A perfect appearing tree from an artistic standpoint is not always the best fruit tree. The trees should be trained so that when they reach the bearing age they have room to raise a good quality of fruit and at the same time have ample wood to bear a heavy load, with as few props and other artificial supports as possible. To accomplish this the pruner should understand the soil and climatic conditions and the nature of every variety of tree in the orchard and prune accordingly. To get a good quality of fruit the tree must be

thinned and branches shaped to receive an even distribution of light and air. My ideal tree has a leader or a center trunk, but it is not always possible to get a good leader.

Young trees should be pruned during the dormant period, excepting as treated later in this article under "Pruning the third year." It is best to leave the pruning of leader trees like peach trees, that are apt to freeze back a good deal, until growth starts in the spring, also small trees that require very little time to prune; but the commercial grower who has large orchards should begin in December or even in late November and improve some of the milder days. Most authorities agree that the wounds heal a little better when pruned just before the trees start growth, but apple and pear trees may be pruned at any time during the dormant period, and if so, why not start as soon as the leaves are off so that the operation can be completed early and get the work out of the way so it does not interfere with spring spraying.

The pruner should understand thoroughly the principles and habits of tree growth. To emphasize some of the most important ones I shall put them in the form of questions and answers:

What effect has heavy dormant pruning on a tree?

It stimulates long, heavy wood growth.

What is the difference in the effect of cutting one branch lightly and another branch severely?

The branch cut lightly usually grows stouter than the other, but the new growth on it is not usually so long as the new growth on the branch cut severely. This is one of the most important things to remember in pruning trees.

How can a weak limb on a young tree be strengthened?

Cut it longer than the stronger limbs surrounding it.

Why do we get the desired results by this practice?

The long branches have more buds and, other things being equal, it will produce more leaves, thereby getting more food to increase its diameter.

How can you frequently prevent bad crotchets?

By never cutting two closely-attached limbs the same length. Two closely-attached branches of the same size most always are weak at the unions, especially if the angle is narrow. If one branch is cut shorter than the other it gives the long branch the advantage, and when the load comes the two branches are not pulling against each other.

Why do we cut the leader longer than other branches?

To keep it in advance of the other part of the tree and to strengthen it.

So far the article has treated the subject in a general way and given general principles to follow, but let us consider the subject in a little more concrete form.

One-year-old trees are commonly used for planting. I prefer two-year-

I HAVE PULLED 3000 STUMPS

Big Pacific Coast Stumps, ALONE,
without horses, powder or digging, with a
"K" HAND-POWER
STUMP PULLER

I KNOW you can pull your stumps with the
"K," cheaper, quicker and better than with
any other known device.

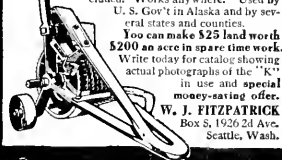
WEIGHS ONLY 171 LBS.

One man easily handles—made of Krupp
steel, can't break or get out of order. Simple,
compact, developing enormous power. Pulls
any stump that 1-inch steel cable will hold.
200 feet steel cable and all equipment in-
cluded. Works anywhere. Used by
U. S. Gov't in Alaska and by sev-
eral states and countries.

You can make \$25 land worth
\$200 an acre in spare time work.

Write today for catalog showing
actual photographs of the "K"
in use and special
money-saving offer.

W. J. FITZPATRICK
Box 3, 1929 2d Ave.
Seattle, Wash.



old trees, provided I grow them myself and can transfer them directly from the nursery to the orchard without being compelled to have them packed and shipped. Two-year-old trees are easily injured. When one-year-old trees are used the large three to four-foot grade is the best. On larger trees the lower buds are small and weak and frequently no limbs start low enough. The one-year-old trees should be cut off from twenty-four to thirty-two inches from the soil; cutting at this height gives room for three permanent scaffold limbs and the leader from six to eight inches apart. During the first growing season no pruning is necessary, except the buds may be rubbed eight to ten inches from the ground. They are frequently rubbed off too high.

Second Year (trees one year from setting).—The pruning just before the second year's growth starts is the time to select the limbs that are afterward to form the main scaffold limbs. It is important to avoid crotches at this pruning. If nothing but crotches develop, cut all the branches out and leave the center leader. During the second year the dormant buds below will be forced out and will make strong branches at a larger angle from the leader. I wish finally to have three main scaffold limbs leading from the main body arranged in a whorl from six to eight inches apart on the main stems, but I frequently leave four and five branches at this time, the lowest one ten inches to a foot from the ground. The excess branches are to be cut out the third or fourth year. Never allow the main limbs to issue from the same point. The selected limbs should be pruned back from one-half to two-thirds of their length. The central leader should be left from six to ten inches longer than the others. If there is a prevailing wind leave the limb to the windward a little longer than the other limbs.

Third Year (trees two years from setting).—In regions where the wood growth on young trees is large, the tips of the new growth can be cut off the

latter part of June or the first of July. (This should be done early enough to give time for branches to make good growth and mature their growth.) Where this is successful a tree with a more perfect balanced head in a shorter period is obtained and almost a year is gained by the practice. It can be repeated again the fourth year, but seldom after that. When this is practiced the three-year-olds are pruned like four-year olds and four-year-olds like five-year-olds. This is the only summer pruning I advocate for young trees, and it is not really pruning, for a very small part of the tree is removed. Choose from two to three limbs which have formed on each scaffold limb and leader and remove all others. Cut back about one-third of growth, care being taken to avoid crotches.

The Fourth Year (trees three years from setting).—Choose from two to three limbs which have formed on each of the branches left the third year and remove all others, excepting a little of the weak wood growth low down on the trees. Cut back less than one-third of the growth. Cut out all but three scaffold limbs.

Fifth Year (trees four years from planting).—The first process should be the same as the fourth year, except more of the weak branches should be left in the lower part of the tree to furnish early-bearing wood, to be removed after it has served its purpose. When a tree becomes four years of age the cutting back should be stopped and

Sunshine Lamp 300 Candle Power FREE

To Try In Your Own Home
Turns night into day. Gives better light than gas, electricity or 18 ordinary lamps at one-tenth the cost. For Homes, Stores, Halls, Churches. A child can carry it. Makes its light from common gasoline. No wick. No chimney. Absolutely SAFE.

COSTS 1 CENT A NIGHT

We want one person in each locality to whom we can refer new customers. Take advantage of our SPECIAL FIELD TRIAL OFFER. Write today. AGENTS WANTED. SUNSHINE SAFETY LAMP CO. 241 Factory Bldg., Kansas City, Mo.



H. HARRIS & CO.

Fruit Auctioneers

227 State Street
Boston, Massachusetts

Established 1847

Frank Moseley
Frank L. Ripley
Cutler B. Downer

Kitchen Most Important Room in Farm House

(Office of Information, United States Department of Agriculture)

THE importance to the farmer of having an economical farm house has been emphasized by the farm architect of the Department of Agriculture, who states that the mental and physical fitness of the laborers, both within the house and in the fields, are vitally affected by the building that affords the family shelter. The average American farm house has failed to share in the improvements that are every day being made in agricultural conditions and, according to the architect, is a rebuke to our boasted civilization. Relatively, he says, the housewife of a century ago with her fireplace cooking and log cabin was better provided for than is the housewife today.

The most important building on a farm is the home. The health, comfort and happiness of the family are dependent upon its construction and equipment, and unless these matters are looked after the sanitary dairy barn or the economically constructed buildings for stock are of little value. Happiness and contentment in the family are as essential to efficient service as improved tools and outbuildings. Although the housewife spends, in many cases, a lifetime in her "workshop," the kitchen and the family rooms, she is not, as a rule, capable of planning a house in the highest degree serviceable and comfortable without assistance. Her help, however, is essential to the

only such of the limbs as grow stronger than the rest should be cut back; also such trees as have too thin tops should be cut back sufficiently to make them stocky and rebranch to make the necessary amount of bearing wood. When cutting back is done, to avoid a tree throwing out a number of sharp forks, the cuts should be made only to small side limbs.

farm architect, as the result of his plans most vitally concerns her.

In 1910 a Western farm paper, at the suggestion of the Department of Agriculture, conducted a competition for farm-house plans. About 660 plans of farm houses were submitted, not one of which was fully satisfactory. The larger number insisted on some particular pet notion and emphasized a single feature to the neglect of other important ones. The men and women who familiarize themselves with the work to be done and then apply themselves to the single task of devising means are the ones who, with the co-operation of the farmers and their wives, can best handle the farm-house problem. One of the most important details regarding the average American farm house is that it must be inexpensive. The average annual net income of a farmer today, after deducting five per cent interest on his investment, is something less than \$400. This does not mean that the houses may not be attractive. They may, if intelligently planned with the help of vines, shrubs and trees, become the prettiest spots in the landscape, and more beautiful and inexpensive than the crowded city houses. The tenant-house problem is growing in importance, as can be seen from the fact that the number of rented farms increased by more than 324,000 during the last decade. Today little

FOR THE DORMANT SEASON

**Diamond Spra-Sulphur
Goulds Spray Pumps
Diamond Fertilizers**

WHEN YOU BUY A Gould Sprayer

you are buying a *lasting pump*—one which will give you satisfaction year after year. The Gould Sprayer is guaranteed by a manufacturer whose reputation for high quality and fair dealing has been known for more than fifty years.

“How to Spray When to Spray Which Sprayer to Use”

An interesting and valuable booklet sent free on request, together with our general catalog of sprayers and spray materials. Ask for catalog 204.

Why? Diamond Fertilizers

Diamond Quality Fertilizers are prepared with the purpose of giving the grower exactly the right fertilizer for each particular need. BONE MEAL and BONE TANK-AGE form the base of **Diamond Odorless Fertilizers** to which is added the necessary Potash, Nitrogen and Phosphoric Acid. No sand, earth or other cheap filler used.

Send for our Complete Fertilizer Booklet No. 205

Portland Seed Co.
PORTLAND, OREGON



Manufactured in Oregon under the Original Patents granted to Chas. E. Hite, filed in 1910 and recently re-issued.

Will not clog or cut nozzle.

ANALYSES

Total available Sulphur 62.88
Sulphur as Poly-Sulphides 44.52
Sulphur as Thiosulphate 18.36
Sulphur as Sulphite and Sulphate 32.00. Balance inert.

Contains No Free Alkali,
No Caustic Soda.

100 pounds equals a 600 pound barrel of Lime-Sulphur solution.

Write for Spray Booklet
No. 204.



easily remedied if only someone had thought of it.

After economy in the construction of the building and in the household has been attained, attention will be given to developing beauty. Simplicity in line and good proportions are meant by the use of this word beauty, and not so-called applied “ornaments.” This simplicity is entirely in keeping with a general plan of economy. Economy, however, is not a synonym for cheapness. Double-strength glass may even be more economical in a tenant house than single strength, notwithstanding its greater first cost. A kitchen sink may be a paying investment, although it excludes a bay window or a fireplace, which has been the pet notion of the housewife. Screened-in kitchen porches, sleeping porches, double or triple windows and kitchen conveniences are fine economical features which even the smallest house plans may well consider. Separate dining rooms for families that generally eat in the kitchen are less important, as are “parlors.” These separate rooms may have complete systems of plumbing, heating and lighting which involve additional expense. The kitchen is the most important room in the farm house. For the average farmer, economy bars a room especially reserved for weddings and funerals. A back stairway in small houses is an unnecessary luxury. Large halls which are never used to live in, but merely as thoroughfares, are a feature which can be dispensed with in the interest of a smaller outlay of money.

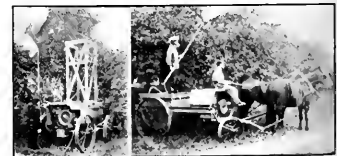
Other features that should give way to a comfortable and convenient kitchen are narrow porches, filigree work, numerous angles in walls and roof, useless doors. There should be an intelligent purpose for every cubic foot of space and for every piece of material about the building, if possible. It may not be found practicable for the Department of Agriculture to furnish plans and specifications of farm houses worked out for particular individual needs. However, it is believed to be desirable to work out plans and specifications for the general needs of farmers, and to illustrate and explain the plans so that the farmer may understand the principles involved and apply them when he remodels his present house. The Office of Farm Management is endeavoring to help the farmer and the farmer's wife along these lines.

more than half the farms in this country are operated by the owners.

The possible economy in household labor and the conservation of the strength of the housewife are two important factors to be considered in the construction of a farm house. Pleasant and comfortable farm homes tend to hold families together; but the cheerless, unlovable and insanitary houses drive boys and girls to the cities. Investigation of prisons, insane asylums and houses of correction seem to prove the fact that the sins which account for the existence of these institutions are often bred in inadequate and unhappy farm homes. So this social aspect of the problem is considerable. The public is awakening to the fact that better farm houses are needed, and the special feature which many farm papers now issue as a “House-Building Number” proves its interest to thousands of

readers. The Office of Farm Management of the Department of Agriculture has now undertaken to investigate this problem systematically and to evolve, if possible, practical improvements for the benefit of the farmer's home.

Certain features are often overlooked in providing economical arrangements for the household when they might be easily provided for. One of the specialists of the Office of Farm Management learned from a woman in Pennsylvania, who had broken down from overwork, that she had been carrying coal from the barn for years. When the husband was asked if there was any reason why a coal bunker could not have been provided near the cook stove and filled directly from the wagon, he answered that there was none, but that no one had ever thought of it. This one detail has been found neglected in other cases where it could have been



TWO SURE MORTGAGE LIFTERS
WE HAVE OTHERS CATALOG FREE
CALIFORNIA SPRAY CHEMICAL CO., WATSONVILLE, CAL

Printing Point Does Not Bob Up and Down

CENTER AT WHICH THE TYPE IS DIRECTED IS AT REST
WHEN IMPRESSION IS MADE



Ball Bearing; Long Wearing

In an **L. C. Smith & Bros. Typewriter** the spot on the paper which is to receive the type impression is stationary at the instant the type hits. The carriage does not bob up and down when the shift is made to write capitals. Why? Because the **type** is shifted—not the carriage. The only movement of the carriage is back and forth on its closely adjusted ball bearing runways—and this does not take place while the print is being made. There is no lifting of the carriage. This is one reason why L. C. Smith & Bros. typewriting is free from blurs and every letter in the right place. Ask for demonstration.

L. C. Smith & Bros. Typewriter Co.

Home Office and Factory
SYRACUSE, N. Y.

Branches in all Principal Cities

Portland Branch Office
306 OAK STREET

Lennon Flume

Is *Water Tight*. No leaks; no law suits; no waste; no upkeep. All the water delivered where wanted. "Armo" (American Ingot) Iron used in its construction means the **UTMOST OF SATISFACTORY SERVICE.**

Coast Culvert & Flume Co.

Portland (Kenton), Oregon

California Fruit Growers' Exchange

By G. Harold Powell, General Manager, Los Angeles, California

THE California orange and lemon crop equals 50,000 carloads, or about 20,000,000 boxes. There are between 10,000 and 12,000 growers engaged in the culture of the fruit. Four-fifths of the growers are organized into co-operative associations, more than 60 per cent of which are federated into the California Fruit Growers' Exchange. The California Fruit Growers' Exchange is an organization which acts as a clearing house in providing the facilities through which 6,500 growers distribute and market their fruit. There are three foundation stones in the exchange systems—the local associations of growers, the district exchanges and the central exchange. The local associations, the district exchanges and the central or California Fruit Growers' Exchange are organized and managed by the growers on a non-profit co-operative basis, each of them operating at cost, and each distributing the entire net proceeds to the growers after operating expenses are deducted.

The California Fruit Growers' Exchange comprises 115 local associa-

tions, each of which has from 40 to 200 members. The growers usually organize as a corporation without profit, under the laws of California, issuing stock to each member in proportion to his bearing acreage, to the number of boxes he ships, or in equal amounts to each grower. The association assembles the fruit in a packing house, and there grades, pools, packs and prepares it for shipment. The associations are managed by a board of directors through a manager and are conducted exclusively for the benefit of the growers. They declare no dividends and accumulate no profits. The fruit is pooled each month, or in a shorter or longer period, each grower receiving his proportion of the proceeds received for each grade shipped during the pool. Many of the associations pick the fruit, and some of them prune and fumigate the trees for the members. Each association has brands for each grade, and when a carload is ready for shipment it is marketed through the district manager, of which the association is a member, through the agents and facilities pro-

vided by the California Fruit Growers' Exchange.

There are seventeen district exchanges. These exchanges are corporations without profit. There may be one or more district exchanges in a community, depending upon the number of local associations and other local conditions. The district exchange acts as a clearing house in marketing the fruit for the associations through the California Fruit Growers' Exchange, and acts as a medium through which most of the business relations between the exchange and the local associations are handled. The district exchange orders cars and sees that they are placed by the railroad at the various association packing houses; keeps a record of the cars shipped by each association, with their destinations; informs itself, through the California Fruit Growers' Exchange, of all phases of the citrus marketing business; places the information before the associations; receives the returns for the fruit through the central exchange and returns the proceeds to the associations.

The California Fruit Growers' Exchange is a non-profit corporation under the laws of California. It is formed by seventeen district exchanges, with a paid-in capital stock of \$1,700. It is managed by a board of seventeen directors through a general manager, one director representing each district exchange. The function of the California Fruit Growers' Exchange is to furnish marketing facilities for the district exchanges at a pro rata share of the cost. The exchange places bonded agents in the principal markets of the United States and Canada, defines the duties of the agents and exercises supervision over them. It gathers information through them of conditions in each market, receives telegraphic advices of the sale of each car and furnishes the information every day in bulletin form to the local associations. The exchange business is on a cash basis; it makes prompt accounting of returns to the growers through the district exchanges; it takes care of litigation that arises in connection with the marketing of the fruit; handles all claims; conducts an extensive advertising campaign to increase the demand for citrus fruit; develops new markets and performs such other functions as are set forth in the contract between the central exchange and the district exchanges. The central exchange levies an assessment against each district exchange for a pro rata share of the expense on the basis of the number of boxes shipped. It declares no dividends. It does not buy or sell fruit or any other commodity, and exercises no control, either directly or indirectly, over sale or purchase. Its function is to provide facilities for the distribution and marketing of the fruit for those shippers who desire such facilities. Under the exchange system every shipper reserves the right to regulate and control his own shipments; to develop his own brands of fruit; to use his own judgment as to when and in what amount it shall be shipped, to what

IMPORTANT EVENTS

1914-15 AT
OREGON AGRICULTURAL COLLEGE

Winter Short Course—January 4-30

Agriculture, including Agronomy, Animal Husbandry, Dairying, Horticulture, Poultry Husbandry, Insects, Plant and Animal Diseases, Creamery Management, Marketing, etc. **Home Economics**, including Cooking, Home Nursing, Sanitation, Sewing, Dressmaking and Millinery. **Commerce**, including Business Management, Rural Economics, Business Law, Office Training, Farm Accounting, etc. **Engineering**, including Shopwork and Roadbuilding.

Farmers Week—February 1-6

A general clearing house session of six days for the exchange of dynamic ideas on the most pressing problems of the times. Lectures by leading authorities. State conferences.

Extension Service

Offers lectures, movable schools, institutes and numerous correspondence courses on request.

Music: Piano, String, Band, Voice.

No tuition. Reduced rates on all railroads. For further information address

THE OREGON AGRICULTURAL COLLEGE

(tw-12-1 to 1-1)

CORVALLIS, OREGON

Hop Growers—Attention

You know that the time is not far off when your hop yard will be unprofitable. Why not plant a GRAFTED VROOMAN FRANQUETTE WALNUT TREE in every fifth hill each way of your yard? As you cultivate your hops you will be cultivating the walnut trees without additional expense. As walnuts can be dried in hop driers you are already equipped to handle this crop. Look into the possibilities of this coming industry. We are prepared to give you information, as we have a bearing walnut grove and have made a study of this business. Write for our booklet on soils, culture, varieties, etc.

FERD GRONER & McCLURE

Hillsboro, Oregon

markets it shall be shipped and the price he is willing to receive, reserving the right of free competition with all other shippers, including the members of the same organization, uncontrolled by anyone. The agent in the market acts directly under the order of the shipper, who determines the prices at which each car shall be sold outside of the auction markets, and all other matters connected with its distribution, the California Fruit Growers' Exchange acting as the medium through which orders pass from the agent to the shipper, but never selling a car or determining the price at which the fruit shall be sold.

The exchange is a democratic organization; the growers exercise control over all matters. Membership in the exchange is voluntary; a grower may withdraw from an association at the end of a year; an association may withdraw from a district exchange and a district exchange may withdraw from the central exchange; these relations being set forth in the various contracts that hold the members together. There is no attempt on the part of the central exchange to regulate shipments, to eliminate competition, divide the territory or business or to influence prices. In this connection its functions are to keep the associations informed daily

regarding the shipments from the state; the general movement of exchange cars, the general conditions of the different marketing points; the prices at which the exchange fruit is sold, and in furnishing such other information as will allow the growers and shippers, through their association and district exchanges, to decide the questions of distribution and marketing for themselves. One-third of the entire shipments are sold at public auction, the remainder through unrestricted private competition. There is no uniformity in price in the different brands, because the fruit in each section, on account of soil and other local differences, has an individuality of its own, and every brand sells on its own merits.

The exchange is organized into several divisions: Sales, legal, traffic, advertising, insurance and mutual protection, and a supply department which furnishes the materials used in the packing houses and on the ranches at cost to the members. The exchange does not consign fruit. It is shipped on order; sold f.o.b. or sold "delivered, subject to usual terms." The exchange maintains district managers in all of the important cities of the United States and Canada. These employees are exclusively salaried agents engaged

only in the sale of fruit, in the development of markets and in handling the local business problems of the exchange.

A New-Old Label Concern

Mr. E. Shelley Morgan, who for the past twenty-five years and more has been engaged in the label business, representing a large concern, has associated himself with the Simpson & Doeller Company, Baltimore, Maryland, with headquarters in Portland. He will have charge of their business throughout the Northwest territory. Mr. Shelley Morgan is well known among the apple growers and cannery men of the Northwest, having been a pioneer in the label business in this field. Mr. Shelley Morgan is an apple grower owning a large orchard in Hood River, and is highly popular with the apple growers all over the whole country. His many friends wish him success in his new venture.

To Remove Fruit Stains

Alcohol softens most fruit stains, especially if it is warmed over hot water. Soaking in milk also helps. After softening the stain pour boiling water through the cloth. Dampened powdered starch applied instantly will take out almost any fruit stain from wash goods if left several hours.

Some fruit and wine stains, especially those of apple and pear, and some clarets are very difficult to remove. If they are boiled gently (after soaking) in some strong borax and water, well rinsed, then hung out dripping wet in the sunshine, or during a frosty night, the stains will usually disappear.

Winter Rhubarb

In the winter time fresh vegetables are very scarce and when obtainable are very expensive, as they are grown in hothouses. Winter rhubarb is being successfully grown by J. B. Wagner, of Pasadena, California. It is claimed that the variety is strong and vigorous and does well even in climates that are very cold. It is also stated that this rhubarb does best on warm and well drained soils. Irrigation apparently is necessary in dry climates, but in the Northwest where rain is so plentiful it would seem that this variety could be grown without irrigation.

Store Your Apples in Spokane

The Natural Storage Center

Take advantage of storage in transit rate and the better market later. Write us for our dry and cold storage rate and information.

**Ryan & Newton
Company**

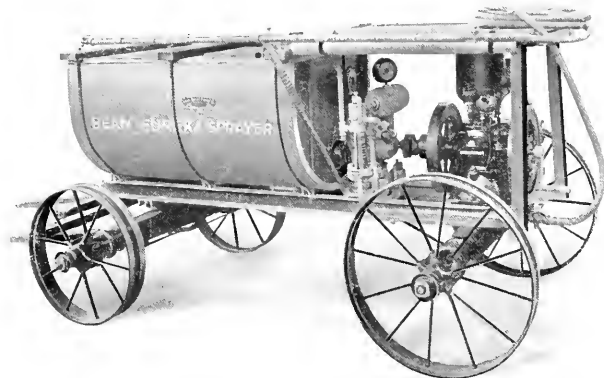
SPOKANE, WASHINGTON

Complete Power Sprayer

The **BEAN EUREKA** \$195.00
 A HIGH GRADE ONE-MAN,
 ONE-HORSE, ONE-LINE-OF-
 HOSE RIG AS SHOWN

F.O.B. Portland, Ore

Here is the outfit thousands of small farmers, orchardists and vineyardists have been waiting for—a dependable, reliable, efficient power sprayer at small cost! One man does all the work, and can spray from two to three acres a day.



This is an exact photographic reproduction.

This new sprayer is bound to create a sensation. There is nothing else like it on the market. There has long been a demand for a rig that would fill in the jump between the hand pump and the higher priced power outfits like the Bean Giant. And here it is.

High pressure guaranteed. The light weight of the BEAN EUREKA makes it easy for one horse to haul on rough and hilly ground, or any other kind. Inexpensive to operate. Equipped with a Novo Engine, which can be quickly and easily released from the pump for other work. Strong, sturdy, durable. Thirty years of experience are back of this sprayer, and we guarantee it the same as we do our larger outfit.

Write for Catalog 28-A.

It tells more about the BEAN EUREKA, and illustrates and describes the entire Bean line of Hand and Power Sprayers and Pump Accessories.

BEAN SPRAY PUMP CO.

213 West Julian Street, SAN JOSE, CALIFORNIA
 12 Hosmer Street, Lansing, Michigan

Blackberries and Loganberries

By Miss Laura E. Barlow, Sebastopol, California

BLACKBERRIES have been grown in the Sebastopol district of Sonoma County since 1872, and it has been proven that a sandy-loam soil, together with moist cool summers, fanned by the coast breeze, and an abundance of winter rains, make it a most favorable locality for berry growing. Our principal varieties are Lawton blackberry, Mammoth blackberry and the loganberry, of which the blackberry is the most extensively grown in our locality

and more than doubles all other varieties. It is a very long-lived berry and its adaptability has been proven by the test of time. There are some of the oldest vines still standing and bearing well, with no pest of any kind to molest them. The Mammoth blackberry is a cross between the California dewberry (or wild blackberry as it is commonly known) and Crandall's Early, and the loganberry is a cross between the California dewberry and the red raspberry.

In planting the Lawtons the plants are obtained by digging the shoots that sprout up late in the summer between the hills. These plants are dug with a good cross root from three to four inches long. This is a plant which should be looked after very carefully, so as to insure a fine, strong growth when planted. These are upright growers and are planted eight feet apart each way. With one-year-old vines one stake is used, and two the second year. These are six feet in length and are driven one on each side of the vine, close in but spreading at the top, to allow for lateral growth and ease in picking. The pruning does not amount to much the first year, but in the spring of the second year the tender shoots that are thrown out are only allowed to grow about four and one-half feet high. Then the top is clipped off, which causes them to throw out laterals, and these are cut back to the length of from six to eight inches, and hold the berries for the coming year. The old wood is taken out each fall and the new canes, after being pruned, are tied firmly to the stakes and are ready for the spring cultivation to commence.

The Mammoth blackberry and the Loganberry have met with much favor in our locality, coming in very early in the season, and are off before our Lawtons ripen. Their adaptability to our soil and climate has given them a wide planting, and their vigorous growth and prolific bearing has made them favorites among our growers. The Mammoth blackberry is in full fruiting at the time the logans begin to grow light and the Lawtons are beginning to ripen, thus giving us a continuous succession of Logan, Mammoth and Lawtons for a season of about three months. The Logan and Mammoth are running vines and must be trellised.

ORENCO

**Ornamental
Nursery Stock**

A few dollars spent wisely each year in planting desirable Shade Trees, Flowering Shrubs, Roses, etc., will add immensely to the attractiveness and value of your home. Our Ornamental Department is the largest and most complete in the Northwest and we will be glad to give you the benefit of our years of experience and knowledge in this business.

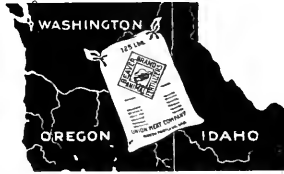
Just a few suggestions: Norway Maple, Horse Chestnuts, Cut Leaf Birch, Japanese Maple, Red Oak, Pin Oak, Sweet Gum, English Laurels, Koster's Blue Spruce, Himalayan Cedar, Retinosporas, etc., etc.

Order now for immediate planting, and get good results.

Oregon Nursery Company

ORENCO, OREGON

Positions for
Reliable Salesmen



Don't Let the Northwest Become the Abode of Worn-Out Lands!

Our warehouses are full and overflowing. Our fruits and grains are going to all parts of the world—for the soil has given up its yield. BUT are we doing what the farmers of New England did — take FROM the soil without giving to it?

Don't let the Northwest become the abode of worn-out lands. After harvest time, the soil is weakened. If we do not put back in our soil the plant food taken out, upon what is the next crop to feed?

Beaver Brand Animal Fertilizers

"A FERTILIZER FOR EVERY SOIL"

prevent your land from wearing out. The guaranteed analysis shows the proper proportion of animal ammonia, nitrogen, phosphoric acid and potash that revives strength—gives new life—enables the next crop to feed upon the necessary sustenance for a good healthy harvest. Avoid the worn-out-land danger. Insure against poor crops—increase your land's producing ability by ordering this famous Fertilizer NOW. Fertilizer booklet D-37 FREE. Tells about fertilizers, their application and results they produce for others.



This is done in the winter, two wires being used, one above the other, about two and a half feet and three and a half feet above the ground. The plants from these varieties are grown from "tips," which means putting a trowel full of soil on the tip of the new growth after the first rain in the fall, causing it to take root, and by spring these are ready for planting. Thorough cultivation is very necessary in the raising of fine berries. The ground should be plowed four times, that is away from vines both ways, then back again (after the hoeing has been well done), with a thorough harrowing after each plowing. As we do no irrigating, this leaves our ground light and mellow, and is able to hold the moisture during the warm summer days.

Our berries are all sold through our Sebastopol berry growers' association, which was organized in February, 1909, under the name of the Sebastopol

Berry Growers, Incorporated. We had our ups and downs the first year, but we all held together and have been very successful in marketing our berries to good advantage. It has caused number one fruit to be put on the market, has opened up good Eastern markets and relieved our home supply so the canneries are able to pay us a good price for our surplus. And I must not forget to mention our dried berry market, which we have been working up by sending from one-half to one carload out each year, and are now beginning to have many inquiries for our dried article, which is a very fancy grade. Our shipping berries (excepting a few which supply our northern towns) are shipped to Eastern markets; we are now sending out several carloads a week. These are all packed in one-pound baskets, and there are twenty-four to a crate. Then they are delivered to our warehouse, pre-cooled

and loaded into iced cars, and are then ready for shipment. The cannery takes our surplus, which are picked in five-pound trays and delivered in chests of twelve and twenty trays each.

I will here give some of our rules, which are very important in the harvesting of our berries: (1) Never pinch a berry so as to crush it. Practice the light-fingered art, and never let a berry bleed. (2) Berries should be broken from the stem, not pulled. (3) All ripe berries to be picked clean each time, as they spoil your next picking. (4) Never touch a berry but once. (5) Never allow any leaves or stems in your basket and throw out all crushed fruit. (6) Fill your baskets as full as possible, so they will not crush against the lid of the crate. (7) Do not pick berries when a heavy dew is on them. Take pride in your work and be a workman that need not be ashamed to put every box on exhibition as one of the most beautiful fruit creations of nature cultivated by man.

HOOD RIVER APPLE VINEGAR CO.

HOOD RIVER

YELLOW NEWTON VINEGAR
AND SWEET CIDER
EVAPORATED APPLES

Made from Choice Hood River Apples

If your jobber cannot supply you
send your order to

Hood River Apple Vinegar Co.
HOOD RIVER, OREGON

W. van Diem

Lange Franken Straat 45, 47, 49, 51, 61

ROTTERDAM, HOLLAND

European Receivers of American Fruits

Eldest and First-Class

House in this Branch

Cable Address: W. Vandiem
A B C Code used; 5th Edition

Our Specialties are

Apples, Pears, Navel Oranges

The Paris Fair

Hood River's Largest and Best Store

RETAILERS OF

EVERYTHING TO WEAR

AGENTS FOR

HAMILTON & BROWN AND

THE BROWN SHOES

HART, SCHAEFFNER & MARX

CLOTHES

MANHATTAN SHIRTS

JOHN B. STETSON HATS

NEMO CORSETS

Strictly Cash—One Price to All

Pruning An Art, Etc.

Continued from page 10

however, upon the varieties and climatic conditions. Then by pruning the trees they will proceed to put out a correspondingly greater number of fruit spurs for the next season's crop. If you prune in summer during the vigorous growing season, particularly the latter part of it, you will be liable to get a paint-brush effect at or near where you make your cutting. There will only be about a month's time during which you can get the result sought in summer pruning, and that time starts, as stated, after the terminal buds are well developed. If you intend to do summer pruning, do not prune in the spring. Except this, you can cut off terminal limbs and branches in the spring and benefit your trees by doing it, but you must not cut off these terminal branches when doing summer pruning. That is one thing you must not do, for the reason, as I have told hereinbefore, the fruit depends upon the leaves for size, texture and flavor. Now if you cut off these terminal branches, you defoliate the tree to just that extent and the fruit on that part of the branch which is left will be deprived of the necessary nourishment to mature it. Let your work be the removal of entire branches and sub-lateral limbs. In other words, a thinning out of the body of the tree, and you will get the effect desired if the work is done at the right time. The forcing of fruit production by summer pruning is being practiced more and more as the years go by. Growers are getting out of the "landscape-garden" orchard idea, for when they can make their orchard produce as much in twenty years as it otherwise would in forty years, which it will do with proper pruning, they practice it, pocket the profits, dig up the old orchard when it ceases to be productive and set out a new one.

There is one more thing I want to mention, and that is the so-called "watersprouts." Generally, whenever a tree has been severely pruned, a large number of sprouts will start out from the body or framework of the tree. It is safe to presume that a large majority of these sprouts have grown from what is termed "adventitious buds," that is, buds that have been "produced out of normal and regular order" by a superabundance of vitality in the body of the tree, caused by the heavy pruning. For the reason that some of these sprouts grow very rapidly and late in the season, their wood is soft and the buds on them are sometimes not well developed, is perhaps the reason why they are called "watersprouts." I have pruned and developed limbs that produced fancy fruit from these despised sprouts. I have made top-grafts and root-grafts from watersprouts, the buds of which were very poorly developed, and which made as good a growth as any of the grafts. So if you can use any of these as a limb to fill up an open space in a tree to which you can direct it by cutting the proper bud do so. Of the bal-

Hardy English Walnut Orchards

No longer an experiment in Zero Climates

Plant an English Walnut orchard this Fall. Make a beginning and add to it each season. No bank failures, business depressions, nor trust investigations can interfere with this source of pleasure and income, for its rock foundation is the development of a natural resource. Start with rugged acclimated trees grown under severe climatic conditions, with temperature far below zero at times. Conditions that breed iron-clad vigor and vitality; and that produce trees so hardy, they may be planted in cold climates with the same assurance of successful fruiting as Peach trees.

We believe this is the only northern locality, where commercial orchards of English Walnuts may be seen, some of them containing hundreds of trees which have been bearing regularly for more than twenty years.

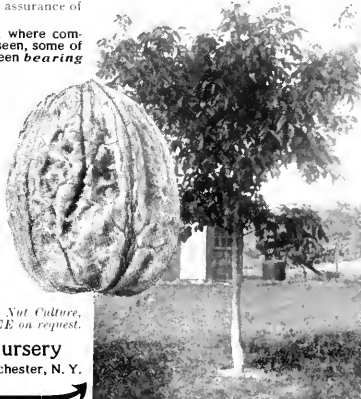
For the lawn or driveway, English Walnut is exquisitely beautiful with its smooth, light gray bark, luxuriant dark green foliage, lofty, symmetrical growth. A homelet tree to plant about the home. Rochester parks and public streets contain many beautiful bearing trees, apparently as hardy as the Maples and Elms. At least, thriving under the same conditions, and producing annually delicious nuts as well as shade. Truly a most delightful combination.

We have unlimited faith in trees bred and grown under these conditions, and are sure that those who plant our hardy strains of English Walnuts will be well pleased.

The picture shows a Mayo English Walnut tree planted in 1907, began bearing in 1911. Superior quality, extreme hardiness, early bearer, safe to plant.

Our 1914 Catalog and Planting Guide — Includes Nut Culture, Fruits, Roses, Shrubs, Evergreens, etc., mailed FREE on request.

GLEN BROS., Inc., Glenwood Nursery
Established 1866 2273 Main St., Rochester, N. Y.



Ground Phosphate Rock

The Natural Plant Food and Permanent Soil Builder

1,000 pounds per acre once in each four years will cost about \$1.00 per acre per year. At Pennsylvania State College \$1.05 invested in Rock Phosphate gave increased yields of \$6.85—over 500%. At Maryland Experiment Station \$1.90% gave \$22.11—over 1,000%. At Ohio Station each dollar paid for itself and gave \$5.98 profit. At Illinois Station \$2.50 gave the same return as \$250 invested in land.

Each ton contains 280 pounds of phosphorus, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

United States Phosphate Co.

228 West Broadway, SALT LAKE CITY, UTAH

Write for Literature

"Perfection of Fineness in Grinding," our motto

Ridley, Houlding & Co.

COVENT GARDEN, LONDON

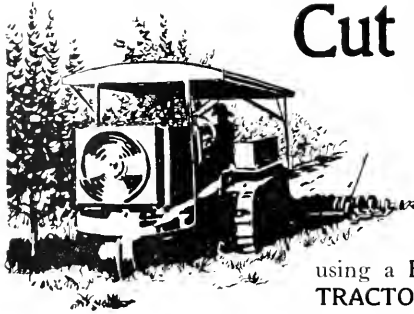
Points to remember when consigning apples to the London Market

1.—We Specialize in Apples

2.—All Consignments Receive our Personal Attention

3.—The Fruit is Sold by Private Treaty on its Merits

CABLE ADDRESS: BOTANIZING, LONDON



Cut the Cost Per Box

Increase your profits
by raising a bigger crop
of better quality fruit.

You can do this by
using a **BABY CATERPILLAR
TRACTOR** to plow and cultivate.

The **BABY CATERPILLAR** is built for orchard work. It is only 58 inches high (without the canopy). It works close under the trees without hurting the branches. It turns short from one row into the next and works right up into the corners. The two track friction clutches make the difference—one side can be stopped while the other does all the driving. This track has more than eight times the bearing surface of round-wheel tractors—less pressure per square inch than a horse's hoof. Nearly a hundred orchard-

ists on the Pacific Coast are using the **CATERPILLAR** and increasing their profits.

The **BABY CATERPILLAR** has many uses outside the orchard—for plowing, hauling, clearing land, and for any sort of stationary work. There are two larger sizes—60 and 75 h. p.—for the heavier work, such as harvesting, logging, grading roads, etc.

There are other tractors, yes, but there's only one **CATERPILLAR**—**HOLT** builds it. Learn all about the **CATERPILLAR** in Catalog BE 133.

The HOLT MFG. CO.

(Incorporated)
Spokane, Wash. Calgary, Alta.
Portland, Ore. Stockton, Cal.

CATERPILLAR
Reg. U.S. Pat. Off.

“BLUE RIBBON”

(EXTRA FANCY)

“RED RIBBON”

(FANCY)

Famous Brands of Yakima Apples

Packed under our personal supervision
Get in touch with us by wire or letter

Yakima County Horticultural Union

E. E. SAMSON, Manager
NORTH YAKIMA, WASHINGTON

ance save one every six or eight inches, which clip off just above the third or fourth bud, and all the rest cut off close up to the limb. Those saved will put out fruit spurs and bear fruit. Never cut off fruit spurs from the large limbs of an apple tree, for some of the largest, finest-flavored apples grow on these spurs.

Pears, cherries and all the plum family require about the same treatment in pruning as apples, except that if the pruning is properly done and they are kept in good form up to the time they are four or five years old, these fruit trees will require little or no pruning thereafter. With pears, cut off all fruit spurs from the main branches in the body of the tree. This is done to prevent pear blight from being started in the body of the tree, as insects carry the infection to the blossoms, and if there are any blossoms permitted on these large limbs and infection takes place, it means the destruction of all that part of the tree. Peaches and almonds require more severe pruning to get the best results. The fruit is formed upon one-year-old wood. They are vigorous growers and it is up to the pruner to keep his trees down and at the same time with sufficient new wood growth upon which to form the next year's crop of fruit.

Concentrated Apple Cider

The specialists of the fruit and vegetable utilization laboratory of the Department of Agriculture have completed arrangements for a commercial test of the recently discovered method of concentrating apple cider by freezing and centrifugal methods. As a result, a cider mill in the Hood River Valley, Oregon, will this fall undertake to manufacture and test on the retail market 1,000 gallons of concentrated cider, which will represent 5,000 gallons of ordinary apple cider with only the water removed.

The new method it is believed makes possible the concentrating of cider in such a way that it will keep better than raw cider and also be so reduced in bulk that it can be shipped profitably long distances from the apple-growing regions. The old attempts to concentrate cider by boiling have been failures because heat destroys the delicate flavor of cider. Under the new method nothing is taken from the cider but the water, and the resultant product is a thick liquid which contains all the apple juice products and which can be restored to excellent sweet cider by the simple addition of four parts of water. The shippers and consumers, therefore, avoid paying freight on the water in ordinary cider. In addition the product when properly barreled, because of its higher amount of sugar, keeps better than raw cider, which quickly turns to vinegar. The process, as described by the department's specialists, consists of freezing ordinary cider solid. The cider ice is then crushed and put into centrifugal machines such as are used in making cane sugar. When the cider ice is whirled rapidly the concentrated

EFFICIENCY AND SAFETY



**SPRAY
MATERIALS**

Are Insecticides and Fungicides of highest **QUALITY**. Made in California for use by Western Fruit Growers.

Our Entomologist, MR. S. W. FOSTER, understands the control of Orchard Pests and will give you the *best* and most *reliable* DEFINITE information possible to obtain.

This help is free on application to

General Chemical Company of California

Royal Insurance Building

SAN FRANCISCO

PORTLAND, OREGON

PORTLAND HOTEL

The hotel which made Portland, Oregon, famous
Most Desirably Located. In the Center of Shopping and Theatre District
Covers a City Block

Broadway, Sixth, Morrison and Yamhill Streets

EUROPEAN PLAN—\$1.00 per day and upward

Write for Portland Hotel Booklet

G. J. Kaufmann, Manager

D. Crossley & Sons

ESTABLISHED 1878

Apples for New York and Export

CALIFORNIA, OREGON, WASHINGTON, IDAHO AND
FLORIDA FRUITS

Apples handled in all European markets at private sale. Checks mailed from our New York office same day apples are sold on the other side. We are not agents; **WE ARE SELLERS**. We make a specialty of handling **APPLES, PEARS AND PRUNES** on the New York and foreign markets. Correspondence solicited.

200 to 204 Franklin Street, New York

NEW YORK

LIVERPOOL

LONDON

GLASGOW

juice is thrown off and collected. The water remains in the machine as ice.

At ordinary household refrigerator temperatures this syrup-like cider will keep perfectly for a month or six weeks, and if kept at low temperatures in cold storage will keep for prolonged periods. At ordinary house temperatures it will, of course, keep a shorter time. To make the concentrated syrup the cider mill must add to its equipment an ice-making machine and centrifugal machinery, so that the process is not practicable on a small scale. The specialists are hopeful, however, that the commercial test soon to be inaugurated in Oregon will show that it will be possible for apple growers to concentrate their excess cider and ship it profitably to the far South or to other nonproducing regions. The specialists also believe that it will enable apple producers to prolong the market for cider.

Remedies for Potash Shortage

Various suggestions have been made in regard to the steps to be taken by farmers in reference to the shortage of potash in their fertilizers, caused by the greatly reduced shipments of potash from Germany since the first of August. Most of the fertilizer companies have endeavored to make the potash on hand go as far as possible by selling for the present brands of complete fertilizers containing only two or three per cent potash and withholding from sale brands containing larger amounts. The suggestion that some or all of the potash be replaced by phosphoric acid is absurd, for every schoolboy knows that one plant food cannot take the place of another. There are some indirect fertilizers, such as lime, gypsum and salt, that can release a limited amount of potash from some soils that contain hydrated silicates of alumina and potash. But if these soils have already been treated with lime or have received repeated dressings of the usual forms of fertilizer containing soluble phosphate with its accompanying gypsum, then the potash in the hydrated silicates has to a large extent already been replaced, and the use of more lime or gypsum or salt could not be expected to release much additional potash. Ground limestone or oyster shells act too slowly to be used as potash releasers.

The residue of soda left in the soil by nitrate of soda is more effective in releasing potash than is gypsum, and hence goods in which the nitrogen is largely in the form of nitrate of soda may have a special value in the present emergency. It is often stated that decaying organic matter releases potash from the soil, but there seems to be no direct evidence of this. On the contrary, Dr. S. Peacock states in the American Fertilizer of September 5, 1911: "Several thoroughly competent researches have shown that decaying organic matter has little effect on converting inert mineral plant food in the soil into available form."

BARTLETT PRUNING TOOLS

are designed on scientific principles, made of the highest grade materials and sold on their merits.

We make a complete line, including our **JOINTED TREE TRIMMER**, and will be glad to send catalogue and booklet on pruning upon request.

No. 18, Pruning Saw Price \$1.75
 No. 777, Two Hand Pruner 26-in. Ash Handles, \$2.00

Your dealer can supply you. If he does not, mail money order to us and we will ship prepaid.

No. 18 **BARTLETT MFG. CO.** No. 777
 Boydell Building DETROIT, MICHIGAN

Save \$35 to \$50

Yes sir, I'll save you \$35 to \$50 in the first cost alone on the best, most modern, most sanitary and closest skimming cream separator ever built. When you buy a **New Galloway Sanitary**—you pay just one small profit above actual cost of materials and labor. Why buy any dealer \$85 to \$110 for an inferior machine. Buy direct and save over 50%.

Special \$14 Offer and 90 Days FREE TRIAL

Test of this machine right on your farm. The new Galloway Sanitary skims to a trace, gears fine in all-ways to run—never to clean. Sold direct. Backed by \$25,000 bond. Write for new catalog and special \$14 offer that will help you get your machine partly or entirely without cost in the end. Write today.

WM. GALLOWAY COMPANY
 1025 Galloway Station Waterloo, Ia. 463

Portland Wholesale Nursery Company

Rooms 301-302 Stock Exchange Building
 Corner Third and Yamhill Streets
 PORTLAND, OREGON

YOU CAN MAKE \$20.00 A DAY

AND JUST ONE MAN ON THE JOB WITH A **KING OF THE WOODS DRAG SAW**

Pushes itself up the steepest hill and over the roughest ground.
 One man will be saved.
 40 ft. to 10 ft. in length.
 Another saved 20 cords in 4 hrs.
 Another saved 20 cords in a day.
 Another writes his neighbors will slash a new tree in 10 minutes.
THERE IS MORE YOU SHOULD KNOW
 Write for Testimonials, and Catalog D-1.

Reierson Machinery Co.
 Manufacturers, PORTLAND, OREGON.

OVER 65 YEARS' EXPERIENCE

PATENTS

TRADE MARKS
 DESIGNS
 COPYRIGHTS & C.

Anyone sending a sketch and description may quickly ascertain our opinion free whether his invention is probably patentable. Communications strictly confidential. **HANDBOOK** on Patents sent free. Oldest agency for securing patents. Patents taken through **Munn & Co.** receive special notice, without charge, in the

Scientific American.

A handsomely illustrated weekly. Largest circulation of any scientific journal. Terms, \$3 a year; four months, \$1. Sold by all newswriters.

MUNN & Co. 361 Broadway, New York
 Branch Office, 625 F St., Washington, D. C.

In any soil, the amount of potash capable of being released by these indirect means is a very small fraction of the total potash in the soil, most of which exists in a form about as soluble as window glass. There is no known profitable method for rendering this inert potash of the soil available fast enough to provide for profitable crops. Whatever temporary expedients we may employ in the present emergency, we must keep in mind that the potash thus removed from the semi-available soil reserves must later be replaced if we are to maintain the soil's productivity. There is danger in the statement that farmers have been using an excess of potash. Crops use on the average about two and one-half times as much potash as phosphoric acid, while the average fertilizer sold contains only half as much potash as phosphoric acid; yet no one claims that we are using too much phosphoric acid. The potash remaining from previous fertilization is practically nothing, except in the limited areas where a ton or more of fertilizer has been used per acre on truck crops. Very rarely is half as much potash applied to the wheat, oats, corn or cotton crop as the crop removes. The potash mines are so numerous and the stocks on hand so large that supplies can be promptly sent forward as soon as European conditions permit freight shipments to be resumed.—H. A. Huston.

Failure of Blossoms to Fruit

The failure of orchard trees to set fruit, in spite of the fact that an abundance of blossoms was produced, is due to one or more of several causes. These are as follows:

1. Self-Sterility. Many varieties of apples and pears are self-sterile. That is, they are not capable of setting fruit properly unless pollen from another variety is used. For example, Bartlett and Kieffer pears, in many localities, when planted in solid blocks, give less satisfactory results than when they are planted with such varieties as Duchess, Lawrence and Anjou. With apples and pears it is good practice to mix varieties. However, if varieties with proper affinities are selected, one variety to furnish the pollen is as good as a number.
2. Frozen Pistils. The pistil, which is the part of the flower to develop fruit, is more easily frozen than other parts of the flower. Hence the pistil may often be frozen while other flower parts are not affected; consequently blossoms are formed but fail to set fruit.
3. Weak Trees. Trees in a weak condition, although blooming abundantly, often fail to set fruit.
4. Rain and Snow. The pistils may be mechanically injured and the pollen washed away by rain or snow at the time when blossoms are open.
5. Excessive Growth of Wood. Blossoms often drop in great numbers when the tree is forming excessive amounts of wood.
6. Over-abundance of nitrogen fertilizers.
7. Diseased buds.



FREE FOR FRUIT RANCHERS

—suggestions by a plumbing expert to save the plumber's bill; buy at wholesale and install your own bath room supplies. Call or write for details of our plan.

STAR-K-DAVIS CO.
 212 Third Street 249 Salmon Street
 PORTLAND, OREGON

Things We Are Agents For

Knox Hats
 Alfred Benjamin & Co.'s Clothing
 Dr. Jaeger Underwear
 Dr. Deimel Linen Mesh Underwear
 Dent's and Fownes' Gloves
Buffum & Pendleton
 311 Morrison Street
 PORTLAND, OREGON



Spray

The Morrill & Morley Way
The ECLIPSE Spray Pump has been in service 25 years. Durable, efficient, economical. The U. S. Department of Agriculture uses it, and you can make it profitable in your orchard, vineyard or potato field. Complete set free, on request.

Morrill & Morley
 Mfg. Co., Box 12,
 Spate Harbor, Mich.

Eclipse Spray Pump

Protect Your Trees

Hawkeye Tree Protectors

Absolute protection against gnawers and borers. Prevent trees from becoming skinned and bruised by cultivator or lawn mower. Made of elm veneer, chemically treated. Easily put on and will last until tree is beyond needing protection. Don't wait until some of your trees are killed—order Hawkeye Protectors now. Regular size 18 inches wide 10 inches high. Price in lots of 100—1 cent apiece, in lots of 1000—1/2 cent apiece. Special sizes made to order. Write for circular and samples.

We make Fruit Baskets—get our price.

Burlington Basket Company
 122 Main St., Burlington, Iowa

8. Spraying. Heavy spraying of trees, especially before pollination, has in some few instances resulted in a loss of blossoms. This is not serious, however.—W. W. Robbins in "The Fruit Belt."

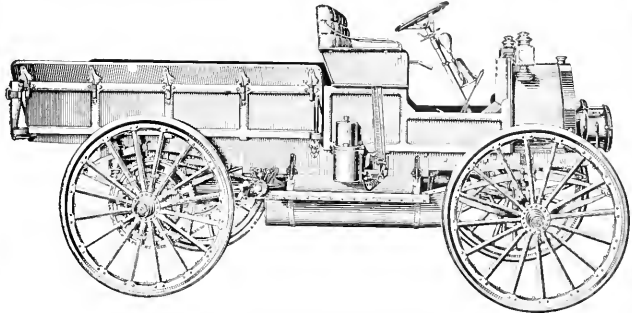
Loganberries

Loganberries designed for marketing fresh, for canning or for evaporation purposes are best when picked at the hard-ripe stage, just as the berries are beginning to turn black. When it is necessary to begin earlier than this and pick the berries before they reach this stage they may be used with a fair degree of success for making jelly, and when it is not possible to pick them fast enough to prevent them from passing the hard-ripe stage they will be found to be at the best stage for making jells, juices and jam. Finally, berries that cannot be cared for until they become moldy, provided they are not actually decomposing, may be made into heavy syrups for confection and flavoring purposes. By thus taking every advantage of the different stages of maturity of the berry crop and by beginning as early as possible and continuing the operations as long as necessary, it is often possible to save and use to the best advantage the entire crop. These conclusions concerning the best use of the loganberry were reached in a series of experiments conducted by Prof. C. I. Lewis and assistants at Oregon Agricultural College. Aside from the information as to the best stage for picking berries the laboratory tests have developed methods of procedure in picking, transferring and manufacturing loganberries with the least expenditure of time and with the minimum loss of fruit.

Three points particularly emphasized by Professor Lewis in picking the berries are that they should be picked early in the morning while it is cool, they should be taken from the vine with a slight twisting motion of the wrist rather than pulled straight from the stem, and the picker should not hold too many berries in his hand at one time. Loganberries picked in the cool of the day were shown to evaporate with better weight and form than those picked in the heat. It was also shown that juice extracted from loganberries when they were cool is less affected by fermentation than when taken from berries that are warm. Indeed it is recommended that if it is impossible to gather the entire picking in the forenoon that those berries picked in the afternoon be stored in a suitable place until the next morning, when the juice will be extracted more satisfactorily. When the berries are picked by a straight pull they are frequently damaged by lateral pressure of the fingers in holding them, and also frequently come away with more or less stems and leaves attached. A gentle twisting motion avoids both of these difficulties, so that the berries are firm, entire and free from trash. Berries, especially when they are ripe, melt down and lose form rapidly when held in the hand. This evidently is due

Use An International Motor Truck

Many an up-to-date successful fruit grower will tell you that we are justified in saying this: Wherever fruit growing is a business, and produce is still handled by horse and wagon, there are respectable fruit profits going to waste.



The International Motor Truck

saves and makes money for thousands of firms in practically all lines of business. Your business deals in perishables that require timely, rapid, perhaps long-distance hauling.

Buy an International and be ready for your daily hauling problems and for emergency trips. The International is simple, sturdy, easy to operate. It is always ready to go, rain or shine, day or night, in all seasons on all roads. It does the work of three or four horse-and-wagon rigs, goes three or four times as fast as one. When it is not in use it puts you to no expense, and when you want it the International will be ready for you.

Our catalogue will tell you of many such features as these: Solid puncture-proof tires; simple, accessible, powerful motor; single lever control; wheels high enough for good traction and ample road clearance; any style of body, etc. If better business interests you write us for more information.

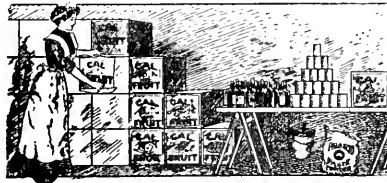
International Harvester Company of America

INCORPORATED

Chicago

USA

Paste for Labeling—"Palo Alto" Paste Powder



added to cold water, instantly makes a beautiful, smooth, white paste. Ready for immediate use at a cost of 10 cents a gallon. No labor. No mess. No spoiled paste.

PASTE SPECIALISTS

Robinson Chemical Works

349-351 Eighth Street

San Francisco, California

One Barrel of "Scalecide"

Will Spray as many Trees as Three Barrels of Lime Sulfur



"Scalecide" has greater vaporizing effect on your orchard—kills more scale, eggs and larvae of insects with half the labor to apply. We can back up this statement with facts concerning the Good Results from Using

"SCALECID"



Send for our illustrated booklet—"Proof of The Pudding". Tells how "Scalecide" will positively destroy San Jose and Cottony Maple Scale, Pear Psylla, Leaf Roller, etc., without injury to the trees. Write today for this FREE book and also our booklet—"Spraying Simplified".

Our Service Department can furnish everything you need for the orchard at prices who'll save you money. Tell us your needs.

We are World Distributors for VRELAND'S "ELECTRO" SPRAY CHEMICALS and Arsenate of Lead Powder (4% per cent), which, used wet or dry, has no equal in strength or texture. Avoid imitations. G. G. PRATT CO., W.P.G. Chemists Dept. D 50 Church Street, New York City

Always
Specify



Then **BE SURE** this brand is on the kegs you get

Honest Quality and Full Count have made them the
World's Standard, which is why you should insist on

“PEARSON’S”

And Accept No Substitute

Pacific Coast Agents

UNITED STATES STEEL PRODUCTS CO.
San Francisco—Los Angeles—Portland—Seattle

J. C. PEARSON COMPANY, Inc., Old South Building, Boston, Mass., Sole Manufacturers

**SHIPPERS
OF
APPLES
PEACHES
PEARS
PLUMS
CHERRIES
ETC.**

When wishing to use the Cleveland market, or desiring reliable information concerning same, write or wire us. We are among the largest receivers here.

SPECIAL FEATURES:

Absolute responsibility, reliable and prompt service. No house in any market excels us in making prompt remittances when goods are sold. Liberal and consistent advances made on consignments. Ample cold and dry storage facilities.

Myers, Weil & Co.
CLEVELAND, OHIO

**The Biggest Apple Dealers
in California**

WRITE OR WIRE US FOR DETAILED
MARKET INFORMATION

A. LEVY & J. ZENTNER CO.

Davis Street (from Washington to Oregon Sts.) San Francisco, California

both to the warmth of the hand and to the increased pressure that results from trying to get too many berries crowded into the hand at one time. It is far better for the picker to take but few in the hand at once and drop them frequently into the hallock or basket used in picking.

Concerning equipment for picking, the square wooden boxes with elevated bottoms, which provide ventilation and prevent crushing, are to be preferred. A tin-topped basket with tapering sides fails to provide for the ventilation and protection of the berry. For removing the fruit from the field, push carts with adjustable wheels are recommended. These carts can be pushed along between the rows where it will be very convenient to deposit the trays of fruit as rapidly as they are filled. Where berries are grown on a small scale the trays may conveniently be carried from the field. In transferring the berries from the field to market, soft-sprung, well-balanced wagons are recommended. It has been found that if the berries are properly picked, put into suitable receptacles and handled with suitable care and regard to the nature of the fruit, they can be transported even a distance of eight or ten miles and still arrive in a first-class condition.

The facts upon which the foregoing conclusions are based will be given to the growers in more detailed form at a later date. It is sufficient at this time to say that the sugar content of the berry rises rapidly at the ripening stage, and that the acidity content lowers in an almost equal ratio. The sugar content of the red loganberry is slightly above three per cent, while that of the dead-ripe berry is about six and one-half per cent. The acidity of the berry when red is more than two per cent, while that of the berry in the dead-ripe stage is a little over one per cent. The pectin content also rises rapidly as the berry ripens. By taking advantage of the results ascertained in these extensive tests it should be easily possible for the grower to care for his entire crop without waste and at the same time market his fruit in the most profitable form.

European Shipments

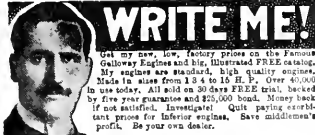
With respect to Europe, exporters are urged to carefully watch the movement and assure themselves of steamer space and a demand on the other side before making shipments. Latest announcements of steamship companies are to the effect that fairly regular schedules will be maintained between America and the United Kingdom. American apple shippers are advised to stimulate the demand and increase their shipments to Latin America and the Orient. It is suggested that by co-operating with the Department of Commerce, extension of trade in this respect can be accomplished. Inquiries relating to these countries should be addressed to the Bureau of Foreign and Domestic Commerce, Washington, D. C. Shippers are urged to apply to the Superintendent of Documents, Government

Cutaway (CLARK)

Disk Harrows and Plows

are for intensive tillage. Ask your dealer to show them. If he doesn't sell CUT-AWAY (CLARK) implements, write us.

THE CUTAWAY HARROW COMPANY
Maker of the original CLARK disk harrows and plows
940 Main Street Higganum, Conn.



WRITE ME!

Get my own, low, factory prices on the Famous Galloway Engines and the Illustrated FREE catalog. My engines are standard, high quality engines. Made in sizes from 1 1/2 to 16 H.P. Over 40,000 in use today. All sold on 30 days FREE trial, backed by five year guarantee and \$25,000 bond. Money back if not satisfied. Investment! Quite paying excellent prices for inferior engines. Save middlemen's profits. Do your own dealer.

BUY DIRECT FROM THE MANUFACTURER

and Save \$50 to \$300 on Gasoline Engines

That come about as near helping your money at home as any way you can think of. Write me before you buy.

FREE Service Department that will help you select and install all the best and make engine you need for your work without cost to you. Let me send you my New 1914 Special Offer. Just write for my catalog and save low prices today.

Address Wm. Galloway, Pres't.
WM. GALLOWAY CO.
1005 Galloway Station, WATERLOO, IOWA



LARGE
HANDY

BUCKET

AXLE
&
GREASE

SMALL
CAN

CAN

WHIT TIER COBURN CO. S.F. SOLE MFRS.

YOU CAN EARN \$50.00 PER DAY

with the Gearless Improved Standard Well Drilling Machine. Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours. Another record where 70 feet was drilled on 2 1/2 gal. distillate at 9c per gal. One man can operate. Electrically equipped for running nights. Fishing job. Engine ignition. Catalogue W. R. REIERSON MACHINERY CO., Manfrs., Portland, Ore.



BUY AND TRY

White River Flour

MAKES

Whiter, Lighter Bread

Printing Office, Washington, D. C., for the following publications, issued by that bureau, which may be secured at the prices shown: Special Agents' Series, No. 62, 30 cents; No. 72, 10 cents; and No. 81, 25 cents; Special Consular Reports, No. 62, 10 cents; and Tariff Series, No. 19a, 5 cents.

Fruit Production in Australasia

The following table gives the estimate of the Fruit World of Australasia of the 1914 crop of apples produced in the different districts and shows, comparatively, the actual productions of 1912 and 1913. It will be remembered that Australasia is in the Southern Hemisphere, with seasons opposite to our own, their winter being our summer and vice versa. The first steamer carrying apples from Australasia is booked to sail therefrom about February 14th, arriving in London about the first of April. It will be seen that about six weeks are required for the trip. The fruit is, of course, shipped entirely under refrigeration:

	1912 Boxes	1913 Boxes	1914 Boxes
Tasmania	822,740	550,188	760,000
Victoria	205,548	384,483	400,000
South Australia	188,965	44,572	150,000
Western Australia	65,205	71,255	60,000
New South Wales	7,213	8,703	2,000

Cement-Coated Nails

A company in Boston, Massachusetts, has obtained a patent on coating wire nails with an asphaltum cement which greatly increases their holding power. Most of the wooden-box factories use these nails, and they are also especially desirable for nailing flooring, siding, etc. The following table gives the comparative adhesive resistance of common smooth wire nails and cement-coated nails:

	Diameter inches	Length inches	Adhesive Resistance
10d common			
Smooth	.145	2 1/2	167 lbs.
Coated	.117	2 1/2	418 "
8d common			
Smooth	.132	2	198 "
Coated	.112	2	316 "
6d common			
Smooth	.097	1 5/8	106 "
Coated	.092	1 5/8	226 "

All nails were driven into the same piece, perpendicular to the grain of the wood. All nails were left with their heads projecting one-quarter inch.—H. J. Wilson, Colorado Agricultural College, Fort Collins, Colorado.

Breaking Up "Plow Sole"

Plow sole, the tough, impervious layer just beneath the customary plow depth, must be broken up before drainage can be effected, says Ira A. Williams, ceramist at the Oregon Agricultural College, in discussing drainage. The action of roots in seeking to penetrate this layer should be aided by deep plowing, sub-soiling and use of clover, vetch and alfalfa, which have power to force their way into very refractory soils. The deep plowing should be done when the ground is dry, either in summer or with the beginning of the first fall rains. If the sub-soil comes up in big lumps so much the better for the purpose. This will bring soil into

Get H-L-F Price on Your House

Thinking of building next spring or later on? Send for H-L-F House Pricer—find out just what materials will cost you. It's free.

Good House and Barn Plans

Send 10c for H-L-F Price Plan Book of 100 houses and 4 for Barn Builder's Guide. Buy lumber and millwork direct of

HEWITT-LEA-FUNCK CO.
(Capital \$1,000,000)
410 Crazy Bldg.
Seattle, Wash.

Get H-L-F
House Pricer



Main 8582 - A 2695

Vacuum Cleaners

DUNTLEY AND OTHERS

Electric and hand power. The only Exclusive Vacuum Cleaner Store in the state. If we haven't what you want, we will get it for you. All machines fully guaranteed. Other machines taken in exchange.

W. L. BENTLEY & CO.

No. 473 1/2 Washington St.

Portland, Oregon

The Question of the Day

With the fruit grower is, how can he derive a revenue from his overripe and unsalable fruits?

It can be done. It is being done. How? By the use of the new and up-to-date process of

DEHYDRATING

Which is the cheapest, quickest and best process ever devised for preserving fruit without changing the taste or flavor, is clean and sanitary. There is always a market for this product. Can be operated by anyone. Capacity to meet all requirements.

For descriptive booklet address

Luther Vacu-Dehydrator Co.
SPOKANE, WASHINGTON

Established 1893

W.P. KRANER & CO.

Importers and Tailors

2nd Floor Couch Bldg.

109 Fourth Street

Portland, Ore.

GEO. E. KRAMER C. W. STONE

MILTON NURSERY CO.

A. MILLER & SONS, Inc.—MILTON, OREGON

Pear, Cherry, Apple, Prune, Peach. Full line Shade & Ornamental Stock

Quality in Nursery Stock is a condition, not a theory, it is something we put into our trees, not say about them. "Thirty-five years" experience enables us to do this.

SALESMEN WANTED

A Catalog and Special Prices on Request

WE MAKE A SPECIALTY OF

Catalogs, Booklets and Circulars

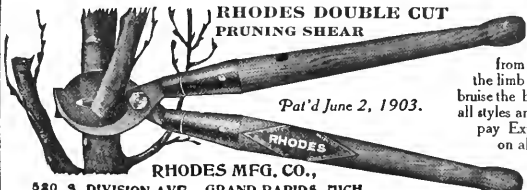
FOR

*Nurserymen, Fruit Growers, Manufacturers
and Selling Agents*

Write us for specifications and
information. Quality and Service

F. W. BALTES AND COMPANY

Fine Printing Portland, Oregon



**RHODES DOUBLE CUT
PRUNING SHEAR**

Pat'd June 2, 1903.

**RHODES MFG. CO.,
520 S. DIVISION AVE., GRAND RAPIDS, MICH.**

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

5,000 Fruit and Vegetable Growers

DO YOU WISH TO REACH THEM?

—IF SO—

AN ADVERTISEMENT IN

"The Modern Barrel"

WILL TURN THE TRICK

"The Modern Barrel" is a descriptive
booklet sent to the growers

Advertising rates \$15.00 per page; ½ page \$10.00.

Your name in the Commission or Wholesale Fruitmen's Directory once 50c.

Sample copy free.

**LEON MILLER, Publisher,
1952 E. Germantown Ave., Philadelphia, Pa.**

Wick & Bro., Philadelphia's Leading Apple House, say: "We are well pleased with your medium and you may reserve the same space for us in the next issue. We find your medium one of the best to reach the apple growers, and this method of advertising brings the desired results.—WICK & BRO., Philadelphia, Pa."

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

productive hith all the sooner. The sole was caused by repeated plowings for many years, during which time the horses puddled the stratum with their walking up and down the furrows when the ground was soft, year after year. It requires much work to break up the stratum, but the resulting added crop production will soon repay the cost.

Books on Horticulture

Published by the Pacific Horticultural Correspondence School, 306 Stock Exchange Building, Portland, Oregon. For sale at following prices, paper binding, postpaid on receipt of price. Mention "Better Fruit" when remitting.

Practical Control of Apple Diseases and Pests. A. L. Melander, B.S., M.S., Head Dept. Zoology, Washington State College. 44 pages. 50 cents.

Planting Fruit Trees. H. C. Atwell, ex-president Oregon State Horticultural Society. 22 pages. 25 cents.

Care and Cultivation of the Orchard. (a) W. K. Newell, president Oregon State Board of Horticulture. 14 pages. 20 cents. (b) J. R. Shepard, ex-vice president Oregon State Horticultural Society. 7 pages. 10 cents. Both for 25 cents.

Grading and Packing Fruits for the Market. A. P. Batcham, ex-president Oregon State Horticultural Society and vice president Northwest Fruit Exchange; John M. Carroll, for four years in charge of packing school National Apple Show. Includes packing of apples and prunes. 16 pages, 6 illustrations. 25 cents.

Handling and Pre-Cooling of Fruits for Transportation. A. V. Stubenrauch, Field Investigations in Pomology, U. S. Department of Agriculture. 27 pages. 50 cents.

Irrigation Practice. W. L. Forers, M.S., professor Irrigation and Drainage, O. A. C. Many valuable tables of water measurement, amount needed, etc. 78 pages, 8 illustrations. 50 cts.

Water Rights. John H. Lewis, C.E., LL.B., State Engineer, president Board of Control of Water Rights, Salem, Oregon. 16 pages. 20c.

Apple Pollination. E. J. Kraus, B.S., Research Assistant in Horticulture, O. A. C. 15 pages. 35c.

Horticulturist and Plant Pathologist formerly with Washington State College, now Horticulturist Arizona Experiment Station. 31 pages. 50 cents.

Pear Growing. C. E. Whisler, president Oregon State Horticultural Society. 13 pages. 25c.

Pollination. E. J. Kraus, B.S., Research Assistant in Horticulture, O. A. C. 15 pages. 35c.

Orchard Heating and Frost Prevention. R. S. Herrick, B.S., Field Horticulturist Colorado Agricultural College. 11 pages. 25 cents.

Small Fruits. Fred T. Burglehaus, expert small fruit grower. 16 pages. 25 cents.

Loganberry Culture. Briti Aspinwall. With recipes by Professor C. I. Lewis for loganberry juice. 16 pages, 3 illustrations. 25 cents.

Prune Growing. H. S. Gile, Secretary Willamette Valley Prune Growers' Association. 6 pp. 10 cents.

Cherry Growing. J. R. Shepard, ex-vice president Oregon State Horticultural Society. 7 pages. 10 cents.

Directions for Orchard Spraying. H. S. Jackson, Plant Pathologist, and H. F. Wilson, Entomologist, O. A. C. Free with any order of 35 cents or more. 8 pages. 10 cents.

Walnut Growing. Ferd Groner, walnut grower. 9 pages. 15 cents.

Co-operation Among Fruit Growers. E. H. Shepard, Editor "Better Fruit." 8 pages. 10c.

All of the above booklets, in paper covers, will be sold for \$3.00, if ordered at one time; but costing \$1.90 is ordered separately.

The following booklets are also in course of preparation by the authors. The exact price cannot be stated for each until received, but will be approximately 75 cents each and will contain from 50 to 100 pages each.

Orchard Insect Pests and Methods of Control. H. F. Wilson, M.S., Entomologist Oregon Agricultural College. About 160 pages, illustrated. 75 cents.

Fungous and Bacterial Diseases of Fruits and Their Treatment. H. S. Jackson, A.B., professor of Botany and Plant Pathology, Oregon Agricultural College.

Choosing an Orchard. C. I. Lewis, M.S.A., head Department of Horticulture, O. A. C.

Soil Fertility and Fertilizers. Herman V. Tartar, B.S., Chemist, O. A. C.

The complete set of above booklets will be sold for \$5.00. The new booklets to be mailed as soon as published.

Hard times cannot be cried down by shouting, but they can be beaten down and driven off by everyone lending a helping hand and showing the way over from the dark side to the bright side.

Remember that every dollar this country had a year ago or five years ago it has today. We have not been drained of our resources. Our factories have not been burned down, our young men have not been killed in tens of thousands, we have not lost thousands of millions in trade, but on the contrary shall gain trade. All we need is to attend to our business, produce, sell, buy of each other, stop pessimistic talk and we shall have all the prosperity we want and possibly more than we deserve.

Herewith Proclaim Their Unshaken Faith in the American Apple

The 1914 crop of apples is being harvested under conditions that have no parallel in the past. There has probably never been a larger crop, our export outlets have been blocked, money is at unheard-of premiums, if obtainable at all, the growers and the trade are all at sea.

Nevertheless STEINHARDT & KELLY are placing contracts for choice blocks of Western box apples from the famous growing districts. They have contracted for approximately

850,000 cases

already and are steadily buying more for storage.

Apples will be paying property this year as in the past. Nothing but lack of confidence makes the 1914 situation different from that in other years.

STEINHARDT & KELLY have been handicapped by as much uncertainty as anybody else, but now, after a careful study of conditions and prospects they are carrying out a conservative but confident policy and take this method of publishing their confidence for the encouragement of the apple trade and apple industry.

The crop now being harvested represents eight to ten months of anxious work by the producers of fine apples. Without distribution growers cannot continue to produce. It is now the duty of the trade to back the growers loyally. Old antagonisms must be dropped on all sides, old fallacies about the "superfluous middleman" must also be forgotten and the foundations laid for a bigger and a more glorious future.

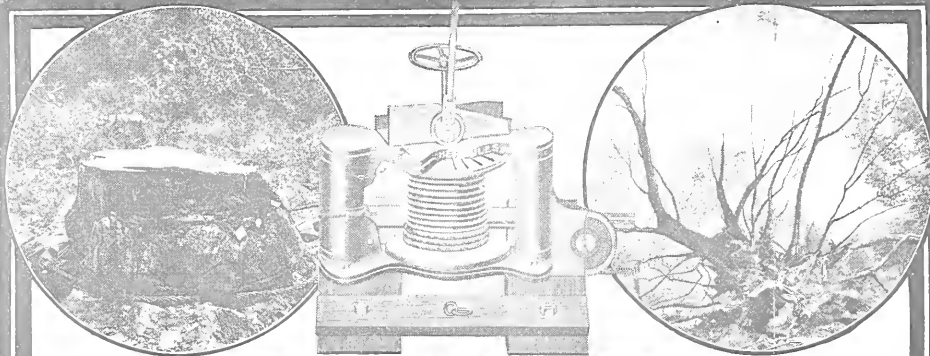
Whether we handle box, barrel or bulk apples it is our duty as distributors to back up our fellow Americans who produce this fruit in which we all have vital and permanent interests. Let us talk less of difficulties and more of the possibilities. The Export outlook may be dark now, yet without exports of any sort we could still consume the whole crop at home at a profit to all concerned. Where there is a will there is a way!

STEINHARDT & KELLY cannot buy all the apples in the United States, but they can buy quantities in keeping with their supplies of past years, and are doing so, and they can and are placing contracts judiciously to sustain and compensate those growers in all the famous districts who have worked hardest to establish and maintain the highest standards in quality, goods and pack.

STEINHARDT & KELLY

Let us all work together towards a constructive end! The 1914 apple deal may be no different from that of other years; it merely looks a little different now.

Buy apples! Buy good apples! Handle them skilfully, work to stimulate consumption, let them go at prices that will encourage use and give everybody a sure but moderate profit. If you do this the 1914 apple deal will eventually be a paying proposition for everybody concerned, grower, trade and public.



Pull Out The Stumps! Here's The Quickest, Easiest, Cheapest Way

FIRST—send me your name on the coupon below—or on a postal. I'll mail you my book that tells all the facts, shows all the figures and gives all the proof about the Hercules All Steel, Triple-Power Stump Puller. Read my book. From cover to cover it's the most interesting catalog you ever received—if you have stumps on your land.

An Acre or More a Day

You will see why and how the Hercules pulls any stump, green tree or hedge in five minutes or less—an acre or more of stumps a day—even if there are 100 to 200 stumps in the acre. The Hercules *has* done it—*is* doing it—for hundreds of other progressive farmers and it will do it for you.

4c Per Stump

Mr. E. C. Culbreath writes, that the cost of operating the Hercules is 4c per stump. That's certainly the cheapest way to pull out the stumps and make room for *money* crops! Why don't you get a Hercules now to pull out *your* stumps so you can raise crops?

What All Steel Means

The Hercules is the only *genuine* all steel Puller made. There are *imitations* of steel, "semi steel," "Manganese Steel" and cast iron pullers. The Hercules is 40% stronger than them—and 60% lighter. Which will you have—the *genuine* steel—or an imitation that may break when you least expect it? Will you take chances on a machine breaking at the first strain—or will you make *sure* of a puller that *won't* break—that is *guaranteed* not to break?

What Triple Power Means

Hercules triple power means a greater pull than you can get out of a 100 H. P. traction engine. Think of it! Is it any wonder that the Hercules pulls biggest stumps like you pull *weeds*? And you can adjust the Hercules to make it single or double power also, giving you three machines in one.

30 Days Trial

I'll send you a Hercules to try for 30 days. See how it works. See how low-down it's built—how the double ratchets insure safety—how it is self anchored or stump anchored—how carefully it is turned and polished to lessen the draft. And see how easily it pulls up the biggest stump in your place.

3 Year Guarantee

I guarantee absolutely to replace any casting that breaks any time within three years whether it is your fault or the fault of the machine. I don't have any arguments as to whether the material or workmanship was defective. Simply send the broken casting back and I will send you a new part at once. That's all there is to my offer—it means just exactly what I say.

Get My Grand Hercules Book Free

Mail me the coupon below—or just a postal. I'll guarantee my book will interest you.

I have a special price offer to make to a few first buyers. Send me your name. I want you to get in on this proposition. You will never regret this move as long as you live. My book shows photos of big stumps, green trees and hedges the Hercules has pulled—shows letters from Hercules owners—proves the value and superiority of the Hercules in a hundred different ways.

All I want to do now is to get my offer and book into your hands at once. If you are troubled with stumpy land, I know you will see the fairness and profit there is for you in my offer. Simply mail me coupon or a postal.

Address, B. A. Fuller, Pres-Ident.

HERCULES MFG. CO.

869 23rd St., Centerville, Iowa



Free Books Coupon

HERCULES MFG. CO.

869 23rd Street, Centerville, Iowa

Gentlemen: Please send me all free books about the only All-Steel Triple Power Stump Puller. Also your 30-day free trial and low-price-to-first-buyers proposition.

Name

Town

State..... R. F. D.....

BETTER FRUIT

VOLUME IX

JANUARY, 1915

NUMBER 7

ANNUAL SPRAYING EDITION
ALSO FEATURING THE NATIONAL APPLE SHOW

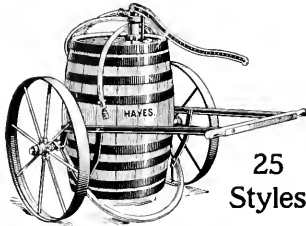
We wish every Fruit Grower
a Happy and Prosperous
New Year

WITH the right kind of effort
in the right way—through
economy, diversity, by-pro-
ducts, a wider distribution,
advertising and improved marketing
methods, the fruit growers can look
forward to greater achievements and
increased prosperity. *EDITOR.*

BETTER FRUIT PUBLISHING COMPANY, PUBLISHERS, HOOD RIVER, OREGON

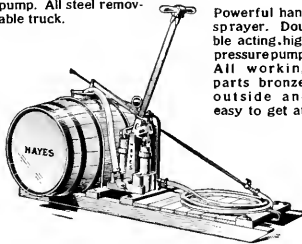
Subscription \$1.00 per Year in the United States; Canada and Foreign, Including Postage, \$1.50

Single Copy 10 Cents



25
Styles

For orchards, estates and public parks. Powerful and easy working pump. All steel removable truck.

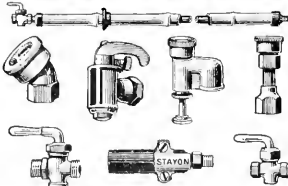


Powerful hand sprayer. Double acting, high pressure pump. All working parts bronze, outside and easy to get at.

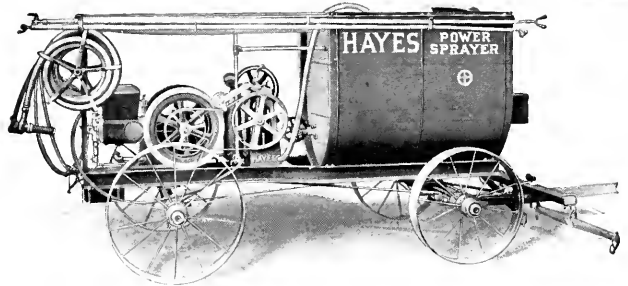
Capable of 300 lbs. pressure. Powerful leverage works easily at 200 lbs.



Good barrel sprayer for small orchards. All bronze working parts. Easy to remove, clean and replace. Adjustable for any size barrel.



100 Hose, Nozzles and Fittings. Designed for high pressure. Proof against trouble and pressure losses. Clamps cannot blow off.



HIGH Pressure Spraying is plus spraying; *it is 100% efficient.* The keynote of successful spraying is thoroughness, and thoroughness means 100% clean fruit. Every cider apple, blight-eaten pear or scaly peach increases the cost of production and lessens the quantity of salable fruit.

High pressure completely atomizes the solution into a penetrating fog-like mist that *seeks out* and *adheres* to every particle of foliage. It reaches protected pests that lurk in the innermost crevices of the bark, and beneath the fleshy stamens of the apple blossoms, and easily controls those on the outside surface. Mere "sprinkling" at low pressure will not give practical control.

Not only does High Pressure spraying insure a better quality of fruit but requires less solution, less time to apply, hence lessened cost. A High Pressure Power Sprayer will pay you bigger dividends than any other orchard investment you can make.

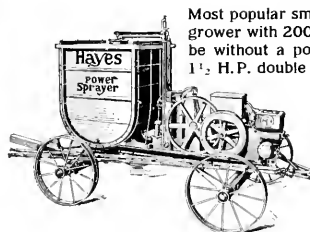
Hayes Power Sprayers are tested to 500 lbs. and are *guaranteed* to maintain 300 lbs. working pressure. They are built for constant operation at high pressure and enduring service. This not only requires the most thorough mechanical construction but the highest grade materials, hose and fittings.

We manufacture 25 styles of large and small Hand and Power Sprayers for orchard, field crops, shade trees, hops, poultry, painting, home and garden use. Complete outfits or separate spray pumps, hose, nozzles, fittings, bamboo rods, etc.

Complete stocks carried at Eastern, Central and Western distributing points.

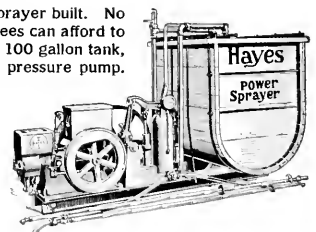
Write! Send postal for **FREE** Book 32 on High Pressure Spraying and complete catalog of **Hayes** Sprayers.

GALVA, ILLINOIS



Most popular small power sprayer built. No grower with 200 or more trees can afford to be without a power outfit. 100 gallon tank, 1 1/2 H.P. double acting high pressure pump.

With or without truck.



300 lbs. Pressure Guaranteed.



SOLUBLE SULPHUR COMPOUND

THE SULPHUR SPRAY PERFECTED

Manufactured by THE CHAS. H. LILLY CO., Seattle, under Niagara Sprayer Co. patents.

ANALYSIS by a national authority in chemistry, as published in previous issues of this journal, verifies our claims as to the chemical composition of Soluble Sulphur Compound

HIGH IN POLYSULPHIDES

MAKES A TRUE SOLUTION

A PERFECT SPRAY

In the season of 1914 the amount of Soluble Sulphur used in the United States and Canada would equal 24,000 barrels of 33° lime-sulphur solution.

Three years' use — three years' success.

Experiment stations, after two and three years' testing, find this spray, at strength recommended by the manufacturers, equal to best results obtained with lime-sulphur. Check and count tests have repeatedly shown 99% effective against San Jose Scale, and in comparison better than the strongest lime-sulphur solution.

The best of all sprays for San Jose Scale, Apple Scab, Peach Leaf Curl, Powdery Mildew, etc.

We make strong claims. We are able to back them up against any contradictions by anybody whomsoever.

Soluble Sulphur Compound as produced under our patents is a scientific achievement, a new discovery, an improvement upon old methods. The books don't tell about it. That is why chemists of limited experience do not know what it is, and cannot tell why it does the work.

Look above the fog. When most every manufacturer of the old sprays is found bending every effort to produce a similar soluble sulphur there is the strongest kind of recognition of value.

Beware of such substitutes. There is only one tried and proved Soluble Sulphur Compound.

THE CHAS. H. LILLY CO.

PORTLAND



SEATTLE

The First National Bank

Hood River, Oregon

Capital and Surplus
\$135,000

4% Interest Paid on Savings and Term Deposits

F. S. STANLEY, President
E. O. BLANCHAR, Cashier

LESLIE BUTLER, President
TRUMAN BUTLER, Vice President
C. H. VAUGHAN, Cashier

Established 1900

Butler Banking Company

HOOD RIVER, OREGON

Capital \$100,000.00

4% Interest Paid in our Savings Department

WE GIVE SPECIAL ATTENTION TO GOOD FARM LOANS

If you have money to loan we will find you good real estate security, or if you want to borrow we can place your application in good hands, and we make no charge for this service.

THE OLDEST BANK IN HOOD RIVER VALLEY

LADD & TILTON BANK

Established 1859

Oldest Bank on the Pacific Coast

PORTLAND, OREGON

Capital \$1,000,000.00

Surplus 1,000,000.00

Officers:

W. M. Ladd, President
Edward Cookingham, Vice President
W. H. Dumckley, Cashier
B. S. Howard, Jr., Assistant Cashier
J. W. Ladd, Assistant Cashier
Walter M. Cook, Assistant Cashier

INTEREST PAID ON TIME DEPOSITS AND SAVINGS ACCOUNTS

Accounts of banks, firms, corporations and individuals solicited. Travelers' checks for sale, and drafts issued available in all countries of Europe.

Store Your Apples in Spokane

The Natural Storage Center

Take advantage of storage in transit rate and the better market later. Write us for our dry and cold storage rate and information.

Ryan & Newton Company

SPOKANE, WASHINGTON

The Paris Fair

Hood River's Largest and Best Store

RETAILERS OF

EVERYTHING TO WEAR

AGENTS FOR

HAMILTON & BROWN AND THE BROWN SHOES

HART, SCHAFNER & MARX CLOTHES

MANHATTAN SHIRTS

JOHN B. STETSON HATS

NEMO CORSETS

Strictly Cash—One Price to All

Things We Are Agents For

Knox Hats

Alfred Benjamin & Co.'s Clothing

Dr. Jaeger Underwear

Dr. Deimel Linen Mesh Underwear

Dent's and Fownes' Gloves

Buffum & Pendleton

311 Morrison Street

PORTLAND, OREGON

IF YOU WANT TO MARKET YOUR

FRUIT

RIGHT

ALWAYS SHIP TO

W. B. Glafke Co.

WHOLESALE FRUITS AND PRODUCE

108-110 Front Street
PORTLAND, OREGON

W. H. DRYER

W. W. BOLLAM

DRYER, BOLLAM & CO.

GENERAL

COMMISSION MERCHANTS

128 FRONT STREET

PHONES: MAIN 2348
A 2348

PORTLAND, OREGON

LEVY & SPIEGL

WHOLESALE

FRUITS AND PRODUCE

Commission Merchants

SOLICIT YOUR CONSIGNMENTS

Top Prices and Prompt Returns

PORTLAND, OREGON

STORAGE

Ship your Furniture to us to be stored until you are located

TRANSFER & LIVERY CO.
Hood River, Oregon

The Old Reliable

BELL & CO.

Incorporated

WHOLESALE

Fruits and Produce

112-114 Front Street
PORTLAND, OREGON

Richey & Gilbert Co.

H. M. GILBERT, *President and Manager*

Growers and Shippers of

YAKIMA VALLEY FRUITS AND PRODUCE

Specialties: Apples, Peaches, Pears and Cantaloupes

TOPPENISH, WASHINGTON



Stop at "The Oregon," Hood River
Clean Rooms--Excellent Meals--One block from depot

Mark Levy & Co.

COMMISSION MERCHANTS

Wholesale Fruits

121-123 FRONT AND
200 WASHINGTON ST.

PORTLAND, OREGON

A PANORAMIC VIEW

of the

Famous Hood River Valley

showing

13,000 acres of apple orchards, Mount Hood, Mount Adams and the Columbia River Gorge.

40 inches long Price \$1.00

SLOCUM & CAMFIELD'S BOOK AND ART STORE
Hood River, Oregon

W. F. LARAWAY

DOCTOR OF OPHTHALMOLOGY

EYES TESTED  LENSES GROUND

Over 30 Years' Experience

Telescopes, Field Glasses
Magnifiers to examine scale

Hood River Oregon and Glenwood Iowa

BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

Insecticides and Fungicides for Insect and Fungus Troubles

By S. W. Foster, Entomologist, General Chemical Company of California, San Francisco

THE most economical spray that can be applied to fruit trees is the spray, or combination of sprays, that will do the most good toward mitigating, controlling or preventing the greatest percentage of pests, and give the tree, fruit and foliage protection over the longest time. The biggest mistake, often made by fruitgrowers when the time comes to spray, is to figure the cost of the materials in the tank without more than a passing thought for the balance sheet at the end of the season, or the final effects on the tree. It often happens that a tank full of spray costing the grower less than one cent per gallon is expensive, when a different combination costing two or three cents per gallon would be far more economical. Knowing that two different kinds of material have equal value, we should of course use the less expensive. But for the best success we must know that they are equal or else take the best preparation.

In lime-sulphur solution, the amount of sulphur in solution is the important factor, provided the finished product is a clear liquid free from sediment. With oil sprays, the amount and grade of oils used (this refers to mineral, animal and vegetable oils) as well as the manner of emulsifying and the penetration must be taken into consideration. With arsenate of lead the amount of arsenic oxide in proper combination with lead oxide, together with ease of handling or mixing with water, the adhesive qualities and a low water soluble-arsenic content are important. In bordeaux mixture the amount of quickly available copper is the valuable element, provided the mass is finely divided to facilitate spreading and adhesiveness.

Fruitgrowers should become more familiar with the troubles to be treated—should watch the troubles more closely—study the nature and habits of the insect or fungus and know the time and under what conditions it is most susceptible to treatment with the greatest good and least harm to the tree. Most of the scale insects on deciduous trees are best controlled by spraying during the dormant season. Late winter and early spring is preferable, provided the work can be done when the trees are dry and the temperature is above freezing point. This treatment, if properly timed, is effective against eggs of green aphid and will control leaf-blister mite. Fungus scab, mildew, codling moth, leaf hoppers, red spiders, etc., must be looked after during the growing period.

Just as the most economical spray is the one that gives the best results, so it is that the most economical spray machine is the one that will do the best work, deliver a large volume of spray under high pressure, easy to operate, and one that will keep on going. Time is an important factor in spray operations, and the delays caused by breakdowns or failure to do the proper work quickly are often more costly than the price of a new and good outfit. Too

gallons of spray. A preparation containing less sulphur in solution, regardless of name or brand, should be used relatively stronger. One containing 20 per cent sulphur in solution should be used at the rate of 1½ gallons for 100 gallons of spray. So far as known at this time nothing can be added to lime-sulphur solution to economically increase its efficiency against scale insects in winter. If it is a clear liquid, free from sediment, with all the sulphur and lime in actual solution and used at sufficient concentration, under favorable weather conditions, it will do the work. However, when used in early spring when purple aphid is present the addition of nicotine will be of benefit.

Oil Sprays.—Various oil emulsions, miscible oils and soluble oils have received considerable attention during recent years. For use during the winter, crude-oil emulsion is the more desirable for all scale insects, although good results can be obtained with some of the miscible oils and distillate emulsions when used in the late winter or very early spring. The prepared products now on the market differ in composition so that it is not feasible to give definite directions for proper dilutions. The recommendations of the manufacturers are usually correct, although it may be necessary to vary this sometimes to meet special cases. When crude-oil emulsion is made by the grower from crude oil or fuel oil purchased on the market it should be used at rate of 12 gallons of oil, with sufficient soap for emulsifying, to each 100 gallons of spray. Crude-oil emulsion is particularly valuable for the control of the large Lecanium Schlaes (such as the European fruit scale, hemispherical scale, etc.), the scurfy scale, oyster-shell scale for moss and lichens and for heavy encrustations of San Jose scale where lime-sulphur solution does not give sufficient penetration.

For San Jose scale and blister mite on apples and pears, spray in the early spring, as the cluster buds begin to swell, but before opening, using lime-sulphur solution at the rate of 12 gallons to each 100 gallons of dilute spray. In addition to controlling San Jose scale, this will also aid in controlling the early infections of scab, and will very largely control the green aphid and purple aphid of apple trees. To make this treatment more efficacious against heavy infestations of purple aphid, Black Leaf "10" may be added at the rate of 1 pint to 200 gallons of dilute lime-sulphur solution. It is uni-

Features of this Issue

INSECTICIDES AND FUNGICIDES
FOR INSECT AND FUNGUS
TROUBLES

SEVENTH NATIONAL APPLE SHOW
AND FRUIT PRODUCTS
CONGRESS

PROPER AND THOROUGH
SPRAYING

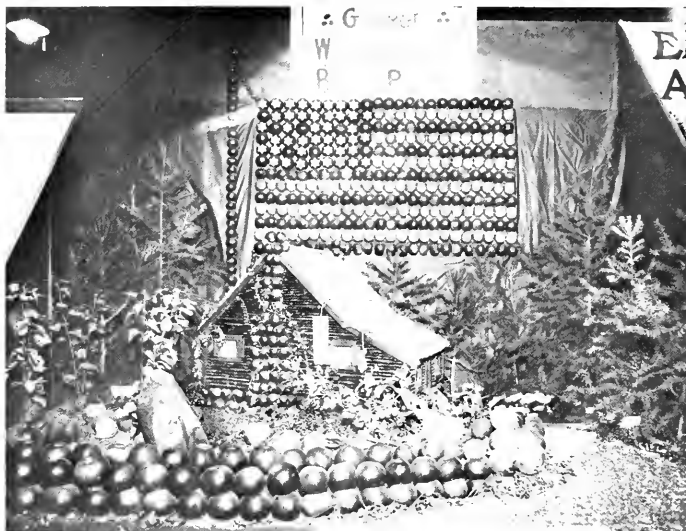
CROWN GALL

COMMERCIAL WALNUT GROWING
IN THE UNITED STATES

THE SAN JOSE SCALE INSECT
APPLE SCAB

much emphasis cannot be put on thoroughness of the work. In spraying for scale insects every particle of the tree, from the ground to the tip of the longest twigs, must be covered on all sides. For scab and mildew, all the fruit, fruit clusters, foliage, twigs and limbs must be thoroughly covered. At the first spraying for codling moth every calyx cup should be filled with poison, and at later sprayings the surface of every apple covered with a thin film of spray. To effectively control red spider, mites and leaf hoppers, cover all foliage on both sides.

Lime-sulphur solution is the generally accepted and most widely-used treatment for San Jose scale. When this species alone is to be considered in moderate numbers, or when leaf-blister mites and green-aphid eggs are present, it is probably the best-known remedy. It possesses the added value of a fungicide, when used in late winter, that does much good in checking early developments of scab. For success in controlling scale insects, however, it must be used at sufficient concentration to do the work. As a rule, lime-sulphur solution containing 25 per cent sulphur in solution should be used at the rate of 12 gallons for each 100



George Washington's Birthplace, made of apples, entered by Miss Fanny Break, Spokane, at the Seventh National Apple Show, Spokane. This won first prize of \$150 for the best original feature entered by an individual.

versally good practice to spray apple orchards once a year with lime-sulphur solution when the early fruit buds begin swelling in early spring. It will certainly be a big help to prevent accumulation of many troubles, in addition to controlling specific troubles mentioned above.

For oyster-shell scale, scurfy scale, Italian pear scale and the large Lecanium scales, and for accumulations of moss and lichens on the trunk and limbs, spray the trees as late in the spring as possible, without danger of injuring the young growth and fruit buds, with crude-oil emulsion at the rate of 10 to 12 gallons to each 100 gallons of dilute spray. In cases of severe infestations of oyster-shell scale, this first application may not be sufficient and a second spraying with distillate-oil emulsion, about 2 per cent concentration, combined with atomic sulphur for scab and mildew and arsenate of lead for codling moth, will be a decided aid. The crude-oil treatment is very efficacious on trees covered with moss and lichens, under which some of the smaller scale insects often hibernates.

During the growing period, it is often necessary to spray for many different troubles at or near the same time. When the right materials are used it is often possible to put several into the spray tank at the same time and make an effective fungicide and insecticide treatment at the same application. Many such combinations have been in use for some time, but even at this time the failure to use the right materials, or to mix them in the right proportion, causes considerable loss. In the Pacific Northwest the principal troubles to be controlled on apple trees during the growing period are scab, mildew, codling moth, aphids, red spider and leaf hoppers. The codling moth is a well-

known pest in all apple-growing regions and will not be discussed in detail at this time. Leaf hoppers and red spiders occur in more or less limited areas of the Northwest, and both are easily discernible when present in injurious numbers. The rosy-apple aphid (or brown aphid) feeds in the developing fruit clusters, blossoms and on the young fruit, stunting the growth and causing it to be deformed. The green-apple aphid feeds on the foliage and the young twig growth, curling the leaves and generally stunting the growth. With powdery mildew, the fungus attacks the foliage and current year's twig growth. In some cases blossom clusters and young fruit are attacked and the growth stunted, causing the blossoms to be short stemmed and the stems thickened, the fruit reduced in size, and in some cases checked and marked by the growing mycelium of the fungus. Mildew produces white or grayish areas on the foliage and young twig growth, preventing the normal development of the foliage and checking the twig growth which reduces the vitality of the tree.

Bordeaux mixture and lime-sulphur solution are not to be relied on for the control of mildew, according to Ballard and Volck (United States Department of Agriculture, Bulletin No. 120). Solutions of copper or sulphur in the form of sulphides, where the sulphur is in actual solution, are not effective nor advisable for mildew control. Precipitated sulphur, colloidal sulphur or other forms of very finely divided sulphur in condition suitable for liquid spraying give far better results. Among these are the iron-sulphide mixture and atomic sulphur, a commercial preparation in paste form ready for dilution in spray tank. This form of sulphur, in addition to its direct effect on the

fungus, gives considerable stimulation to the foliage and strong, vigorous foliage is an important step toward mildew control. Under these conditions it is of special importance that the first application be made early in the season, preferably at the time of the first spraying for codling moth. Atomic sulphur and arsenate of lead may be used at the same time. In fact if atomic sulphur, 6 to 8 pounds to 100 gallons of water, is combined with arsenate of lead for the first two sprayings for codling moth it will usually give satisfactory control. In some sections where mildew grows very rapidly it may be necessary to make an additional spraying with atomic sulphur between the first and second spraying for codling moth.

Apple scab is causing more injury in the Northwest each year and fruitgrowers must give closer attention to time of application and thoroughness of work. The first spraying, to be successful, must be put on before the early infections take place in the bud clusters. This should, as a rule, be done as soon as the clusters begin spreading. The term "pink spray" is often loosely translated to suit the convenience of someone or to fit in with some other work. To be safe, put this first spray on, and do it thoroughly, when the earliest buds begin to show pink and do not wait until blossoms are appearing, when many infections of scab may have taken place. It is of special importance to get this "pink spray" on early when the late-winter spray of lime-sulphur solution has not been used.

Obviously the least number of applications that will control all these troubles and with the least amount of resulting injury is desirable. As young apples are very easily russeted and injured by the use of some of the well-known fungicides, especially in combination with arsenical sprays, it has been necessary to proceed with considerable caution in advocating too many combinations. Also, the advent of light-distillate emulsions and similar oil sprays as safe, effective treatments for aphids and similar troubles, gives another angle to the possibility of combinations—also impossibilities. Neither lime sulphur nor bordeaux mixture should be used with oil sprays. However, recent investigations indicate that at least one form of nicotine can be safely combined with bordeaux mixture. Nicotine is, of course, a safe and effective combination with lime sulphur.

Without burdening you with further details, and assuming that the winter or dormant spraying has been properly applied, the following schedule is suggested, and it is done advisedly with the best knowledge to be obtained from latest investigations. As soon as cluster buds have spread open, but before blooming, it is time to spray for scab, and where scab is the only fungus trouble either lime-sulphur solution (3 gallons to 100) or bordeaux mixture (6 to 8 pounds of commercial paste to 50 gallons, or 3-5-50 formula if made at

home, should be used). When aphis is also present and has not been killed by previous sprayings, add Black Leaf "10" (at rate of 1 pint to 200 gallons dilute lime sulphur or bordeaux mixture). When aphis infestations are heavy, or when woolly aphis is present, and where a more penetrating preparation is desired, it is advisable to make an extra application with distillate-oil emulsion (3 per cent) plus Black Leaf "10" (1 pint to 200 gallons). Where mildew is prevalent along with aphis infestation, atomic sulphur, distillate-oil emulsion and Black Leaf "10" may be used together for this "pink" spray.

As soon as most of the petals have fallen from the tree it is time to spray for codling moth and any leaf-eating caterpillars that may be present, and the important spraying for mildew, also time for the second spraying for scab and for any green aphis that have not been killed by previous treatments. Use arsenate of lead paste, 1 to 5 pounds, or arsenate of lead powder, 2 to 2½ pounds to 100 gallons of water, for codling moth and chewing insects, adding atomic sulphur at the rate of 12 pounds to each 100 gallons of water for scab and mildew. If green aphis, woolly aphis or thrips are present add Black Leaf "10" at the rate of 1 pint to 200 gallons. All spraying must be done under high pressure and every calyx cup should be filled. Use a tower platform on the spray machine to enable one man to spray from above and cover all portions of the trees and fruit buds not thoroughly sprayed from the ground.

If this spraying is thoroughly done, the second application should be applied from three to four weeks after the petals fall from the trees, using



Exhibit of the Spokane Valley at the Seventh National Apple Show, held in Spokane November 16 to 21, 1914. This display won first prize of \$100 among the displays for irrigated districts.

arsenate of lead paste, 1 to 5 pounds, or arsenate of lead powder, 2 to 2½ pounds to 100 gallons of water, for codling moth, with atomic sulphur, 10 pounds to each 100 gallons of water, for scab and mildew. In addition to its value as a fungicide, atomic sulphur will effectually control any red spiders or mites that may be present at this time. All of the aphis, both the green aphis and purple aphis, should have been killed prior to this time. How-

ever, if woolly aphis is present, Black Leaf "10" should be added to the dilute arsenate of lead and atomic sulphur.

The third spraying for codling moth should be applied about ten weeks after the petals fall. This may be definitely known for each section by collecting a large number of first-brood worms and allowing them to pupate among rags or paper in a cage suspended in a tree, or kept in the shade on the ground. Spray when the first moths emerge in the cage, as the young worms will begin entering the fruit within a week or ten days after the moths begin flying. If scab, mildew, red spider or mites are present, use atomic sulphur at the rate of 10 pounds to each 100 gallons of water, adding arsenate of lead as usual for codling moth.

The treatment outlined above, if properly applied, will effectively control codling moth, fungus scab, mildew, red spiders and green aphis. Where atomic sulphur is used at each application it will greatly reduce the infection of leaf hoppers when such are present. Where scab and red spiders are not present and atomic sulphur is used only for mildew, 6 to 8 pounds to 100 gallons of water will be sufficient concentration. However, for scab use at least 12 pounds to each 100 gallons. In sections where late infestations of codling moth cause injury a fourth application of arsenate of lead may be advisable.



Judges at work in the Women's Department of the Seventh National Apple Show, in which more than 2,000 entries were exhibited. From left to right the judges here shown are: Mrs. W. G. Hall, Spokane; Miss Sue Lombard, North Yakima; Mrs. S. C. Seuffelbury, Spokane; Mrs. Elizabeth Lamb, Spokane; and Mrs. D. L. Bredt, Wenatchee.

F. A. BISHOP, Secretary
HOOD RIVER ABSTRACT COMPANY
 HOOD RIVER, OREGON
 ABSTRACTS INSURANCE
 CONVEYANCING

Seventh National Apple Show and Fruit Products Congress

By Robert S. Phillips, Spokane, Washington

THE Seventh National Apple Show and Fruit Products Congress, held at Spokane in November, was epoch-making because it brought about the first concrete and organized effort to utilize the surplus fruits and vegetables of the Pacific Northwest by the manufacture of by-products. Two years ago the Spokane Apple Show provided the medium for the co-operative organization of growers under the standard of the North Pacific Fruit Distributors. Some will argue that 1914 ushered in a movement of even greater importance than the co-operative marketing of fresh fruits. At all events, all agree that both subjects are of great moment, and the important thing is that a start was made toward converting an astonishingly large item of loss to the profit side of the ledger when the men assembled at the apple show decided to get busy at once to find a solution of the problem. Out of the mass of discussion on the memorable Thursday, November 19, there emerges the fact that the following ten men were appointed to form a central by-products organization: H. M. Sloan, Bitter Root, Montana; P. A. Weyrauch, Walla Walla; G. C. Corbaley, Spokane; Conrad Rose, Wenatchee; Alexander Miller, North Yakima; W. H. Paulhamus, Puyallup; Truman Butler, Hood River; D. A. Snyder, Dayton, Oregon; J. H. Holt, Eugene, Oregon; M. J. Higley, Payette, Idaho.

The appointment of the "Big Ten" was the sequel to the adoption by the conferees of the following resolution: "Resolved, that we recommend to the by-products convention that a board of ten be appointed, representing the different fruit producing districts of the Northwest, with power to act in the formation of a by-products organization along the general lines recommended by the by-products committee, including such effort as they may find practical to bring the present fresh fruit selling agencies into more harmonious action, and to take such additional action as the board may deem wise. Resolved, that as soon as possible the permanent representative of each district be referred to the growers and by-products institutions of each district in such a manner as the board shall desire. Resolved, that the new board be selected by a committee consisting of H. C. Sampson, W. H. Paulhamus and F. E. Sickels."

This action was not taken on snap judgment or without full knowledge of present conditions and future contingencies. The conference already had received a comprehensive report from H. C. Sampson of Spokane, former secretary of the North Pacific Fruit Distributors—a report based on a year's survey of Northwestern orchards and farms by a committee of which Mr. Sampson was chairman. Some of the things this committee found are worthy of mention. For instance, Mr. Sampson reported a total fruit acreage in the

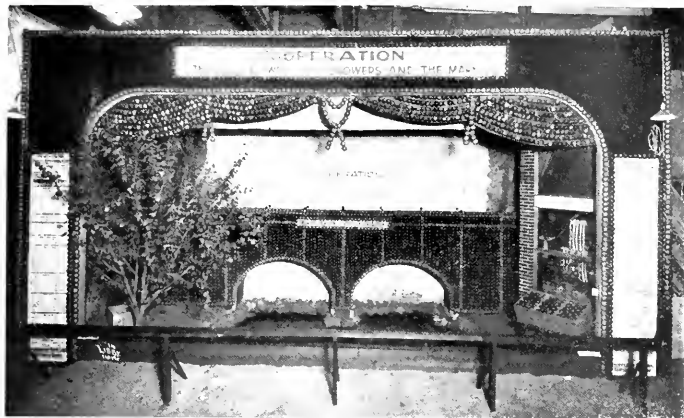
Northwest of 605,000 acres, which would produce ultimately 150,000 cars of fruit, of which the railroads could furnish 30,000 cars and 20,000 cars could be stored in the Northwest, leaving a total of 100,000 cars to be cared for in by-products plants. In 1914, according to the report, of 12,000 cars of apples in the Northwest, 5,050 cars were combined "C" grade and five-tier fruit not large enough or good enough to be wisely salable.

"Growers must adjust their ideas away from the basis of the high prices of a few years ago to a basis of modest profit on carefully tended, economically managed orchards," said Mr. Sampson. "The vital factor is the conservation of high grade fruit and the assurance of a reasonable price for green fruit. Montana does not have a single cannery or evaporator within her territory. Nevertheless during 1913 Montana imported 60,000 cases of canned fruit, 70 per cent of which was peaches and pears. She imported 10 cars of apple cider vinegar and 20 cars of sweet cider. She imported 125,000 cases of tomatoes, 75,000 corn, 60,000 peas and 25,000 beans, or a total of 285,000 cases of canned vegetables. No figures are obtainable as to her importations of dried and evaporated fruits and vegetables. Idaho in 1913 shipped out 175 tons of dried apples, 50 of dried prunes, 75 of other dried fruits, 25 of canned berries, 100 of canned peaches, 25 of canned rhubarb and 50 of beans, but during that same year the same state imported 185 tons of dried apples, 75 of dried prunes, 150 of dried peaches, 100 of other dried fruits, and 950 of canned fruits and vegetables. Her imports were a total of 96 tons greater than her total exports.

Our present needs in the four states, as shown by excess of imports over exports, the natural heavy increase of by-products consumption, as shown by the report of the committee, and the success of the State of California, all indicate a large output possible from the Northwest at fair prices for our own manufactured products. Through the co-operation of our own railroads, wholesalers, retailers and buying-at-home leagues; by the stimulation of lumber camp trade, and with our present home and Alaskan needs, surely we can increase our consumption materially in our own home territory. The committee finds a number of surprising things. Much fruit goes to waste in many Northwestern towns and cities, and the same variety of fruit, canned or evaporated in California, is found on the merchants' shelves in these same villages. Annually California imports great quantities of Royal Ann cherries for maraschinos, imports hundreds of tons of Oregon pears, and exports back to this country and the Canadian territory this same fruit. Some districts let hundreds of tons of apples go to waste and import every pint of vinegar they use. Corn canned in the West is shipped to the East and returned under Eastern labels. Vinegar of the West is shipped in barrels to the East, put into cases, returned to the Northwest and sold at four times the price it was bought for. And all these products are from our own home states but bear a foreign label, thus losing to us the advertising value. California supplies the dried and canned fruit largely for our own states and the territory north of us. She uses thousands of tons of peach seeds, the kernels being processed and



Mimchaha, the unique exhibit of Mrs. Edith A. Prouditt, Fairfield, Washington, winning second prize of \$100 among original features entered by individuals at the Seventh National Apple Show



The striking exhibit of the North Pacific Fruit Distributors at the Seventh National Apple Show, Spokane. This won first prize of \$100 for the most original feature entered by firms, corporations, etc., for advertising purposes.

sold as 'bitter almonds' or shipped to Germany and there used for the manufacture of prussic acid. The committee is unanimous in its conclusion that a central by-products organization is necessary for the salvation of our fruit and vegetable industry. Therefore the committee unanimously agreed to call this convention today for the purpose of forming a central by-products organization whose functions, the committee recommends, shall be: First, to act in an advisory capacity to all districts contemplating establishing plants and to employ experts whose services are to be paid for by such districts. Second, to arrange for a central selling agency for the handling of by-products."

It is doubtful if any other event ever held in the Pacific Northwest accomplished so much in the way of educating the people about the varied uses of the apple as did the women's department of the Seventh National Apple Show. Thousands of people witnessed the cooking demonstrations and heard the lectures given each morning, afternoon and evening by the instructors and students of Washington State College and University of Idaho and by experts employed by the Oregon-Washington Railroad & Navigation Company and the Washington Water Power Company. The college demonstrations took place in the women's auditorium, which had seating facilities for 600 persons, and the Oregon-Washington Railroad & Navigation Company and Washington Water Power Company had large booths of their own, equipped with electric ranges. Every demonstration attracted its crowd, and the men showed almost as much interest as the women in watching the experts as they prepared the apple in scores of different ways. The women's department, in which nearly \$1,000 in prizes were distributed, brought out approximately 2,000 entries of pies, dumplings, jellies, jams and a hundred and one other apple preparations prepared by housewives. Arranged in racks and accompanied by the recipes followed in the making, these entries

made a very imposing and attractive spectacle.

The busiest persons at the show were the judges who had the task of selecting the winners in this division of the show. Given six days in which to determine the respective merits of 2,000 different apple preparations, they completed their work at 5 o'clock on the afternoon of the sixth day. Each judge probably broke a world's record when she tasted 2,000 different dishes in that length of time. The women who did this were: Miss Sue M. Lombard, North Yakima; Mrs. D. L. Pratt, Wenatchee; Mrs. W. A. Ritz, Walla Walla; Mrs. S. C. Seantlebury, Spokane; Mrs. W. G. Hall, Spokane; Mrs. Elizabeth R. Lamb, Spokane.

But it must not be supposed that the apple in its native state was not at the show. Some hundreds of thousands of the world's finest adorned the big racks. After a casual glance at the apple entries, the judges—A. P. Bateham of Portland, Charles L. Hamilton of North Yakima and W. S. Thornber of Lewiston—ventured the opinion that

they would complete their work in three or four days. When they got into the work, however, they found the quality of the apples so uniformly high and the contests so close that they had to extend themselves to finish after six days of exceedingly hard work.

Attendance considered, this year's apple show was the most successful in history. About 60,000 people paid their way to the spacious grounds within two blocks of the business heart of Spokane. The show itself was well arranged and set a new mark for beauty of arrangement and excellence of feature exhibits. The industrial department included a number of "live" exhibits or demonstrations of orchard appliances, which were operated on the grounds for the practical education of the growers. By way of entertainment the show was unusually attractive. Each afternoon and evening Chiapparelli's Italian Band, a high class organization, gave concerts, and the Mendelssohn Male Chorus of sixty voices sang every evening. Two mornings were required for the completion of the world's championship apple packing contest, which was won by M. B. Emerson of Opportunity, with C. L. Poynter of Otis Orchards second and Ed. Remy, Jr., of North Yakima third. First, second and third prizes in this contest were \$50, \$25 and \$20, respectively.

Prizes and the Winners

TWENTY-FIVE BOX LOTS

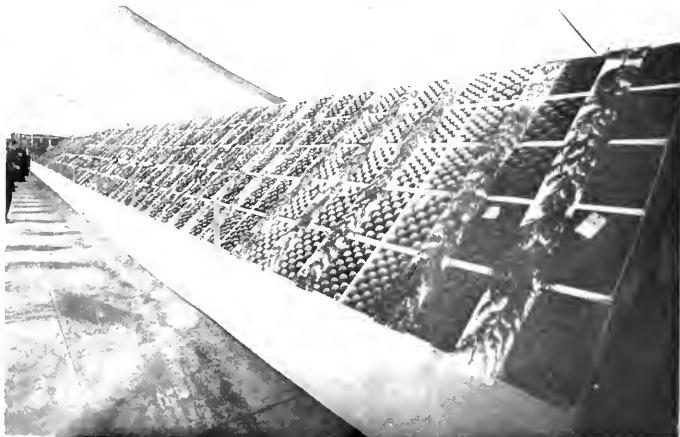
First prize, \$100; second prize, \$50.
Jonathan—First, J. M. Maloney, Hunters, Wash.; second, J. B. Feltz, Spokane.
Rome Beauty—First, F. E. Williams, Opportunity; second, G. S. Feltz, Spokane.
Wagener—First, W. J. Enright, Chester; second, C. M. Lockwood, Opportunity.
Winter Banana—First, Tredinock Farms, Meia.

SPECIAL AWARDS, 10-BOX CLASS

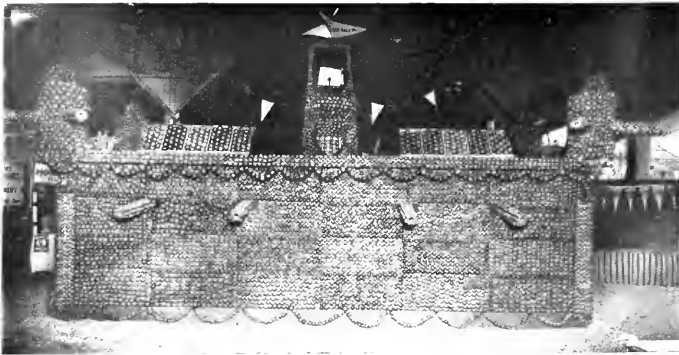
Northwestern Fruit Exchange Special Sweepstakes on pack, Fred Benson, North Yakima. Special prize of \$10 gold watch fob.

Mitchell, Lewis & Staver Special Sweepstakes in 10-box class, J. B. Schon, Wenatchee. Special prize of \$10 spray pump.

Lamb-Davis Lumber Company Special. For best 10 boxes of Delicious grown in Chelan or Douglas Counties, Wellington Deitch, Wenatchee. Special prize of 500 apple boxes.



General view of one of the big racks at the Seventh National Apple Show, Spokane, 1914



The Big Apple Fort of the Walla Walla Commercial Club, which won first prize of \$150 for the best feature display entered by organizations at the Seventh National Apple Show, Spokane, 1911

Cascade Lumber Company Special—Grower from Yakima, Kittitas or Benton Counties who scores highest in 10-box class, Fred Benson, North Yakima. Special prize of 500 apple boxes.

SINGLE BOX CONTINUES

First prize, \$7.50; second, \$5; third, \$3; fourth, \$2.

Arkansas Black—First, C. M. Holtzman, Zillah, Wash.; second, Henry Van Marter, Opportunity, Wash.; third, S. M. Engel, North Yakima, Wash.; fourth, Frank Enquist, Selah, Wash.

Baldwin—First, Turner Brattain, Otis Orchards, Wash.; second, James Rooke, Grand Forks, B. C.; third, J. D. Godwin, Shorts Point, B. C.; fourth, R. M. Garvin, Meyers Falls, Wash.

Black Ben Davis—First, F. L. Pugh, Peach, Wash.; second, Sherman Gatten, Mead, Wash.; third, E. A. Schon, Vernon, B. C.; fourth, R. A. Jones, Spokane.

Delicious—First, J. D. Godwin, Shorts Point, B. C.; second, Wellington Deitche, Wenatchee, Wash.; third, Ernest Foster, Wenatchee, Wash.; fourth, R. A. Jones, Spokane.

Grimes Golden—First, John Bengel, Spokane; second, W. J. Enright, Chester, Wash.; third, Henry Van Marter, Opportunity, Wash.; fourth, W. T. Robbins, Mead, Wash.

Jonathan—First, Henry Van Marter, Opportunity, Wash.; second, J. C. Dun-Waters, Ferry, B. C.; third, C. M. Lockwood, Opportunity, Wash.; fourth, J. Hurdstrum, Peach, Wash.

King David—R. T. Smith, Greenacres, Wash.; second, J. M. Jackson, Opportunity, Wash.; third, R. A. Jones, Spokane.

McIntosh Red—First, S. M. Young, Summerland, B. C.; second, James Rooke, Grand Forks, B. C.

Northern Spy—First, George Craig, Summerland, B. C.; second, H. C. Mellar, Summerland, B. C.; third, James Rooke, Grand Forks, B. C.; fourth, R. A. Jones, Spokane.

Rhode Island Greening—First, James Rooke, Grand Forks, B. C.; second, C. M. Lockwood, Opportunity, Wash.; third, W. T. Robbins, Mead, Wash.; fourth, B. A. Jones, Spokane.

Rome Beauty—First, J. B. Schon, Wenatchee, Wash.; second, Eberhart Trask, Oyama, B. C.; third, Fred Jewell, Mabton, Wash.; fourth, P. J. O'Brien, Boundary, Wash.

Spitzenberg—First, Fred A. Benson, North Yakima, Wash.; second, V. Carr, North Yakima, Wash.; third, J. D. Godwin, Shorts Point, B. C.; fourth, Tattle & Son, Opportunity, Wash.

Styanam Winesap—First, W. S. Hess, North Yakima, Wash.; second, Fred A. Benson, North Yakima, Wash.; third, J. Lawyer, Summerland, B. C.; fourth, A. A. Schmidt, North Yakima, Wash.

Tompkins King—First, R. A. Jones, Spokane; second, W. W. Rudolph, Hood River, Oregon; third, H. Logan, Peachland, B. C.

Wagner—First, W. J. Enright, Chester, Wash.; second, J. Wirtner, Mica, Wash.; third, Hans Peterson, Mead, Wash.; fourth, P. J. O'Brien, Bumpully, Wash.

Winesap—First, J. B. Schon, Wenatchee, Wash.; second, H. S. Burdick, North Yakima, Wash.; third, Stanley Ranch, Entiat, Wash.

Winter Banana—First, W. S. Kelsey, Opportunity, Wash.; second, Tattle & Son, Opportunity, Wash.; third, Spokane Burrows, Vernon, B. C.; fourth, J. B. Felts, Spokane.

Yellow Newtown—First, S. M. Young, Summerland, B. C.; second, H. C. Mellar, Summerland, B. C.; third, Mes. W. W. Bodwell, Hood

River, Oregon; fourth, C. M. Lockwood, Opportunity, Wash.

White Winter Permain—First, Stanley Ranch, Entiat, Wash.

FIVE-BOX LOTS

First prize, \$25; second, \$12.50; third, \$10.—Arkansas Black—First, E. A. Brown, North Yakima; second, R. H. Woods, Payette, Idaho; third, E. B. Suplee, Payette.

Baldwin—First, H. S. Monro, Summerland, B. C.; second, R. M. Garvin, Meyers Falls, Wash.; third, R. A. Jones, Spokane.

Black Ben Davis—First, R. A. Jones, Spokane; second, E. B. Suplee, Payette, Idaho; third, F. L. Pugh, Peach, Wash.

Ben Davis—First, W. D. Connor, North Yakima; second, Hans Peterson, Mead, Wash.; third, W. A. Monroe, Sunset Prairie, Spokane. Delicious—First, J. D. Godwin, Shorts Point, B. C.; second, J. C. Dun-Waters, Entiat, B. C.; third, Ernest Foster, Wenatchee.

Grimes Golden—First, John Bengel, Spokane; second, W. J. Enright, Chester.

Jonathan—First, W. H. Dunn, Opportunity; second, J. M. Maloney, Hunters, Wash.; third, C. M. Lockwood, Opportunity, Wash.

McIntosh Red—First, S. M. Young, Summerland, B. C.; second, James Rooke, Summerland, B. C.

Rome Beauty—First, Fred R. Jewell, Mabton, Wash.; second, A. V. Campbell, North Yakima; third, J. B. Schon, Wenatchee.

Spitzenberg—First, Roscoe Sheller, Sunny-side, Wash.; second, J. D. Godwin, Shorts Point, B. C.; third, J. C. Dun-Waters, Entiat, B. C.

Styanam—First, Fred A. Benson, North Yakima; second, J. B. Fordyce, Opportunity, Wash. Tompkins King—Third, R. A. Jones, Spokane.

Wagner—First, E. A. Schon, Vernon, B. C.; second, Joseph Burrows, Vernon, B. C.; third, W. T. Robbins, Mead, Wash.

Winesap—First, August Woodyard, Sunny-side, Wash.; second, C. W. Tuebner, Opportunity; third, W. E. Kirkpatrick, Omak, Wash.

Winter Banana—First, A. B. Allison, Opportunity; second, F. H. Waters, Selah, Wash.; third, J. B. Felts, Spokane.

White Winter Permain—First, Sherman Gatten, Mead, Wash.

Yellow Newtown—First, H. C. Mellar, Summerland, B. C.; second, J. B. Schon, Wenatchee; third, John Scott, Wenatchee.

Northern Spy—First, James Rooke, Grand Forks, B. C.; second, R. A. Jones, Spokane.

Five different varieties—First, C. M. Lockwood, Opportunity; second, T. Uribe, Peach, Wash.

TEN-BOX LOTS

First prize, \$10; second prize, \$5; third prize, \$20.

Arkansas Black—First, Henry Van Marter, Opportunity, Wash.

Delicious—First, Wellington Deitche, Wenatchee; second, V. C. Merrill, Mabton; third, Ernest Foster, Wenatchee.

Grimes Golden—First, W. J. Enright, Chester.

Jonathan—First, C. M. Lockwood, Opportunity; second, Emerson Brothers, Peach.

Rome Beauty—First, J. B. Schon, Wenatchee; second, Fred Jewell, Mabton; third, Thomas Hooker, Spokane.

Spitzenberg—First, Fred Benson, North Yakima.

Winter Banana—First, Joseph Burrows, Vernon, B. C.; second, Tredinnock Farms, Mica.

Wagner—First, E. A. Schon, Vernon, B. C.; second, W. T. Robbins, Mead; third, J. B. Felts, Spokane.

Winesap—First, J. B. Schon, Wenatchee; second, C. W. Tuebner, Opportunity.

SWEETSTAKES PRIZES IN BOX APPLE COMPETITIONS

To the exhibitors having the largest number of boxes in the prize-winning class of all box competitions:

C. M. Lockwood, Opportunity, Wash., first, \$10 and grand prize diploma.

W. J. Enright, Chester, Wash., second, \$20.

FIVE-BOX SWEETSTAKES

To the exhibitors winning the most prizes in the five-box lots:

R. A. Jones, Spokane, first, \$20.
C. M. Lockwood, J. B. Schon, J. D. Godwin, J. C. Dun-Waters and E. B. Suplee tied for second prize of \$10.

GENERAL DISTRICT DISPLAYS

Lot No. 1—Best general collective display from irrigated land, shown by commercial clubs, associations, unions, counties or districts. First prize, \$100, Spokane Valley display, comprising Greenacres, Opportunity and Otis, Wash.

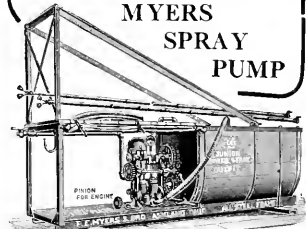
ORIGINAL AND ATTRACTIVE FEATURE DISPLAYS

Lot No. 1—By district, association, lodge, society, county or union. First, \$150, Walla Walla Commercial Club; second, \$100, Cashmere Fruit Growers' Union; third, Prosser Commercial Club.

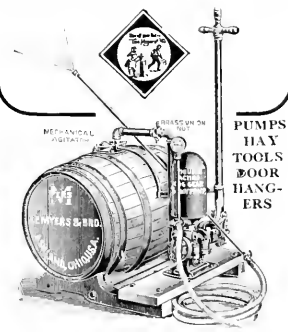
Lot No. 2—By an individual. First, \$150, Fanny Break, Spokane; second, \$100, Edith A. Proudfoot, Fairfield; third, William Siebels, Spokane.

Lot No. 3—By a firm, corporation, etc., for advertising purposes. First, \$100, North Pacific Fruit Distributors, Spokane.

IF YOU RAISE FRUIT or VEGETABLES YOU NEED A MYERS SPRAY PUMP



A lot of people who own small orchards or have a few fruit trees or vines and shrubbery around their homes are following the example set by leading fruit growers and are spraying MYERS WAY. The reason for this is summed up in a few words—MYERS SPRAY PUMPS are practical, proven machines ready for real service when spraying time arrives. No failures! No experiments. No cheap hose or nozzles to contend with. All styles uniformly constructed—Bucket, Barrel or Power Outlets for every spraying requirement. Catalog on request. Ask your dealer or write us.



F. E. Myers & Bro. 120 Orange St., Ashland, Ohio

Ashland Pump and Hay Tool Works

Proper and Thorough Spraying Immeasurably Beneficial

By Jay L. Reynolds, Horticulturist, Spokane, Washington

THE devout preacher says, "Let us pray." The successful orchardist says, "Let us spray." We need always to pray, but proper and thorough spraying will help the prayers immeasurably in the production of first-class fruit. The expense and trouble of spraying is not great if gone at at the right time and in the right way, and proper spraying is one of the great things which mark the difference between success and failure in the apple business. The fellow who does not "spray," "prune" and "thin" is the fellow who raises cull apples. "In times of peace prepare for war." Order your spray materials in January or February and get it on hand, then when the time comes to use it you will not have delay. Also see to it that the spray outfit is in good order long before you expect to use it, then you will not have to wait and fuss and fuddle and swear at the other fellow when the right time comes to use it. There is a right time, and if you spray then you will get the best results, if you do your work thoroughly, and if you do not spray then you will not get the best results. Mail a postal card to the agricultural college of your state and ask them for the "spray calendar" for the current year. It will give you some good information.

There are four standard spray materials of proved value and they are all you need. Stay by them. Let the other fellow do the experimenting. It is expensive and uncertain. The four to which I refer are lime-sulphur, arsenate of lead, bordeaux mixture and black-leaf "40." If these spray materials are applied thoroughly and at the right time, there will be little or no need of any others. Later herein I will call your attention to "the right time," but first let us enumerate the principal pests we have to look out for, and which deposit their eggs upon some part of the tree. The woolly aphid, which do most of their damage upon the roots of the trees, the green aphid and the black aphid. The black aphid, however, is said to be nothing more than the green aphid a little later in the season, when a certain smut has formed upon the honey-dew excretion of the aphid, which makes the insect as well as the foliage more or less dark colored. It makes no difference whether they are the same or not, the treatment would be the same. Then, in some localities, there is what is called the purple aphid, which appears early in the spring on the succulent leaves or fruit sprus and the tips of tender shoots. These will be observed, generally, on the underside of the leaves which are curled up. They are sometimes called the leaf-curling aphid, but that name could as well be applied to the green aphid, so it means nothing. Generally speaking, the purple aphid will not be found in the orchard after about the first of June. These constitute the aphid or tree louse family, so far as the orchard-

ist is concerned, and all of them deposit their eggs upon the tree in the fall of the year, generally out on the terminal limbs.

The bud moth is a very small insect, but a bad one economically. It deposits its eggs under the rough bark in the crotches of the trees, and its eggs are so minute and so nearly the color of the bark that they cannot be seen with the naked eye, indeed it is almost impossible to discover them with a powerful magnifying glass. So you may have them on your trees and not know it. The larvae or worms eat into the buds and destroy them. The result is, no foliage or fruit where they have done their work.

The red spider is another minute insect which feeds upon the buds and leaves of the trees, and so devastating is their work that economically it stands the orchardist well in hand to be on the lookout for them. They also deposit their eggs upon the trees in the fall. Then there is the tent caterpillar and many other caterpillars and worms, the eggs of all of which are deposited in the fall.

If you discover aphid, bud moth or red spider on your trees after the foliage is out, spray with black-leaf "40" according to the directions given on the can.

The San Jose scale, the oyster shell bark louse and many other scales are liable to appear, if they are not already present, but remember that all of these different insect pests and scales can be more successfully combated with lime-sulphur solution if applied at the right time in the spring.

Lime-sulphur kills by contact and instantly, very quickly losing its strength in the open air, and the right time to use it is when the buds begin to swell in the spring so that the green shows a little. The reason why this is the best time and why we get the best results from the use of lime-sulphur in combating these insects at this time is because, when the weather is warm enough to start the buds to growing (swelling), it is also warm enough to begin to hatch all these different species of eggs and to loosen up these scales. Then they are the most vulnerable (tender) and are easily killed by the application of the lime-sulphur solution. But remember this: You must get the lime-sulphur solution upon these eggs and scales if you want to kill them, so let me impress upon you the necessity of thoroughness. Fungous diseases, such as apple and pear scab, baldwin spot or fruit spot, moss and lichen, or any other spore-forming fungi, can be successfully combated with this material applied at this time. The one spraying accomplishes it all if done with thoroughness and force, except that with apple and pear scab and baldwin spot, another spraying should be given with summer-strength bordeaux when the apples are about

the size of small marbles. It will be better also to spray in autumn, just after the leaves fall, with lime-sulphur 1 to 11 if scab and baldwin spot is affecting your fruit.

Spraying done in winter will do little or no good. In fact it is a waste of time and material, because these diseases and scales and eggs of insects are of just as much importance in the great infinite cause of things as that of the fruitgrower, and you will find them wonderfully and perfectly protected by nature from devastation, so that your destroying solution cannot touch them vitally. But if you wait until mother nature begins to cuddle these little fellows in her great lap of spring, touching them with gentle zephyrs and awakening them with warm kisses of sunlight and they are bestirring themselves, throwing off this winter protection, then you will find them vulnerable—easily destroyed. If you spray at this time, doing the work as it should be done, thoroughly and with force enough to drive the solution into crevices and under the bark scales, you will destroy practically all the eggs and little insects which already may have been hatched out, as well as the spores of all the fungi mentioned and others as well.

In my experience and observation, I find that the prepared commercial lime-sulphur concentrate is cheaper than the solution prepared on the farm, when you take the time, cost of material, fuel and cost of apparatus into consideration. Again, it is practically impossible to make two batches of this solution alike with an inferior apparatus, and for this reason you will be liable to have it too weak or too strong, with anything but dependable results. Still further, there is always lots to do on the farm at the time of making, for the home-made solution must be used as soon as made, or practically so. The work of making the preparation, together with spraying and all other work pressing at this time, makes home-made lime-sulphur solution a discouraging proposition to say the least. If the commercial lime-sulphur concentrate tests 33 to 31 Baume as it should, I find that one of concentrate to fourteen of water will give as good results as a stronger dilution.

Arsenate of lead is used as an insecticide for the poisoning of all manducate or biting insects that feed upon plant tissue and can be applied at any time without injury to the foliage. Results can very quickly be seen when a tree affected with cherry slugs is sprayed with arsenate of lead. Mr. Slug quits business immediately. This insect appears usually about the time the cherries are beginning to get ripe, and unless checked may continue until they defoliate the tree. It is a black slug about three-eighths to one-half inch in length, appearing upon

Continued on page 37

Crown Gall, Black Knot, Plant Tumor or Plant Cancer

By Clayton O. Smith, Experiment Station, Whittier, California

THE disease called crown gall, black knot, plant tumor or plant cancer has for many years been well known to the horticulturist and plant pathologist. It is only within a few years that the cause of the trouble has been thoroughly investigated by Dr. Erwin F. Smith and his associates of the United States Department of Agriculture, and their bulletins are available to any who may be especially interested in this trouble.

Crown gall is nearly world-wide in its distribution, being found in all parts of the United States, in Canada, South Africa, Asia, countries of Europe, New Zealand, Australia, Mexico and probably also in South America. The malady is a serious one on many of our orchard trees, as it not only decreases their vigor and productiveness, but at length is a frequent cause of their death. A large number of different species of trees are susceptible. In fact the organism causing the disease is almost omnivorous as to its choice of its host, but it is especially severe in the more important economic trees, such as the apple, almond, apricot, cherry, grape, peach, plum, prune and walnut.

The disease, when once seen, is easy to identify, as it is characterized by an enlargement or growth of soft, spongy tissue of a more or less spherical shape. These growths are usually situated just below the surface of the ground in the trunk or body of the tree, often extending downward some distance on the larger roots, and may be found on them at some distance from the trunk. The galls continue to increase in size from year to year until a large excrescence may be formed. The tissue produced is abnormal and easily decays, making an especially favorable place for wood-destroying fungi to gain an entrance to the tree. While the galls are usually below the ground, occasionally aerial ones are formed on the trunk and large branches. These are hard and cause little or no serious effects on the tree, except when they may be numerous, as on grapes of the *Vinifera* varieties.

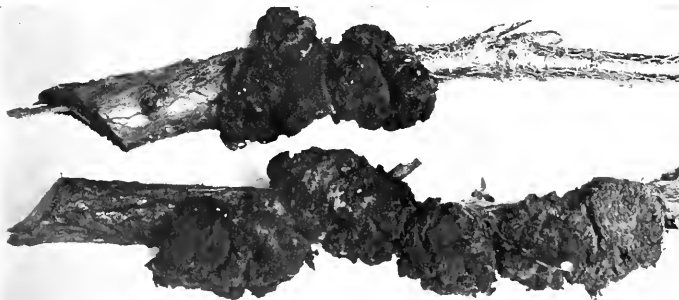
Trees affected with the disease may not die for some years, indeed will not until the trunk is entirely girdled with diseased gall tissue. The affected trees usually do not make as rapid growth as healthy ones, but for a time produce a large amount of fruit. The cause of the abnormal number of fruit is the same as in twigs that have been ringed to make them produce. The root of the tree suffers most and soon ceases to make further growth because of the lack of elaborated food supplied it from the leaves. Severely diseased trees may show improperly developed trunks, in that they are flattened or have deep grooves directly above the galls. In our study of crown gall we have found these two characteristics a sure indication of the presence of crown gall.

All abnormal growths of trees are not caused by crown gall. (1) Some of these other enlargements are caused by insect stings or by the placing of the eggs in the plant tissue. (2) Some of the galls in the roots are caused by small worms called nematode worms. These closely resemble small crown galls and are found on the roots of trees and vegetables. (3) Certain species of fungi are capable of causing galls. One fine example of this is the gall produced on citrus twigs in Cuba and Porto Rico by a fungus called *Sphaeropsis tumefaciens*. (4) Tubercles are found on many leguminous plants. (5) A gall caused by a different species of bacteria from that of crown gall is found on sugar beets. (6) The knot or gall of the olive is caused by a distinct species of bacteria. In addition to these there are other aerial galls on the twigs of several different kinds of trees the cause of which is not yet fully understood. Citrus trees occasionally have these aerial galls, also eucalyptus seedlings have small knots that never cause any serious injury. The galls of quince are not very well understood and do not seriously harm the affected trees. There are also natural galls on certain varieties of olive that should not be confused with crown gall. Locust trees sometimes have large galls on the trunk

which probably are not the same as crown gall.

The cause of crown gall has been fully demonstrated to be a species of bacteria by the name of *Bacterium tumefaciens*, a tumor-forming organism. The germs are extremely small and probably live in the soil or organic matter as saprophytes, and from here enter into the tissue of living plants through some injury in the bark. Artificial galls have been repeatedly made to develop by simply pricking the healthy bark with a steel needle previously touched to a pure culture of the causal organism. In the gall or tumor tissue comparatively few bacteria are present, and the microscope does not conclusively demonstrate the cause of the trouble under ordinary histological methods. The germs live inside the cells of the host and by the products produced during their development cause new cells to be formed with unusual rapidity. The abnormal tissues thus formed show cells with very thin walls, at first soft and often with no well-defined bark or epidermis. The germs can often spread through the plant by the developing of a narrow portion of tissue into a tumor strand. This strand is invisible externally, but from it secondary tumors very often develop.

Strong evidence has been presented by Dr. Erwin F. Smith showing many similar characteristics to exist between human tumors and those of plants, but to present these would be outside the scope of this article. All attempts, however, to produce tumors on the lower animals, fishes, frogs, etc., by inoculating them with the crown-gall organism have been failures, or at least uncertain in their results. It is therefore safe to conclude that the organism causing plant gall tumors cannot produce tumors in animals. The crown-gall organism, however, is a virulent plant parasite and is capable of producing galls in a large number of plants when placed in their tissue by artificial inoculations. Galls have thus been produced artificially on several kinds of trees upon which they have never been found to occur naturally. The most interesting of these are the different species of citrus, as the orange, lemon and lime. Negative results have always been secured from inoculating the avocado and the olive. The fig and loquat are only with difficulty infected. Often the inoculations when made do not at once show positive gall information, but may, as in the quince, remain in a dormant condition. In our quince inoculations the injury made by the puncture inoculations healed, and it was nearly a year before the small, gall-like formations appeared. These eventually, however, grew into large galls. The condition of the tree growth affects the rapidity of gall formation—no growth of tree, little or no development of gall. Inoculation late in the



Artificial Inoculations on Apricot Seedlings with a Pure Culture of the Crown Gall Organism *Bacterium Tumefaciens*



Natural Gall in Young Apple Tree That Has Become Infected at Place Where Tree Was Bench Grafted.

fall often will not develop until active growth in the following spring. May not this retarded development of the disease account for the large amount of gall that sometimes develops on young orchard trees from stock that was carefully inspected and appeared to be perfectly free from crown gall?

Crown gall infection must start from soil containing the disease-producing organism. There can be little doubt that the soils of California are often naturally infected with crown gall. This is especially true of those that were formerly wooded or have previously grown stone fruits, especially if the trees grew on peach roots. Little is actually known as to how actively the disease spreads under nursery irrigation. The fact that where irrigation is practiced crown gall appears more prevalent would suggest that the disease is possibly spread in this way.



Seedling English Walnut Showing Crown Gall. Similar galls are common on the trees of the stone fruits, especially when peach or almond roots are used. Plum roots are much more resistant.



CONSIDER THE FUTURE GENERATIONS DON'T LEAVE THEM WORN OUT FARMS

Productive soil that is continually being "worked" will soon run out of producing ability and become the shell of its former strength.

The game laws of TODAY are for the future generations. The reliable fertilizers of the present insure a legacy for the heirs of to-morrow—a guarantee of SIGHTLY orchards instead of SICKLY ones. To keep your farm producing—give back to the soil that which is taken out. Otherwise its producing possibilities will REDUCE instead of PRODUCE—DECREASE instead of INCREASE.

BEAVER BRAND ANIMAL FERTILIZERS "A FERTILIZER FOR EVERY SOIL"

are the "ounces of prevention." The guaranteed analysis shows the proper proportion of animal ammonia, nitrogen, phosphoric acid and potash that revives strength—gives new life—enables the next crop to feed upon the necessary sustenance for a good healthy harvest. Avoid the worn-out-land danger. Insure against poor crops—increase your land's producing ability by ordering this famous fertilizer NOW. Fertilizer booklet F-37 Free. Tells about fertilizers, their application and the results they produce for others.



On vigorous-growing seedlings like almonds there is often a scar directly beneath where the seed is attached that would be a most favorable place for gall infections. Also almond seedlings sometimes show small checks or cracks in the surface bark. The gall usually appears at the crown and very close to where the seed was formerly attached. Some experimental work is in progress in treating pits before planting with a thick paste of bordeaux mixture, with the hope that possibly this will sterilize a small area of soil immediately surrounding the pit and so possibly prevent this early infection of the tree, if such there be. Any injury to the trunk or root in the nursery or in digging the trees would be a favorable point for infection. The organism is entirely a wound parasite and could gain entrance in any mechanical injury, animal or insect bite.

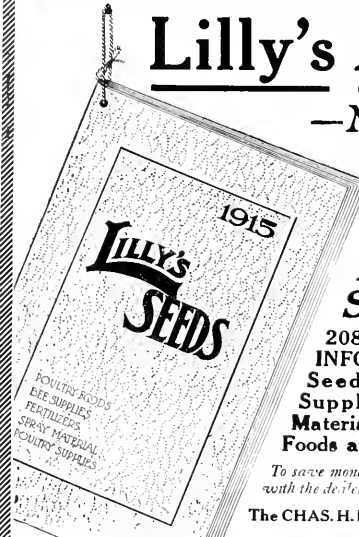
The following is a list of plants upon which crown gall has been found

to occur naturally: Apple, apricot, almonds, Arbutus unedo, alfalfa, beet, clematis (wild), clover (red), cherry, chestnut, cotton, daisy (Paris) or marguerite, grape, hop, honeysuckle, loganberry, peach, pepper tree, plum, prune, pear, parsnip, pecan, quince, raspberry, rose, salsify, sterculia, Victoria bottle tree, turnip, willow, English walnut, California black walnut, Eastern walnut. Galls have been artificially produced on the following in addition to those named above: Catalina cherry, eucalyptus, citrus, sweet orange, sour orange, lemon, lime, Angiers quince, Japanese walnuts, butternut, a large number of different species of cultivated and wild plums, including the following: Prunus cerasifera, P. Americana, P. triflora, P. domestica, some of whose varieties are quite resistant; P. amygdalus, P. avium, P. davidiana, P. hortulana (wild goose), P. Allegheniensis, P. Simonii, P. platycarpa.

Continued in next issue

Lilly's ANNUAL

**—Mailed FREE
to Anyone—
Anywhere of
Lilly's Tested
Acclimated
Seeds**



**208 PAGES of VALUABLE
INFORMATION—Illustrated:
Seeds, Poultry Foods and
Supplies, Fertilizers, Spray
Materials, Bee Supplies, Stock
Foods and Stock Supplies** ❧ ❧

*To save money and get better seeds get in touch
with the dealer in your town who sells Lilly's Seeds*

The CHAS. H. LILLY CO., Seattle and Portland

Ridley, Houlding & Co.

COVENT GARDEN, LONDON

Points to remember when consigning
apples to the London Market

- 1.—We Specialize in Apples
- 2.—All Consignments Receive our
Personal Attention
- 3.—The Fruit is Sold by Private
Treaty on its Merits

CABLE ADDRESS: BOTANIZING, LONDON

Apple Growers of the Northwestern States

AT the recent National Apple Show a By-Products Board was appointed consisting of the following gentlemen: Truman Butler, Hood River, Oregon; Gordon C. Corbaley, Spokane, Washington; M. J. Higley, Payette, Idaho; J. O. Holt, Eugene, Oregon; J. L. Hughes, North Yakima, Washington; Conrad Rose, Wenatchee, Washington; W. H. Paulhamus, Puyallup, Washington; H. M. Sloan, Florence, Montana; D. A. Sny-

der, Dayton, Oregon; Paul H. Weyrauch, Walla Walla, Washington, with instructions to do whatever in their judgment was necessary to establish by-products plants in all communities where plants of this kind could be of advantage to the growers, and to do what the board could in behalf of a more concentrated selling agency or whatever might be accomplished in aid of a better condition in the fresh fruit

marketing situation. This board, so appointed, held its first meeting in the parlors of the Commercial Club in North Yakima, Washington, Saturday, December 5, and organized by naming W. H. Paulhamus chairman and Gordon C. Corbaley secretary.

The first resolution passed, after organization, was on motion of Truman Butler, of Hood River, that it was the sense of the committee that the most important task under consideration was a closer and better organization of the selling agencies of the fresh fruit. It was the unanimous opinion of all the members present that the Butler motion was timely. Therefore a meeting of the By-Products Committee was called at the New Washington Hotel, Seattle, for January 23, 1915, at 9 a. m., after which the by-products question was taken up for consideration so far as it related to the Yakima district, with a final result that all of the selling agencies doing business at North Yakima agreed to finance and get back of a cannery or evaporator, a cider and vinegar plant, or such other by-products plants as were advisable for that particular district.

In the judgment of the By-Products Committee the Seattle meeting on January 23 will be one of the greatest importance to the growers of tree fruits in the Pacific Northwest. The apple growers of the Wenatchee district are to hold a convention in Wenatchee on December 29. This convention is to be composed of three delegates from each precinct in the apple growing district tributary to the Wenatchee Valley. It is the understanding of the committee that this convention desires to select

Better Crops on Perfect Seed Beds

**Prepared With the
ACME
Pulverizing Harrow**

AFTER plowing sod or stubble it must be worked down thoroughly and pulverized. Seeds, clods and lumps must be broken up, air spaces and voids worked out and filled to insure a seed bed that will give BETTER CROPS. Make available the plant food in plowed-in manure by thoroughly mixing with pulverized soil. BETTER CROPS will result.

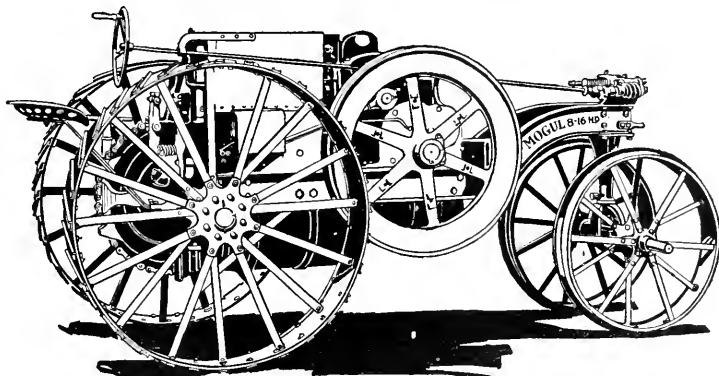
The "ACME" Pulverizing Harrow makes possible the perfect seed bed. Sizes 3 to 12 ft. wide for one to four horses. Light Draft—All Steel—Low Price
Write for catalog and name of nearest dealer.
DUANE H. NASH, Incorporated
347 Division Ave., Millington, N. J.

No. 23

6 ft. Wide

Our New Year's Announcement

A Mogul Orchard Tractor for **\$675**



We announce for 1915 an all-purpose orchard tractor, with 8-H. P. at the drawbar and 16 on the belt

An Easily Handled, Short Turning, All-Purpose Tractor

This new Mogul 8-16 tractor will do the work of eight horses in the orchard.

Being a four-wheeled, all-purpose tractor, you can use it every day.

It will do plowing and seeding as well as orchard cultivating.

It will draw manure spreaders, mowers or binders.

You can take it into a hay field to draw a wagon and hay-loader.

Any farmer can buy this new Mogul 8-16 tractor for **\$675.00, cash, f. o. b. Chicago.**

The man who can use one of these Mogul tractors pays, at this price, the least for which a good, reliable, all-purpose 8-16 tractor can be sold.

If you want to use a Mogul 8-16 tractor for spring work, your order should be placed now with the I H C dealer.

Write us for full information.

International Harvester Company of America

(Incorporated)

San Francisco, Cal.
Denver, Colo.
Portland, Ore.

Chicago

U S A

Spokane, Wash.
Salt Lake City, Utah
Helena, Mont.

ten delegates to meet with the By-Products Committee for consultation.

It has occurred to the By-Products Committee that it would be advisable to call an apple growers' convention in Seattle at 9 a. m. January 22, 1915, place of meeting to be designated later, so that the representatives of the growers themselves could have a conference with the By-Products Committee the day preceding the By-Products Committee meeting with the selling agencies. Therefore the By-Products Committee, by its president and its secretary, requests that each and every apple growing district hold a similar convention, selecting ten delegates from each district to meet with the By-Products Board in Seattle January 22, 1915.

The districts that the Board has particularly in mind in issuing this call are: Wenatchee, Yakima, Hood River, Southern Idaho, Walla Walla, Rogue River, Spokane, Montana, Lewiston, and the Garfield-Moscow territory. These are the districts that are particularly represented in the present organization. We feel certain, however, that a similar representation from any well established district will be welcomed at this conference.

The By-Products Board suggests that these delegates from the apple growing districts be selected regardless of the manner in which their fruit is now being marketed, and with a view of getting delegates who are now marketing their fruit through all different agencies, but that they should not be officers or salaried representatives of any organization. In other words, the By-Products Committee desires to get the best sentiment from all the different sections and from all different classes of growers, with a view of trying to better the marketing conditions as they now exist. Where there is a growers' organization of any kind, it is requested that this organization take the initiative in calling such a convention. Where there is not an organization, it is urged that any ten growers sign a call for a convention, and that the conventions be held not later than the 20th of January.

In issuing this call, the By-Products Board wishes to ask the earnest co-operation of every individual vitally interested in the fruit business of the Northwestern states. We ask this co-operation in order that the gathering at Seattle shall be a practical, earnest

meeting, gotten together for the purpose of developing some common-sense solution of the present marketing situation.

The apple business is a business in which millions of dollars are invested. The pressing need of that business is better organization and more efficient marketing. This is not a time when we need visionary plans or that we want to try to do the impractical thing. It is a time for the exercising of hard-headed sense, and we wish to ask the different districts to send the best and the ablest of their men to this Seattle meeting, in order that they may unite in forming a judgment that will really get results. Address communications to and ask information of Gordon C. Corbaley, secretary of the Chamber of Commerce, Spokane, Washington.

We have just received a very handsome and instructive catalog from J. A. Bauer, Judsonia, Arkansas, a strawberry specialist. The catalog contains considerable information of value to strawberry and small fruit growers on the production of small fruits, showing how to plant, care for and pick.

BETTER FRUIT

HOOD RIVER, OREGON

Official Organ of The Northwest Fruit Growers' Association
A Monthly Illustrated Magazine Published in the
Interest of Modern Fruit Growing and Marketing
All Communications Should Be Addressed and Remittances
Made Payable to

Better Fruit Publishing Company

E. H. SHEPARD, Editor and Publisher
H. E. VAN DEMAN, Contributing Editor

STATE ASSOCIATE EDITORS

OREGON	
C. J. Leach, Horticulturist.....	Covallis
H. S. Jackson, Pathologist.....	Covallis
H. F. Wilson, Entomologist.....	Covallis
WASHINGTON	
Dr. A. L. Melander, Entomologist.....	Pullman
O. M. Morris, Horticulturist.....	Pullman
COLORADO	
C. P. Gillette, Director and Entomologist.....	Fort Collins
E. R. House, Chief of Department of Civil and Irrigation Engineering, State Agricultural College.....	Fort Collins
E. P. Taylor, Horticulturist.....	Grand Junction
IDAHO	
W. H. Wicks, Horticulturist.....	Moscow
S. S. Thorneb, Horticulturist.....	Leviston
UTAH	
Dr. E. D. Hall, Director and Entomologist.....	Logan
Leon D. Batehlor, Horticulturist.....	Logan
MONTANA	
O. B. Whipple, Horticulturist.....	Bozeman
CALIFORNIA	
C. W. Woodworth, Entomologist.....	Berkeley
W. H. Volck, Entomologist.....	Watsonville
BRITISH COLUMBIA	
R. M. Winslow, Provincial Horticulturist.....	Victoria

SUBSCRIPTION PRICE:

In the United States, \$1.00 per year in advance
Canada and foreign, including postage, \$1.50

ADVERTISING RATES ON APPLICATION

Entered as second-class matter December 27, 1906, at the
Postoffice at Hood River, Oregon, under Act
of Congress of March 3, 1879.

"Better Fruit," Past, Present and Future.—Nine years ago, I, E. H. Shepard, editor and sole publisher of "Better Fruit," on account of the progressiveness of horticulture, conceived the idea that the fruit grower, particularly in the Northwest, wanted a different kind of paper from any that was being published. Therefore, after a great deal of thought and study, I planned the policy of "Better Fruit" along original lines and published the first number in July, 1906.

My idea was that the fruit grower wanted practical information about every feature of the business. I believed that in order to convey this information in an effective way that it would be necessary to illustrate many features in different articles; I believed that the fruit grower wanted a high class publication in every respect; I believed that he wanted it in attractive form, printed on good paper, handsomely illustrated, and I believed that it could be rendered additionally attractive by running the front cover pages without advertising. In the first issue I outlined what the policy of "Better Fruit" would be and have consistently stuck to that policy, varying it slightly to meet changing conditions. The articles have been valuable, instructive, scientific and practical. They have been handsomely illustrated with the best engraving that could be done; the paper has been sixty-pound book stock, with cover pages of eighty-pound stock; the printing typographically has been artistic; the advertising has been clean; the articles advertised are practically all those which the fruit grower uses or consumes, either directly or indirectly, in his business.

It was evident from the first that "Better Fruit" was the kind of publication that the fruit grower wanted. It is with some pride that I feel justified in saying that "Better Fruit" has been a success. By that I mean it has been appreciated by the fruit grower and produced results for the advertiser. I say "appreciated" because the fruit growers have subscribed generously and continuously. The subscription list has increased in a moderate way, regularly; the advertising has continued steady. I believe "Better Fruit" has carried regularly in each number for nearly nine years more pages of advertising than any other similar publication, so therefore I think I am justified in saying "Better Fruit" has met with success. I believe it was a success inasmuch as I have achieved something that has bettered the fruit industry and helped the fruit grower. I have worked faithfully and energetically for ten years in accomplishing this achievement.

"Better Fruit" has been more than successful. It has been progressive; it has always taken the initiative and in many instances has anticipated the conditions and necessities of the fruit industry. It is with considerable satisfaction that I call attention to a few of the vital factors which "Better Fruit" has advocated in advance, as necessary in connection with the fruit industry. In 1912 I realized that a greater consumption of apples was going to be necessary in order to sell the increased quantities that would be produced on the increasing acreage which was being set. Therefore in October, 1912, "Better Fruit" published a special edition called "The Educational Cooking Edition—209 Ways of Serving Apples as Dessert." While this edition commanded a great deal of attention and much interest, the idea really did not take root and was not utilized in an extensive way by the fruit industry until in 1913 when the International Apple Shippers' Association published a booklet entitled, "197 Ways of Serving the Apple as Dessert," of which over half a million copies were sold. In 1914 the Oregon-Washington Railroad & Navigation Company published a booklet of "150 Recipes for Serving the Apple," employing a special demonstrator to travel throughout the country to show the people how to cook apples. In 1913-14 a demonstration in cooking apples was given at the National Apple Show at Spokane.

In 1912, realizing in advance that many of our lower grades would not justify Eastern freight shipments and that much fruit would go to waste during the period when the markets were glutted, it was very clear to me that it would be necessary for the Northwest to give attention to by-products, so in May, 1913, I published a special edition of "Better Fruit" devoted to by-products, with another in April, 1914. The trustees of the National Apple Show at Spokane were quick to catch the importance of this suggestion as a future need for the industry and in 1913 called a conference which resulted in a com-

MUSTONIA

Will Save Your Trees

Use this Powerful Insecticide
For Blight, Rust, Scale,
Scab, Codlin Moth and
All Aphids

BACTERIA
To the number of about 1200 species stand ready to attack your orchards; some of them may be busy already, working day and night and costing you hundreds of dollars. **MUSTONIA** will destroy them and prevent them coming again.

PLANT LICE
Especially on apple trees, aphids are very destructive. **MUSTONIA** will remove the apple aphid, European grain aphid and the clover aphid, and keep your trees clean and free from rust, scale and scab.

BLIGHT
Birds, bees and insects carry blight from tree to tree. Prevent its ravages with **MUSTONIA**.

Spray with **MUSTONIA** three to four times a year and your trees will be healthy and vigorous. Get your order in early for spring delivery. Write for literature on spraying and tree planting.

E. LEECH, F. R. H. S.
Manufacturer
STEVENSVILLE, MONTANA

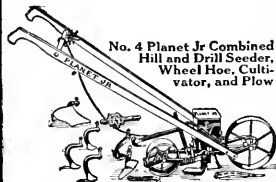
mittee being appointed which did splendid work in this line of development. Another conference was called in 1914 and a new committee has been named for the year 1915, which will endeavor to furnish all the necessary information about by-products facilities. They will also assist in forming a marketing organization for the disposal of products at satisfactory prices.

In 1909, realizing the exorbitant retail price of apples was a menace to consumption, I began a crusade against exorbitant retail profits. I, like every other reformer, was much criticized, and it took almost five years for this idea to sink in and take root. But again the anticipation of "Better Fruit" was realized, although it took five years to do it, and today every fruit grower is up in arms against the exorbitant retail prices at which apples are sold. Perhaps more significant than this is the fact that the International Apple Shippers' Association have advocated that every dealer use his influence to induce retailers to sell apples at a reasonable profit and so help increase consumption.

In 1904, over ten years ago, the editor of "Better Fruit" conceived the necessity of fruit growers' associations in order to assemble the products, properly load them to meet the requirements of the trade, and distribute them over the United States. My addresses at the different horticultural meetings were listened to, but at first there was little indication that any result would follow. In fact, I do not think I would be departing much from the truth if I were to say that these addresses at that time were considered quite idealistic, and in reality a joke, but in ten years the idea as urged by the editor of "Better Fruit" in reference to associations in the Northwest is so generally admitted to

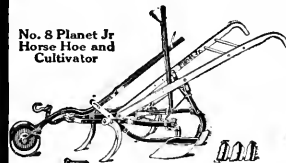
Planet Jr. Seeder-Horse Hoe

The farm and garden tools that save your time, lighten your labor, and get bigger crops—the longest-lasting and most economical implements made. Fully guaranteed.



No. 4 Planet Jr Combined Hill and Drill Seeder, Wheel Hoe, Cultivator, and Plow

Soon pays for itself in the family garden as well as in the larger acreage. Sows all garden seeds (in drills or in hills), plows, opens furrows and covers them, hoes and cultivates quickly and easily all through the season.



No. 8 Planet Jr Horse Hoe and Cultivator

Stronger, better-made, and capable of a greater variety of work than any other cultivator made. Non-clogging steel wheel. Depth-regulator and extra-long frame make it run steady. Adjustable for both depth and width.

72-page Catalog (168 illustrations) free. Describes 57 tools including Seeders, Wheel Hoes, Horse Hoes, Harrows, Orchard- and Beet-Cultivators. Write postal for it.

S. L. ALLEN & CO. Box 1106U Phila Pa.
We carry stock in San Francisco and Los Angeles
Agencies in all principal Pacific Coast Cities.

be one of the necessary solutions of the fruit business that at the present time we have 150 associations—a pretty good growth. When I commenced advocating the association idea we had but three in the Northwest.

In 1906 I published the first Packing Edition of "Better Fruit," which stood for an improved pack and standardized grading. This educational feature of "Better Fruit" has resulted in much good and a big improvement in packing and grading, as every fruit grower, every fruit dealer and every consumer knows. All the improved methods in cultivation, irrigation, pruning, spraying, etc., have been given to the readers of "Better Fruit." The immense amount of value that has resulted to the fruit growers from the educational work that "Better Fruit" has done along these

lines is beyond estimation or comprehension.

Many have asked me why "Better Fruit" has been a success. I don't know that I can answer the question fully or completely, but I feel sufficiently satisfied on a few points to mention them as contributing to the success of "Better Fruit." I believe a man in order to edit a publication must have a certain amount of ability, a certain amount of knowledge and a certain amount of experience. This covers a broad field. My father learned orcharding in New England, following it in California. I grew up in his orchard and there had my early training. After graduating from the University of California I engaged in the wholesale mercantile business for myself for twenty years. In 1903 I came to Hood River, where I have been a grower of fruit ever since, with my home in the orchard. I have served as manager of our association here for six years and as director for nine years. I believe in order to edit and publish a fruit growers' paper successfully that the man must first have a good education, second, a good training in fruit growing. Third, he must have a knowledge of marketing from actual experience. Fourth, he must have business experience and ability, and, fifth, it is important that the editor live in a fruit country where fruit growing is the principal business, in order to understand fully the requirements of the fruit grower, what his obstacles are and what to do to overcome them.

But "Better Fruit" has accomplished a good deal more than what I have indicated in connection with the fruit industry. By that I mean it has done something to make the world better. The name was not only an original name, but happily selected because it is a wholesome name and stood for something. To illustrate what I mean: "Better Fruit" was the first to use the word "better" in the significance which is conveyed in the title. The railroads have adopted the suggestion; agricultural experts have adopted the idea and are all advocating "better fruit" and "better farming"; automobilists and public men have adopted it and are advocating "better roads"; educational people have adopted it and are advocating "better schools"; municipalities are advocating "better government" and "better sanitary conditions"; moral societies have made a slogan from the word "better" and the word now is being capitalized in this sense by hundreds and thousands of advertisers all over the United States. It has become an American slogan.

The Present.—"Better Fruit" is today a continuation of what it has been in the past, with some improvements, and stands ready to help the fruit grower and the fruit industry in every possible way.

The Future.—The future of "Better Fruit" for the fruit growers is in your hands. It needs your support. If you give this cheerfully and generously it is all I ask. By your support I mean



This man believes in enjoying life. He lives in the country but he has the advantage of the city. His home is equipped with kitchen sinks, hot and cold water, modern bath room, sanitary toilet, wash room. His garden has taps here and there and his dairyhouse and barn has running water where needed. It cuts down his own work and very much reduces the work of the women folks. He likes it, his wife likes it, and his children like it. He had the goodness of judgment to invest in a

Mitchell

WATER SYSTEM

Hundreds of these systems are making country homes brighter and more comfortable. They are economical, dependable, simple. If you have a well, cistern, spring or creek on your place you can have running water in your home. We guarantee satisfaction.

Now the chap below believes in "getting along with things as they are." His wife totes water from the well, lifts the pail a hundred times a day. He spends hours pumping water for stock when he has other things to do. His children leave for the city as soon as they can get away where they can "at least have a few comforts."

Don't you think you'd better take our tip and send your name and address for our Free Book No. W15 called "Through the Eye of a Camera."

Mitchell, Lewis &
Staver Co.

Portland, Or.
Spokane and Boise



ACME Foot Lift Weeder

ARIDING orchard cultivator and mulcher. Gets all the weeds—large and small. Used in orchards or for summer fallowing; keeps down weed growth and properly mulches surface soil. **Foot Lift Lever** enables operator, on seat, to clear off weeds that may gather while working. All steel construction. Light draft. Depth of cut adjustable. Price right.

Your John Deere Dealer Sells It!

What a user says about it:

No. Yakima, July 31, 1914

Dear Sirs:—I take pleasure in recommending the ACME Weeder as the best implement I ever used for killing weeds and pulverizing the ground and I have used all of them. \$100 would not buy mine if I could not get another one. (Name on request)

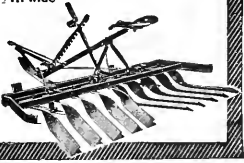
Another User Writes:

Mosier, Oregon, Aug. 22, 1914

Gentlemen:—I consider the Acme Foot Lift Weeder the best tool for cultivating orchards that I ever used, and as a weed killer it certainly is perfection. (Name on request)

DUANE H. NASH, Incorporated
347 Division Avenue Millington, N. J.

No. 8
8 1/2 ft. wide



San Diego Exposition

is now open to the world, complete, unique and well worth the journey, the time and the expense. NOW is the time to go

VIA THE
Shasta Route

Three fully equipped modern trains from Portland daily with conveniences for the most fastidious, as well as the humblest traveler will bring you in safety to San Francisco where you can visit the

Panama Pacific International Exposition

with all its buildings complete and the exhibits being rapidly installed. En Route to San Diego you can visit many of California's famous resorts—Santa Cruz, Del Monte, Paso Robles, Santa Barbara, Long Beach, Catalina, Santa Monica, Mt. Lowe, the Old Missions, the Orange Groves and others as interesting and delightful.

Call on nearest agent for full particulars, fares, reservations, train schedules, literature, etc.

Southern Pacific

John M. Scott, General Passenger Agent
Portland, Oregon



The Exposition Line 1915

your good will, your help. I want every fruit grower in the Northwest to be a subscriber. It costs but \$1.00 per year. I want every fruit grower who is a subscriber to persuade every neighbor who is a fruit grower to become a subscriber to "Better Fruit." The greater our subscription list the better publication I can issue, because advertising can only be obtained on circulation in sufficient quantity.

"Better Fruit" will continue in the future, as in the past, to give the best methods, the best ideas about cultivation, irrigation, pruning, spraying, treating all the different diseases, cover crops, by-products, economy in production and harvesting, packing and grading, and in fact everything of value,—the best obtainable in reference to the production of better fruit.

"Better Fruit" will endeavor to furnish you information about association work and about marketing; it will continue in the future to give you estimates of the crops and the actual quantity shipped at the end of the season, so far as obtainable. From time to time it will give you good, reliable information about the general averages of prices that have been obtained by the different districts on different grades of fruit. I believe the fruit-growers in the Northwest want a good publication that will fill the requirements along the lines indicated in this editorial, and I hope I have done my work in "Better Fruit" sufficiently well in the past to merit your support in the future. I believe the fruit-growers want a good publication, carrying out the policy of "Better Fruit" and

giving the kind of information that "Better Fruit" has given for almost nine years. I am sure they need one to enable them to better conditions. At no time in the past has a good fruit-growers' paper like "Better Fruit" been so vital a need as it is at present and for the future. I believe the fruit-growers want it. If "Better Fruit" meets with your satisfaction and approval, I again solicit your subscription and earnestly request that you persuade your neighbors to subscribe.

In conclusion permit me to wish you a Happy and Prosperous New Year, and to say that I honestly believe that with the right kind of effort, directed in the right way, that we can overcome the problems that at present seem big barriers. I believe that eventually, through the right kind of educational methods and a better knowledge of marketing conditions, the fruit-growers of the Northwest will solve the marketing problem.

Marketing Apples.—The experience of 1912 and the prices obtained were sufficient to indicate to the apple industry of the Northwest that steps would have to be taken to provide better and improved marketing facilities. Consequently the matter was given much attention and in 1913 an improved condition generally prevailed, which, owing to the fact that the crop was a moderate one in that year, proved fairly satisfactory. In 1914 a bumper crop of apples all over the United States was grown, which was probably the largest crop that had been produced since 1896. While no pools have been closed up to date, it is evident by the prices at which apples are selling that returns will be far from satisfactory to the growers this year; while it is possible that apple prices may pay the cost of production, it is quite evident that there will be little, if any, profit for the grower. Therefore the subject of marketing is commanding the attention, the thought and study of every apple grower as well as

GET THE STUMPS OUT

Make ALL Your Land Earn Money For You

"K" HAND-POWER STUMP PULLER

Makes stump pulling a one-man job. This powerful machine weighs only 171 lbs., but it pulls 96,000 lbs. Two speeds, high speed for light work, power speed for heavy work. No chains. Pull more than horse machines. Complete equipment, including 200-foot Weather-proof English steel cable. Used by U.S. Gov't in Alaska, and by many states and counties.

Valuable Book on Land Clearing FREE—My new catalog tells costs of different methods of land clearing. Write for it today, and get special direct-to-you prices.

W. J. FITZPATRICK
Box 5, 1926 2nd Ave.
Seattle, Wash.



every individual connected with every one of the marketing organizations.

The complaint is more or less universal on the part of different marketing concerns that prices have been unnecessarily cut this year. Those who have been selling Northwestern apples in various cities and towns throughout the country, in addition, report that the wild and haphazard method of consignment has been a big factor in glutting the markets, resulting in apples being sold unnecessarily low. It must be evident to anyone that if a city consumes 10 carloads of apples in a week and receives 20 on consignment, the inevitable must follow and ruinous prices result. An opinion prevails among a great many who have given the matter attention that if the apples of the Northwest could be distributed uniformly, without conflicting and overcrowding markets, much better prices would have been obtained this year. It is evident in order to obtain good prices markets must not be unnecessarily crowded with consignments. In order that the different marketing concerns continue to do a profitable business, it is necessary that the apple growers receive sufficient returns to pay the cost of production and a fair profit on the investment. If this cannot be done then it must be evident that some of the marketing concerns will have to go out of business, and many of the men who are connected with them must therefore lose their positions. It is to be assumed that all of the men connected with the marketing organizations are broad-minded business men who have a thorough appreciation of these facts. It seems only fair and reasonable to assume that marketing organizations must realize that the growers must make a profit in order for the marketing concerns to continue to make a profit and the different officials connected with them to receive their salaries.

Therefore it seems reasonable to hope that the different representatives of the marketing concerns will meet together in an open and frank sort of a

Manager and Superintendent

Graduate expert in horticulture and agriculture, wide field experience, desires position. Capable of best results at least cost. Able to handle men, money and accounts for large concern. Now holds responsible government position. Splendid references. Address Box 722, care of "Better Fruit."

An Experienced Orchardist

Wants a position as manager or foreman. Have had several years' experience in Rogue River Valley, Oregon. Thoroughly understands pruning, spraying, irrigation and treatment of all orchard diseases. Past three years managing large orchard in Southern Ohio. Wish to return West. Present contract expires February 1. Best of references. Address B. L. ENOS, Gallipolis, Ohio.

For Sale or Lease

for term of years, 20 acres bearing apples; best commercial varieties. Eastern Kansas; six-room house. Address "K," care of "Better Fruit."

"BLUE RIBBON"

(EXTRA FANCY)

"RED RIBBON"

(FANCY)

Famous Brands of Yakima Apples

Packed under our personal supervision

Get in touch with us by wire or letter

Yakima County Horticultural Union

E. E. SAMSON, Manager

NORTH YAKIMA, WASHINGTON

way, and it is hoped that they will be willing to act in harmony with a view of evolving a plan or policy that in the future will eliminate the unnecessary and disastrous competition, the unnecessary cutting of prices and unnecessary glutting of markets. With this object and others in view, a meeting of the officials of different marketing organizations has been called to be held in Seattle on January 22nd, and another meeting for the same purpose in Portland on January 25th. In addition to officials from the different marketing organizations a number of representative growers are being called on to be present and take part.

Growers are doing everything in their power to make the apple business more profitable in the future than it was in 1914. They are studying efficiency and economy in the cost of production and harvesting; they are reducing expenses in every possible way; they are endeavoring to assist the industry to success by engaging in diversity to the fullest possible extent; they are working to organize by-product factories to utilize the poorer grades and save the waste; they are willing to pay a liberal amount for marketing; they are willing to spend a reasonable portion of the income for advertising; and universally they feel justified in asking for harmony among the different organizations because they firmly believe that with the right kind of harmony unnecessary competition and cutting of prices can be eliminated, and glutting of markets by irrational and unlimited consignment be prevented.

It is the belief and hope of the apple growers that if the marketing organizations will meet together in the right spirit of fair and liberal mindedness, that with their knowledge of the busi-

ness and their experience, they can devise a plan whereby the apple crop of the Northwest can be marketed in a more intelligent way than it has been marketed in the year 1914. It is the belief of the growers that the Northwestern crop of apples can be proportionately distributed and marketed with orderly control, and it is their belief that if this is done prices can be obtained that will not only pay the cost of production but will pay the grower a fair income on his investment. It

Wanted A Position

by a competent orchard man or general ranch manager. Best of reference. Address "T," care "Better Fruit," Hood River, Oregon.

Expert Horticulturist

Western experience, open for engagement as horticulturist or general manager. College man, wide practical experience. Address 1004 Congar Street, Whitewater, Wisconsin.

Superintendent

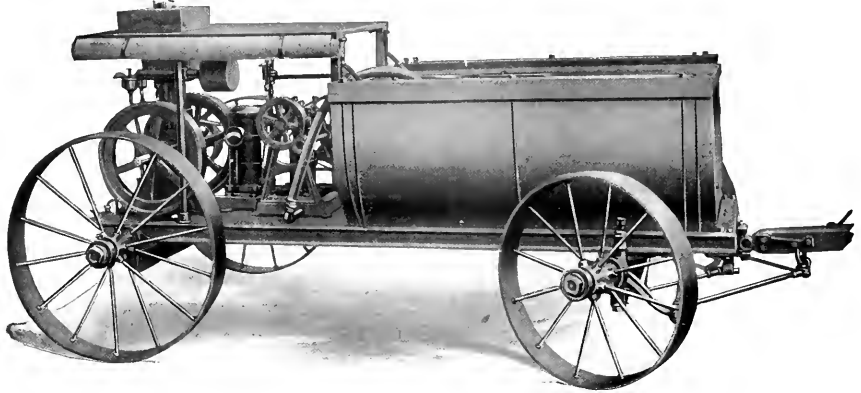
Orchard and farm, wants change. Many successful years' practical experience, together with technical learning. Larger the proposition the better. Good references. Address Box "G," care "Better Fruit."

For Rent

On favorable terms to experienced and capable orchardist, who can give good references, my 120-acre farm adjoining the city limits of Mosier, Oregon (Hood River district). Forty acres in fruit, 12 acres cleared for grain, balance uncleared and used for pasture. Address W. H. WEBER, 4319 Drexel Boulevard, Chicago, Illinois.

The SURE WAY TO SUCCESS

in fruit raising is in producing the highest percentage of high class fruit to your entire crop.
No surer way to accomplish this can be had than by the purchase of



A Hardie Hillside Triplex

Side hills and bad soil conditions don't delay its high-pressure efficient work. A closely set orchard is not injured and can be sprayed with ease. There is no machine to be compared with it. Get our catalog giving details.

The Hardie Mfg. Co. 49 North Front St. Portland, Oregon

seems reasonable also to assume that such an achievement will be satisfactory to the marketing concerns. It certainly cannot be very satisfactory to any man connected with the marketing of apples to handle the product without a profit to the producer. Therefore we believe that if the people attending these meetings will meet with a spirit of good will and fair mindedness, realizing that the grower must make a profit in order for their business to succeed, much can and will be accomplished at the meetings in Seattle and Portland.

Ferd Groner, of Hillsboro, Oregon, who has had much experience in growing walnuts and walnut trees, contributes a very interesting article about walnuts and the industry in this issue of "Better Fruit," which is worth reading. Walnuts have been grown successfully, particularly in the Willamette Valley, for a great many years. After the experimental stage had been passed it was determined that walnuts were a paying proposition. A great many orchards were set which have begun to bear during the last few years, proving that the industry is a profitable one. The walnuts grown in the Northwest are of excellent quality, the trees do well and bear well, all of which is valuable information for fruit growers, because nearly all fruit growers are seeking more or less diversity.

Soap With Arsenate of Lead Spray.—Two or three years ago a great many fruit growers in the Northwest used soap with arsenate of lead, finding that it made the lead spread very much better. This was particularly true when tobacco dip was used at the same time for aphids. It made the tobacco dip much more effective, but they found in the late spraying that the soap and arsenate of lead used alone in some instances caused more or less russeting. The Takanap Soap Company, of Germantown, Pennsylvania, are manufacturing a soap which they claim can be used with arsenate of lead without doing any burning.

More Potash Coming

American crops and soils are still as hungry for Potash as before the outbreak of the European War, which curtailed the Potash shipments.

Some of the Fertilizer Companies are trying to induce farmers to buy the one-sided low Potash or no Potash fertilizers of a generation ago. This means a fertilizer that is profitable to the manufacturer, but not the best for the farmer. When the Syndicate in 1910 started the direct sales of Potash to dealers and farmers at reasonable prices, Potash sales increased 45 per cent in one year, a clear proof that farmers know that Potash Pays. They know that Potash gives good yields, good quality and resistance to plant diseases.

Many of the Fertilizer manufacturers are willing to meet the farmer's wishes and sell him what he thinks he needs. These manufacturers are now willing to furnish as much Potash as they can secure. They offer goods with 5 per cent and even in some cases 10 per cent Potash, if the farmers insist on it.

Shipping conditions are improving, more Potash is coming forward, although the costs of production and transportation are higher. The higher price of fertilizers is not due wholly to the slightly higher cost of Potash. Much of the Potash that will be used in next spring's fertilizer had reached America before the war started.

There is no substitute for Potash. We can no more return to the fertilizer of twenty years ago than we can return to the inefficient farm implements or unprofitable livestock of that period. [Adv.] H. A. HUSTON.

HOW TO MAKE MONEY

in California on an investment of \$1,000.00 or less. I will tell you how to double your money yearly. Send 25c for book — ALFRED MITTING, Expert Horticulturist, 8 New Street, Santa Cruz, California.

335 EGGS YEAR EACH HEN, GUARANTEED

Feeding cheap home-made stimulant. Shortening moulting. Full instruction \$1, or send 25c, stamps or coin, to cover postage on strictly free package guaranteed month for two months' feeding your unlaying hens, fully convincing you before sending \$1.

BUY HENS—MAKE EASY MONEY
J. DUCREST
1112 Judkins Street Seattle, Washington



Grasselli Arsenate of Lead Paste Grasselli Arsenate of Lead Powdered

The quality which has been standard in all fruit growing sections of the United States during the past eight years.

Grasselli Brand Sulphate of Nicotine

Guaranteed to contain 40% Nicotine.

Thrips and other plant lice can be destroyed by spraying with Grasselli Brand Sulphate of Nicotine. May be combined with Arsenate of Lead or Lime-Sulphur Solution, or both, to give a combined treatment for Plant Lice, Leaf Eating Insects and Fungous Diseases.

The Grasselli Chemical Co.

Cleveland, Ohio

St. Paul, Minnesota

ESTABLISHED 1839

Distributors in All Leading Fruit Districts

The San Jose Scale Insect

By A. L. Melander, Entomologist, Pullman, Washington

THE San Jose scale is an Asiatic insect that was introduced into California about 1870, and since that time has spread into practically every fruit-growing district of the United States. Because of the rapidity of its multiplication and because its presence is poisonous to the plant on which it lives this species is considered one of the most destructive of all insect pests.

The scale of the adult insect measures about one-fifteenth of an inch in diameter and shelters the living insect beneath. The individual scales are cir-

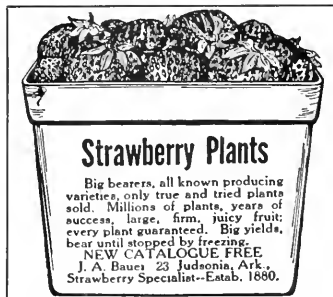
cular, flat and brownish yellow, and in the center bear a tiny darker pimple. Newly-born individuals are yellow in color and are naked, but acquire a blackish color, so that a twig infested with the scale in its various stages of development looks as if it were sprinkled over with ashes. So nearly is the insect colored like the bark that a few scales on a twig would pass unnoticed. When the insect becomes abundant, however, the bark is sometimes apt to assume a reddish or purplish color, due to the poisoning of the branches by the scale. This insect

lives also on the leaves and fruit, and usually in the case of apples, peaches, etc., causes a red ring to form in the skin of the fruit surrounding the scale.

Instead of propagating by egg production like most insects, the San Jose scale gives birth to living young. During the day of birth these minute individuals are active. They possess legs, eyes and feelers, but have no scale covering. During this day they migrate from their parents usually to locate on the newer growth. When they settle down, the waxy scale begins to form as a secretion from their backs. At the same time the insect underneath degenerates, losing its legs and feelers, and becomes virtually a helpless, hungry, minute speck of living matter. In about two weeks this insect molts and the cast shell becomes the center of the new and enlarging scale covering. The males now become oval in shape, retain their eyes and gradually grow stumps of legs and wings. The females become even more degenerate than before, their round body bearing little resemblance to other insects. A month to six weeks after birth, according to conditions of the weather, the life cycle is complete and the individuals attain sexual maturity. The males then emerge from their shells and immediately fertilize the sedentary females. During their brief life these males are quite active, but they are extremely delicate in their organization and easily perish. For some six weeks after mating, the females are able to produce live young at the rate of several each day. During the warm summer months the rate of reproduction reaches more than five hundred offspring to each mother. Theoretically, were all the offspring to survive, the progeny of a single

A Book You Ought to Have

IF you have not already received a copy of the wonderfully interesting book just put out by R. M. Kellogg Co., don't lay down this paper until you have sent for one. "Great Crops of Strawberries and How to Grow Them" is its suggestive title, and the book is all and more than its title conveys. Not only does it go fully into every detail of the work in such a way as to make it possible for even the novice to achieve success in this field, but it contains letters from growers who tell in a most delightful and convincing way of the pleasure and profit they have derived from their endeavors along this line. Nearly every page has beautiful illustrations which are most valuable and helpful. R. M. Kellogg Co. are specialists in strawberry plants which have made their name famous the world over. The book will be sent free to all of our readers who ask for it. Address R. M. KELLOGG CO., Box 355, Three Rivers, Michigan.



Quality and Economy

Ortho Brand Arsenate of Lead

California Spray-Chemical Co.
WATSONVILLE, CALIF.

Where do the poultry profits go? Have you ever figured this out? We have made an exhaustive study of this important problem and the answer is in our new Poultry Book, just off the press. Send 10c for a copy, to-day, and we will enclose our Cash Value Coupon. The book is worth several dollars to the poultry owner.



THE H. E. CONKEY CO.
111 Conkey Building, Cleveland, Ohio

THE GENUINE SMITH STUMP PULLERS
W. SMITH GRUBBER CO.
CATALOG FREE - DEPT. 170 1A CRESCENT, MINN.

COMMERCIAL AND HOME CANNING OUTFITS AND EVAPORATORS

Make more money from your orchard by saving the waste. Convert your low grades and over-supply into canned and evaporated fruit, for which there is always a good demand and good prices.

If you want to learn more about this, write us. We will be pleased to furnish you descriptive matter regarding our outfits and quote you our prices.

HENNINGER & AYES MFG. CO.
47 First Street
PORTLAND, OREGON

Spray
The Morrill & Morley Way has been in service 29 years. Durable, efficient, economical. The U. S. Department of Agriculture uses it, and you can make it profitable to your orchard, vineyard or potato field. Catalog sent free, on request.

Morrill & Morley Mfg. Co., Box 12, Benton Harbor, Mich.

Eclipse Spray Pump

over-wintering pair of parents would amount to several billions of individuals. This number of scales placed side by side would cover an acre of surface, and, of course, is never realized, because always there is natural death.

Continued in next issue

Removal Announcement

The Northwestern Fruit Exchange will remove its general offices to the Stuart Building, Seattle, Washington, January 16, 1915. All communications timed to arrive on or after January 18 should be addressed as follows: Mail: Northwestern Fruit Exchange, P.O. Box 1898, Seattle, Washington. Telegrams: Northwestern Fruit Exchange, Stuart Building, Seattle, Washington. Cablegrams: Norfex, Seattle (U. S. A.). This change in location is occasioned by the consolidation of the executive department, heretofore located at Seattle, and the various operating departments now located at Portland; deemed advisable because of the important expansion in the business of the Exchange, and the belief that its affiliations and its customers alike can be better served from its new location.

BARTLETT PRUNING TOOLS



are designed on scientific principles, made of the highest grade materials and sold on their merits.

We make a complete line, including our **JOINTED TREE TRIMMER**, and will be glad to send catalogue and booklet on pruning upon request.

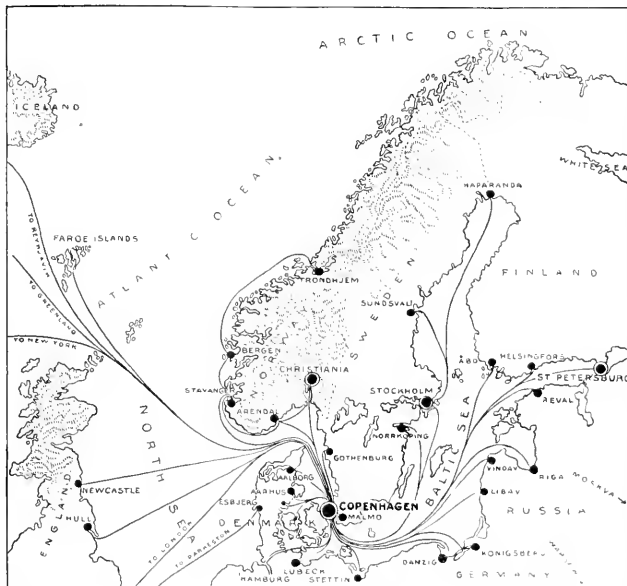
No. 18, Pruning Saw Price \$1.75
No. 777, Two Hand Pruner 26-in. Ash Handles, \$2.00

Your dealer can supply you. If he does not, mail money order to us and we will ship prepaid.

No. 18 **BARTLETT MFG. CO.** No. 777
Boydell Building DETROIT, MICHIGAN

Oregon Agricultural College at Corvallis, Oregon, will hold its winter short courses from January 4 to 30. Farmers' week will follow immediately, from February 1 to 6. These meetings are largely attended by farmers and fruit growers, because they have found them very instructive and valuable. Therefore we feel justified in saying that every fruit grower and farmer who can possibly arrange matters to take one of these courses will be mighty well repaid for so doing.

Scandinavia and the Baltic Market

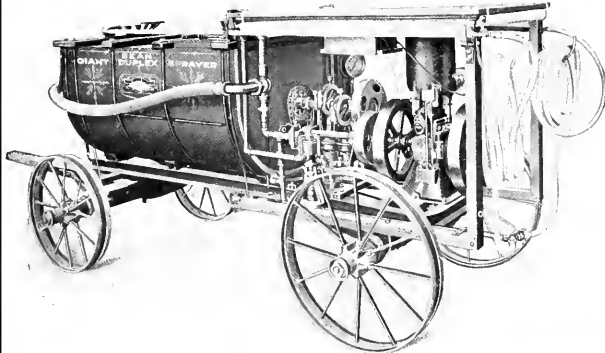


We have a good outlet in the markets shown on above map. We handle apples only on a consignment basis. All consignments have our personal attention. Have you anything to offer? Do not fail to write or cable us.

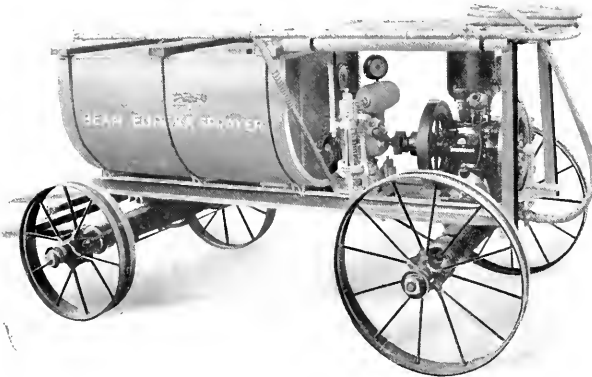
ERNST C. LOHSE & CO. S EFT., Copenhagen
Cable Address: ERNST LOHSE **Fruit and Produce Agents**

Bean Power Sprayers

For downright dependability—simplicity of operation—ease of handling—effective high pressure work—convenience—durability—and all round satisfaction—the Bean is in a class by itself. Made in various sizes and capacities—and **BEAN QUALITY** has been built into them all. Illustrated below are two of our popular rigs.



THE BEAN GIANT
A Marvel of Power, Capacity and Efficiency



THE BEAN EUREKA
A Dandy Little One-Man Power Rig

The Bean Giant

The Leader of the Bean Line

Among many distinctive features, we call your special attention to the following:

NOVO ENGINE—the best sprayer engine on the market. Light, strong, powerful, certain in operation, and economical of fuel.

BEAN POWER PUMP—the result of years of study and experiment. They possess many patented and protected features.

PORCELAIN-LINED CYLINDERS—which never wear out, contain no stuffing box, and cannot be injured by acids or spray materials.

VALVES—non-corrosive, cannot stick or clog up.

ROTARY AGITATOR—which keeps the material perfectly agitated.

ROCKING BOLSTER—on front axle, so that tank always remains level.

UNDERNEATH SUCTION—which makes replacing of cracked hose unnecessary and does away with priming.

BEAN PRESSURE REGULATOR—which saves fuel, saves wear and tear on engine and pump, ends regulator troubles, and saves time, money and temper.

For complete description of the Bean Giant Triplex and Bean Giant Duplex read 14 to 21 in our Catalog 28-A.

The Bean Eureka

A One-Man Power Sprayer

This is the first season that you have been offered Bean quality in a small, low-priced power outfit. This is a one-man rig. One horse can haul it without trouble. Supplies one line of hose at high pressure and will cover from two to three acres a day. **BEAN QUALITY** through and through, with the many distinctive features that have made Bean power sprayers the recognized leaders throughout the fruit-growing world.

Equipped with Novo Engine, Special Power Pump, Pressure Regulator, 100-gallon Redwood Tank, Rotary Agitator, Truck, Canvas Cover and Curtains, Bean High Pressure Spray Hose, Rod, and Complete Set of Tools and Accessories—all ready to begin work.

For the grower with a comparatively small acreage, the Bean Eureka is just the rig.

Furnished, also, without tank and truck—for the operator to mount on his own wagon. Write for wonderfully low price.

**Sign and Mail this Coupon Now for
Our Complete Sprayer Catalog**



It illustrates and describes the entire Bean line of Hand and Power Sprayers. It explains the many distinctive Bean features and tells you many things you should know before you invest in a sprayer.

BEAN SPRAY PUMPS are built complete in our own factory, with the exception of the Novo engine—and who can build a better sprayer engine than the Novo? Every outfit is carefully tested before it leaves our plant—and is guaranteed to do good work—and to continue to do good work—when it reaches the grower. Our factory representatives visit all fruit sections regularly and are always ready to lend a helping hand to any Bean operator.

BEAN SPRAY PUMP CO.

213 West Julian Street

San Jose, California

12 Hosmer Street, Lansing, Michigan

DELIVERIES MADE FROM PORTLAND AND OTHER NORTHWEST POINTS

USE OUR TRI-PLY COUPONS AND GET THIS LINE'S SIGN AND SEND TO US
BEAN SPRAY PUMP CO.
 213 West Julian St., San Jose, California.
 (Telephone 28-A.) Please send me a copy of your Catalog
 Name _____
 Address _____
 Bean Giant _____
 Bean Eureka _____

CROCKERY

**Quickly Made
Clean and
Bright by the
Use of**



**Large
Sifter Can,
with Full
Directions, 10c**



**Old Dutch
Cleanser**

Chases
Dirt

MAKES EVERYTHING 'SPICK AND SPAN'


"Sprayed 16,000 Trees—No Repairs"

—so says one of our thousands of satisfied customers, Mr. J. A. Bingham, Pillow, Pa. He did the work with a Goulds "Pomona" Sprayer, shown below. This two-hose, four-nozzle sprayer can't be beaten for use in small orchards, and where labor is cheap, is used in large orchards—several machines taking the place of a large power outfit. Wearing parts are of solid bronze. Large steel air chamber gives uniform pressure. Easily adjusted and cleaned. Fits any barrel. It's only one of 50 styles and sizes of hand, barrel and power sprayers, made at the largest pump works in the country.

**GOULDS
RELIABLE
SPRAYERS**

are guaranteed; backed by 65 years' pump-making experience. Write our nearest office for valuable 44-page book, "How To Spray." It is free. Send for your copy today.

THE GOULDS MFG. CO.
Main Office and Works:
SENECA FALLS, N. Y.
Branches:
New York Atlanta Chicago
Houston Boston

Growers Grip By-Products Problem

UPON the ten men named at the by-products convention held in Spokane in connection with the National Apple Show as the central by-products board will develop the forming of central by-products organization, along the general lines recommended by the original by-products committee in its report. Their duties will be even more extensive than the formation of the by-products organization, as they are instructed by the congress to take such methods as they may find practical in

bringing the existing fresh fruit selling agencies into more harmonious action to eliminate cut-throat selling competition.

H. C. Sampson, as chairman of the former committee, was delegated to issue a call for the first meeting of the new central board, as no chairman has yet been named. The meeting for organization and the general outlining of the work will be held at the North Yakima Commercial Club Saturday morning, December 5, at 9 o'clock. The

joint committee, consisting of the original by-products committee, its auxiliary committee and representatives of the fresh fruit selling agencies, brought in its report, which was read by Secretary J. F. Batchelder and adopted without comment.

The report of the committee was as follows: "Resolved, That we recommend to the by-products convention that a board of ten be appointed, representing the different fruit producing districts of the Northwest, with power to act in the formation of a by-products organization along the general lines recommended by the by-products committee, including such effort as they may find practical to bring the present fresh fruit selling agencies into more harmonious action, and to take such additional action as the board may deem wise. Resolved, That as soon as possible the permanent representative of each district be referred to the growers and by-products institutions of each district in such a manner as the board shall desire. Resolved, That the new board be selected by a committee consisting of H. C. Sampson, W. H. Paulhamus and F. E. Sickels."

In the selections the committee has selected bankers, growers and practical by-products men now in charge of plants. H. M. Sloan is an orchard owner and president of the Bitter Root Irrigation Company. Paul A. Weyrauch is manager of the Blalock Fruit Company of Walla Walla. Conrad Rose is head of the Wenatchee Produce Company, a successful grower and one of the largest individual shippers of fruit in the Northwest. Alexander Miller is vice-president of the First National Bank of North Yakima and owner of the Miller Block in that city. W. H. Paulhamus of Puyallup is president and manager of the Puyallup and Sumner Fruitgrowers' Association, operating the largest and most successful co-

Cutaway (CLARK)

BUSH AND BOG PLOW

does work no other machine can do. It cuts down bushes, demolishes bogs, and does all kinds of hard plowing and disking. It is big and strong and withstands terrific strain. Ask your dealer about it. If he doesn't sell CUTAWAY (CLARK) implements, write us at once for free catalog. There are no substitutes.

THE CUTAWAY HARROW COMPANY
Maker of the original CLARK disk harrows and plows
940 MAIN STREET HIGGANUM, CONN.

Weight 600 pounds
Four-horse hitch
24-inch disks Dust-proof hardwood bearings
forged sharp



operative by-products plant in the Northwest. Truman Butler is vice-president and manager of the Butler Banking Company of Hood River, Oregon. D. A. Snyder is a banker and the proprietor of a successful private evaporating plant and cannery at Dayton, Oregon. J. H. Holt is manager of the Eugene Co-operative Cannery at Eugene, Oregon. M. J. Tingley is manager of the Southern Idaho sub-central of the North Pacific Fruit Distributors.

The by-products meeting brought out the largest attendance of any of the fruit congresses, close to 500 prominent growers, by-products men and scientific experts being present. A feature was the number of women and several of these participated in the discussions. The papers on topics relating to home canning, read while the committee was deliberating, proved of special interest and the speakers were called upon to answer many questions.

Professor C. C. Vincent of the University of Idaho, Moscow, told of experiences with a home-canning plant for three years. The investigations show that eight persons can handle 370 cans of peas in a day, while five persons can handle 330 cans of tomatoes. A day's work for one person with a home-canning plant is as follows: Peas, 120 pounds; beans, 80 pounds; tomatoes, 370 pounds; peaches, 340 pounds; apricots, 220 pounds; pie cherries, 20 gallons; flesh-colored cherries, 150 pounds; raspberries, 60 crates; strawberries, 10 crates. The cost of producing canned stuff is as follows per case: Peas, \$1.89; beans, \$1.57; tomatoes, \$1.73; corn, \$1.91; peaches, \$1.86; apricots, \$2.21; raspberries, \$1.64; dewberries, \$1.61; loganberries, \$2.12. The total average cost was \$1.73 a case, while the wholesale price was \$2.20. The average profit was \$114 per acre.

J. R. Shinn, agriculturist for Spokane County, spoke on the value of apple pomace as a food for dairy cows. He submitted tables showing that its food value was practically the same as corn silage when fed fresh. It can be kept fresh in ordinary silos.

T. J. Newbill of the Department of Agriculture submitted a number of working specimens of home-canning plants used in boys and girls' club work, and told what some children were accomplishing with similar plants. He lauded the work of the Spokane County Agriculturist in starting boys' apple clubs and gave the state credit for having started the first club for children in the United States.

J. H. Morton of Portland read a technical paper on the construction and operation of an evaporating plant. He showed drawings of a model two-tunnel drier. His paper brought out many questions.

H. C. Gore of the Fruit and Vegetable Utilization Laboratory of the Department of Agriculture spoke on the new apple by-products, condensed cider and cider syrup. Samples were shown and the method of making explained. For condensed cider a tank of cider is frozen solid, the chunk of cider ice broken

3 SHERWIN-WILLIAMS Spraying Products

Now put up in Dry Form for Convenient Handling and Effective Spraying

You can now get 3 S-W Insecticides and Fungicides in a dry powdered form—easy to ship—light—no danger of freezing, drying out or spoiling. Also improved in many chemical ways.

S-W Dry Powdered Arsenate of Lead
Dry powdered form gives maximum killing power at minimum expense.

S-W Dry Powdered Tuber Tonic
A three-in-one potato spray that kills leaf eating insects, prevents blight and acts as tonic to the plant.

S-W Dry Powdered Fungi Bordo
An extremely effective scientific fungicide of exact chemical make-up, eliminating all uncertainties of home-made or commercial Bordeaux Mixtures.

Our Lime Sulphur Solution is particularly effective for San Jose Scale.

Send for our Spraying Literature



The SHERWIN-WILLIAMS Co.

Insecticide and Fungicide Makers
707 Canal Road, Cleveland, Ohio



GREAT REDUCTION IN PRICES

Apples, Pears, Peaches, Prunes, Plums, Cherries, Apricots, Nut Trees, etc. Also Gooseberries, Currants, Strawberries, Grapes, Berry Bushes, Rhubarb, etc.

ALL OF THIS STOCK MUST BE SOLD

Write today submitting your want list for quotations; also ask about our premium offers, which are worthy of your consideration.

LAFAYETTE NURSERY CO., Desk A, Lafayette, Oregon

Always Specify



Then **BE SURE** this brand is on the kegs you get

Honest Quality and Full Count have made them the World's Standard, which is why you should insist on

“PEARSON'S”

And Accept No Substitute

Pacific Coast Agents

UNITED STATES STEEL PRODUCTS CO.
San Francisco—Los Angeles—Portland—Seattle

J. C. PEARSON COMPANY, Inc., Old South Building, Boston, Mass., Sole Manufacturers

HURST SPRAYERS

The Famous Quality Line

The result of 28 years' practical experience in building sprayers. Hurst Sprayers have stood the test of time and stand today head and shoulders above all competition. The big success of the Hurst line can be summed up in one word "Simplicity."

Every Hurst Sprayer is a marvel of simplicity. No unnecessary parts to cause trouble and annoyance. Combined with simplicity they have the greatest convenience and utility.

32 Different Styles

A quality sprayer for every known need. Man, horse and gasoline engine power. Various sizes and styles of power sprayers, with and without engines. The Pony Acme, shown below, is an exceedingly popular machine with the Western growers.

Get Our Big Free Book

This book should be in the hands of every fruit grower and farmer. Used as a class book in many of the Agricultural Schools. Contains 74 illustrations and description of insect and fungus pests and gives the remedy for each. Shows our complete line of sprayers.

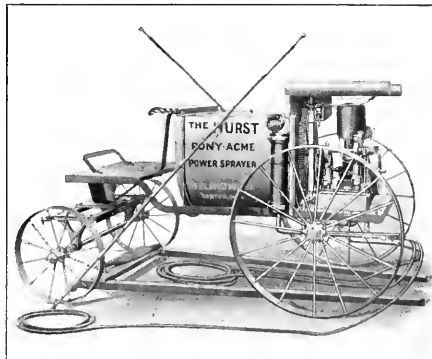
Write the Royer Implementation Company, of Portland, Oregon, or us for a copy of this free book at once.

Live dealers wanted everywhere.

THE
H. L. HURST
MFG. CO.

8229 North Street
Canton, Ohio

**THIS BOOK
FREE**



up in a crusher and the mass put through a centrifugal machine, from which the condensed cider is extracted. He declared the commodity did not compete with the apple in any way.

One barrel of condensed cider will make five barrels of cider by merely adding water. It requires no preservative and cuts the costs of freight transportation and cooepage for barrels. In making cider syrup a filter press is necessary, and Mr. Gore stated that the government was not through with its experiments, as the proper clarity had not been attained. In response to a query from R. E. Strahorn he stated that the syrup could not be reduced to sugar, as it failed to crystallize. He complimented Seiter Brothers of Moran Prairie on their product, which he said was superior to the government product. A. J. Seiter stated that his product was the result of ten years of experiment.

H. C. Sampson, chairman of the by-products committee, submitted the committee's report of its investigations of the last twelve months. He reported a total fruit acreage in the Northwest of 605,000 acres, which would produce ultimately 150,000 cars of fruit, of which the railroads could furnish refrigerator car service for about 30,000 cars and 20,000 cars could be stored in the Northwest, leaving a total of 100,000 cars to be cared for in by-products plants. In 1914, according to the report, of 12,000 cars of apples in the Northwest, 5,050 cars were combined "C" grade and live-tier fruit not large enough or good enough to be wisely salable.

"Growers must adjust their ideas away from the basis of the high prices of a few years ago to a basis of modest profit on carefully tended, economically managed orchards," said Mr. Sampson. "The vital factor is the conservation of high-grade fruit and the assurance of a reasonable price for green fruit. Montana does not have a single cannery or evaporator within her territory. Nevertheless, during 1913 Montana imported 60,000 cases of canned fruit, 70 per cent of which was peaches and pears. She imported 40 cars of apple-cider vinegar and 20 cars of sweet cider. She imported 125,000 cases of tomatoes, 75,000 corn, 60,000 peas and 25,000 beans, or a total of 285,000 cases of canned vegetables. No figures are obtainable as to her importations of dried and evaporated fruits and vegetables. Idaho in 1913 shipped out 175 tons of dried apples, 50 of dried prunes, 75 of other dried fruits, 25 of canned berries, 100 of canned peaches, 25 of canned rhubarb and 50 of beans, but during that same year the same state imported 185 tons of dried apples, 75 of dried prunes, 150 of dried peaches, 100 of other dried fruits and 950 of canned fruits and vegetables. Her imports were a total of 96 tons greater than her total exports.

"Our present needs in the four states, as shown by excess of imports over exports; the natural heavy increase of by-products consumption, as shown by

the report of the committee, and the success of the State of California, all indicate a large output possible from the Northwest at fair prices for our own manufactured products. Through the co-operation of our own railroads, wholesalers, retailers and buying-at-home leagues; by the stimulation of lumber-camp trade, and with our present home and Alaskan needs, surely we can increase our consumption materially in our own home territory. The committee finds a number of surprising things. Much fruit goes to waste in many Northwestern towns and cities, and the same variety of fruit, canned or evaporated in California, is found on the merchant's shelves in these same villages. Annually California imports great quantities of Royal Ann cherries for maraschinos, imports hundreds of tons of Oregon pears and exports back to this country and the Canadian territory this same fruit. Some districts let hundreds of tons of apples go to waste and import every pint of vinegar they use.

"Corn canned in the West is shipped to the East and returned under Eastern labels. Vinegar of the West is shipped in barrels to the East, put into cases, returned to the Northwest and sold at four times the price it was bought for. And all these products are from our own home states, but bear a foreign label, thus losing to us the advertising value. California supplies the dried and canned fruit largely for our own states and the territory north of us. She uses thousands of tons of peach seeds, the kernels being processed and sold as "bitter almonds" or shipped to Germany and there used for the manufacture of prussic acid. The committee is unanimous in its conclusion that a central by-products organization is necessary for the salvation of our fruit and vegetable industry. Therefore, the committee unanimously agreed to call this convention today for the purpose of forming a central by-products organization whose functions, the committee recommends, shall be: First, to act in an advisory capacity to all districts contemplating establishing plants and to employ experts whose services are to be paid for by such districts. Second, to arrange for a central selling agency for the handling of by-products."

In discussing the report M. M. Higley of Payette, Idaho, declared Southern Idaho was convinced that definite action at the present meeting was urgent. He said the growers and the commercial clubs of that portion of the Northwest were heart and soul in the movement. Failures in plants, he said, were generally due to inadequate information and immature judgment, two things a central organization could furnish all the districts.

George Tinker of Corvallis, Oregon, declared an organization was not wanted by the growers unless it could be made co-operative like the North Pacific Fruit Distributors.

W. H. Paulhamus of Puyallup declared he was heartily in sympathy with any movement that would better

Fruit Tree Stocks

FOREIGN AND DOMESTIC
ALL GRADES

Pear Seedlings French (American-Grown and Imported)
Japan and Kieffer (American-Grown)

Apple Seedlings American-Grown and Imported, straight or branched
for budding or grafting, Doune and French Paradise

Cherry Seedlings Malakleb and
Mazzard

Quince Stocks Mariana, Myrobalan
and St. Julian

Plum Seedlings Canina, Manetti
and Multiflora

Peach Seedlings A complete
assortment

Rose Stocks Any style and
variety

Lining-Out-Stock A full line

Grafts A full line

General Nursery Stock A full line

"No matter what you want or how much, send us your list for prices. It will pay you."

SHENANDOAH NURSERIES

D. S. LAKE, President SHENANDOAH, IOWA

CHICAGO

SAINT LOUIS

NEW YORK and the

main centers of population
in the Middle West and the

EAST

Quickly and Pleasantly Reached

VIA

UNION PACIFIC SYSTEM

OREGON-WASHINGTON RAILROAD & NAVIGATION CO.

OREGON SHORT LINE—UNION PACIFIC

STOPOVER ALLOWED AT
HOT LAKE
OREGON
HOTTEST, MOST CURATIVE
SPRING IN THE WORLD

Dining, Sleeping and Observation Car Service up to the Highest Standard; Comfortable Appointments; Convenient Schedules; Direct Connections.

Steel Coaches — Block Signals

Any representative of this system will be delighted to assist you with information, tickets and travel service according to your needs. Call upon or phone the

CITY TICKET OFFICE
Third and Washington Streets
Portland, Oregon

Ask about Low Round Trip Fares
to Sunny Florida



TO DESTROY APHIS, THRIPS, ETC.
 Without Injury to Foliage
 SPRAY WITH

“Black Leaf 40”

SULPHATE OF NICOTINE

“Black Leaf 40” is highly recommended by Experiment Stations and spray-
 ing experts throughout the entire United States.

Owing to the large dilution, neither foliage nor fruit is stained.

Also, “Black Leaf 40” is perfectly soluble in water; no clogging of nozzles.

PRICES

10-pound Can **\$10.75**

Makes 1,500 to 2,000 gallons for Pear Thrips, with addition of
 3% distillate oil emulsion; or about 1,000 gallons for Green Aphis,
 Pear Psylla, Hop Louse, etc.; or about 800 gallons for Black
 Aphis and Woolly Aphis, with addition of three or four pounds of
 any good laundry soap to each 100 gallons of water.

2-pound Can **\$2.50**

½-pound Can **.75**

If you cannot obtain “Black Leaf 40” from a local dealer, send us P.O. Money
 Order and we will ship you by express at the above prices, prepaying the
 expressage to your nearest railroad town in the United States.

The Kentucky Tobacco Product Company
 INCORPORATED
Louisville, Kentucky

the condition of the man on the farm, but added that no business was worth while that did not show profits. The great trouble is the lack of money to do anything,” he said, “and the financing of the by-products industry will take hundreds of thousands of dollars. Where are you going to get it? There isn’t a banker in the country who will finance a plant that merely depends on the bad fruit somebody can’t sell. Let the people who handle the good fruit handle the bad fruit as well. Make the good apples take care of the poor ones. In our organization the by-products business is heavier than the fresh fruit, but we make the fresh-fruit money finance the by-products. Is this thing for the individual or for the people? If the growers haven’t enough energy to take care of themselves an individual is better than nothing. There are six men in the Northwest that ought to be shut in a room inside a high iron fence and made to get together before being let out. I mean H. M. Gilbert of Toppenish, E. F. Sampson of North Yakima, Conrad Rose and W. T. Clark of Wenatchee, J. H. Robbins of Spokane and T. F. Gwinn of Portland. These men, through the organization they represent, handle approximately 90 per cent of the Northwest fruit production. Don’t let them quarrel about who is going to be president,” continued Mr. Paulhamus. “They can get together and form the best by-products organization on earth. Form these selling agencies in one or two organizations—two are much better than 100—and stop this loss to growers by cutting prices. There are too many sellers and the system is absolutely wrong. There is a market for all our stuff if we go at it in a reasonable way. Conditions are growing worse every year and the cut-throat policy must stop.”

F. E. Sickels of North Yakima declared there was no room for argument concerning the need of a central by-products organization. He favored a co-operative organization and stated that the by-products organization and the fresh-fruit organization should work harmoniously and be practically one.

Orris Dorman of Spokane moved the adoption of the committee’s report, with the recommendation of Mr. Paulhamus added. Mr. Sickels seconded the motion and the report was adopted.

The conference resolved itself into a convention at this juncture and H. C. Sampson, chairman, and J. F. Bathelder of Portland, secretary, were made permanent officers.

A warm discussion followed the motion of Mr. Dorman that the present committee be augmented by the men named by Mr. Paulhamus, to prepare some plan of action. This motion was finally carried in amended form, the name of H. F. Davidson, president of the distributors, being added as a permanent member, and R. B. Parsons of the Northwest Fruit Exchange was named to act for Mr. Gwinn, who was not in attendance. For the same reason Mr. Sickels was named to act temporarily for Mr. Davidson.

Write to-day
 for your Copy

1915 CATALOG
 “DIAMOND QUALITY”
 TESTED
SEEDS

Diamond Quality Seeds

are TESTED seeds. Above the standard of the seed laws.

GOULD SPRAY PUMPS
 “CORONA” Arsenate of Lead (Dry Powdered)
 SPRA-SULPHUR (Soluble)
 Special spray booklet on request

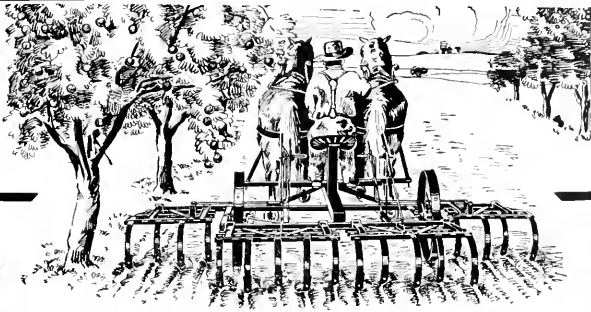
This catalog truthfully presents and illustrates the most desirable varieties of seeds for the Northwest.

The best of everything for the market or home garden, the farm, the orchard, the poultryman and the bee-keeper.

A reliable and safe guide to your purchases and a reference book which should be in the hands of every grower. Ask for catalog No. 200.

PORTLAND SEED CO.
 Portland, Oregon





The Forkner Light Draft Harrow

Broad Gauge—Works right up to the trees. Detachable end extensions reach far out from horses' path. Gets in under the lowest branches, stirring up the soil evenly and thoroughly without breaking boughs or knocking off fruit. *Neither team nor driver has to dodge the boughs.*

Light Running—Two horses will cover the ground quicker, easier and better than with any other.

Wheels Carry Weight—not your horses' necks. Whether you ride or walk, machine has perfect balance. Broad rimmed wheels run on greased axles, carrying weight of machine and driver.

Will Not Clog or Drag Dirt—Frame is well up above ground. Teeth lift soil and turn it way over.

Each Section Hinged In Front With Adjustable Couplings—Lever regulation in convenient reach affords easy control.

Built For Long, Hard Service—Frame of strong, angle steel—teeth best oil-tempered spring steel.

The Illustration Will Tell You Much if you are at all experienced with other lines. No fancy frills—but a machine with height of wheel, breadth of sweep and arrangement of teeth that means covering a lot of ground in a day and doing it thoroughly.

Write Tonight! for free booklet "Modern Orchard Tillage" and catalog of these labor saving implements.

LIGHT DRAFT HARROW CO.

601 East Nevada Street

MARSHALLTOWN, IOWA

FREE Book on **RHUBARB Culture**
WRITE FOR IT TODAY

Now is the Best Time to PLANT
RHUBARB, BERRIES and Small Fruit
 If planted now you should derive good results

J. B. WAGNER—Pasadena, Cal.
The Rhubarb-Berry & Cactus Specialist.

Evaporated Loganberries

By H. S. Gile, Salem, Oregon

MANY producers of loganberries fear that the time has about arrived when they will be compelled to destroy their plantings because of insufficient demand to keep pace with the rapidly-expanding production. While this fruit in the Willamette Valley is a tremendous producer, it must not be forgotten that the grower must get as much as three cents per pound for his fresh fruit in order to receive any reasonable return upon his investment. From this viewpoint this writer would like to point out some of the merits of the loganberry when evaporated. In the years to come we may expect the canners to take liberal quantities whenever they can purchase them as low as two and one-half cents per pound, which is about the price they usually pay for Evergreen blackberries for the manufacture of gallon pie fruit. There

will also probably be an increasing outlet through the shipment of fresh loganberries, especially in seasons when weather conditions are favorable and as the shippers understand better the problems affecting their safe transportation, and, lastly, there will without doubt be one or more buyers in the field hereafter in the interest of loganberry juice manufacturers, as there can now be little doubt that as a non-alcoholic beverage loganberry juice exceeds anything on the market, and here is a very large field which offers itself for development, but upon the question of a general market for the evaporated fruit at a reasonable price depends in a very large measure the entire future of the industry. If the grower may always have the consciousness that if all the other avenues fail to provide him a profitable outlet for his product

he still has recourse to evaporation with certainty of profit, then nothing from the market side of the question can prevent loganberry growing from taking a high place in the diversified list of Oregon's important products.

If, as some contend, our hop industry in Oregon is ruined because the people have declared against the saloon, why may not loganberry culture more than take its place? As a distributor of money per acre for labor to the men, women and children of Oregon it would certainly equal hops.

It requires from five and one-half to six pounds of fresh loganberries to make a pound of evaporated fruit. The commercial charge at present for evaporating loganberries is three cents per dried fruit pound. From this it is readily seen that the wholesale carload price per pound f.o.b. on this Coast must range as a minimum right around twenty cents, with a higher graduated scale for cartons and small packages, but even at this price there would not appear to be any good reason why the consumer in any part of the United States should be required to pay more than thirty-five cents per pound for the best evaporated loganberries. At first thought this may seem to be expensive fruit, but it can readily be proven that at this price evaporated loganberries are about the most economical of all cured fruits, and not only so but it has recently been demonstrated that the peculiar, strong, rank flavor possessed by the fresh fruit (disliked by many persons) is entirely overcome by the recently-discovered process of preparing the evaporated fruit for the market. Furthermore, in the process of evaporation a very large per cent of the fruit juices are reduced to sugars, and this explains why jelly, pie and jam made from the evaporated fruit possesses a flavor superior to that made from the fresh fruit, and not only so but better results are secured with a less quantity of sugar.

The writer believes that the American consuming public only needs to be informed concerning the convenience, economy and splendid merit of the new process evaporated loganberries to bring them into general consumptive demand, and when they are once well known no other evaporated fruit—except prunes—will have a wider sale or be more generally used. For example, with what cured fruit can you get so good results at so small cost and trouble as the following, and this is only one of many suggestions which we might make: Take one-half pound of evaporated loganberries, place them in a porcelain vessel, add three teacups cold water and soak over night. Then drain off the pure juice. There should be two or more teacups. Then add to the soaked fruit one teacup of cold water, one heaping teacup of sugar and mash with a potato masher. This will give you two pounds of choice pure fruit jam without any cooking. You can then take the pure juice which you have saved and use it

Sunshine Lamp
300 Candle Power **FREE**
To Try in Your Own Home
 Turns night into day. Gives better light than gas, electricity or 15 ordinary lamps at one-tenth the cost. For Homes, Stores, Halls, Churches. A child can carry it. Makes its light from common gas-line. No wick. No chimney. Absolutely SAFE.
COSTS 1 CENT A NIGHT
 We want one person in each locality to whom we can refer new customers. Take advantage of our SPECIAL FREE TRIAL OFFER. Write today. AGENTS WANTED.
SUNSHINE SAFETY LAMP CO.
 241 Factory Bldg., Kansas City, Mo.



"WE STARTED RIGHT AND WE ARE RIGHT"

6458 Acres

IN OUR ENTERPRISE

4178 Acres

ALL IN APPLES

Nine miles continuous rows of trees, the largest apple orchard ever planted.

All are one, two and three years old, the two and three year old all sold, amounting to over 3,000 acres.

We are now offering our one year at terms to suit you.

We give five years' from date of planting, free care. Our company is unlike others in the feature of staying with our purchasers after the free care period. Our plans make our interests mutual; we all work together for the interest of all.

Our Booklet will give you a simple statement of our dealings and methods. Write us for information.

DUFUR ORCHARD COMPANY

Northwestern Bank Building
 Portland, Oregon

YOU WANT THE BEST SPRAYER
 You want to save time, temper, trouble and trees. You want to raise fruit that brings the highest prices. You want to know all about our sprayer before you buy. There is more you ought to know. Do You Want To Know The Price?
 Write for Catalogue #6
MEIERSON MACHINERY CO.
 Manufacturers 182 Morrison St., Portland, Ore.



Healthy Trees
Perfect Apples
 when you spray with
"SCALECID"
 — the spray that's endorsed the country over as "The one great dormant spray." Mixed 1 to 15, it kills every scale it reaches or you get your money back. Guarantee with every package. It's easily prepared, non-corrosive and non-clogging. 1bbal. equals 3bbals. lime sulphur. Destroys eggs, larvae and fungi in dormant state. Simple, safe, economical.
 Send for free booklet, "Scalecide, the Tree Saver." Write today. to Dept. D
B. G. PRATT CO.
 50 Church St., New York City



for making jelly, pies or many other things which the good housewife will think of. If desired, the uncooked loganberry jam can be used for making pie filling, and will make at least three good, big pies, while the juice which you have saved should make ten or twelve ounces of delicious jelly.

We should like to prove to any of the readers of this journal that there is reason in our contention and we will, if desired, mail to any postoffice in the United States a sample one-pound package of new process evaporated loganberries for thirty-five cents, together with a booklet of recipes. We should like to have Oregon growers of loganberries and producers of other fruits make their own test and comparison of flavor and cost with the loganberry preserves, jams, jellies, etc., which they have already prepared during the season from the fresh fruit.

The Rosy-Apple Aphid

Measured by its immediate effects, the rosy-apple aphid is the most dangerous of the plant lice. The unchecked presence of this species in the spring of the year results in a worthless crop of stunted and gnarled fruit at harvest time. The species is increasingly prevalent in the irrigated orchards of the Northwest, and already many millions of boxes of fruit have been destroyed through its working. Fortunate it is that control of the species is easy if undertaken in time.

Unlike the common but less dangerous green aphid of the apple, rosy-apple aphid neglects the new growth to work in and about the blossom clusters. The over-wintering eggs hatch just as the buds are opening, about March first, producing powdery, bluish-green lice. These aphids work down into the developing leaves, poisoning them and the future fruit, and later give birth to lice which finally become pinkish in color. In June blackish winged individuals appear to fly from the apple trees, which then are free of aphids until the return migration in the fall. In the meantime the poisoned apples grow but little, but ripen early as dwarfed, irregular, tasteless caricatures of fruit, hanging onto the branches to testify to the destructiveness of the insect.

The customary sulphur-lime spraying as given in March fails to destroy both the eggs and the hatched young of this aphid. To become effective against plant lice this spray should contain tobacco, as in the form of black-leaf "40," one part to nine hundred. Recent experience in California warrants the recommendation of fall spraying with weak oil emulsions as the most dependable treatment. The winter eggs are not laid for several weeks after the fall migrants return to the apple trees, and in the meantime the insects are susceptible to a weak spray and are easily reached. For such spraying a four-per-cent emulsion of crude oil, or a one-to-one-thousand

How much to build?
 Now's the time to buy lumber. H-L-F prices on lumber, direct to you, lower than ever, now. No time like winter for easy handling. Roads good—time plentiful. Get our price now on house or barn lumber.
Send bill of materials for low winter price. We pay the freight. Guarantee grades, count, satisfaction. If you haven't material list, send for H-L-F House-Feiter-it's free. Answer a few questions. Get our guaranteed prices. Write today.
Hewitt-Lea-Funk Co.
 510 Crory Bldg. Seattle, Wash.
 Capital \$1000,000 Not in any Trust or Combine



C LARGE MANDY **AXLE**
S SMALL **GREASE**
BUCKET **CAN**
WHITTIER COBURN CO. S.F. SOLE MFRS.



PAINT WITHOUT OIL


Remarkable Discovery That Cuts Down the Cost of Paint Seventy-Five Per Cent.

A Free Trial Package is Mailed to Everyone Who Writes.

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powderpaint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather-proof, fireproof and as durable as oil paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manufacturer, 255 North Street, Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write today.

BUY AND TRY
White River Flour
MAKES
Whiter, Lighter Bread



Established 1893

W.P. KRANER & CO.

Importers and Tailors
2nd Floor Couch Bldg.
109 Fourth Street
Portland, Ore.

GEO. E. KRAMER C. W. STOSE

H. HARRIS & CO.

Fruit Auctioneers
131 State Street
Boston, Massachusetts

Established 1847

Frank Moseley
Frank L. Ripley
Cutler B. Downer

HOOD RIVER APPLE VINEGAR CO.

HOOD RIVER

YELLOW NEWTON VINEGAR
AND SWEET CIDER
EVAPORATED APPLES

Made from Choice Hood River Apples

If your jobber cannot supply you
send your order to

Hood River Apple Vinegar Co.
HOOD RIVER, OREGON

Portland Wholesale Nursery Company

Rooms 301-302 Stock Exchange Building
Corner Third and Yamhill Streets
PORTLAND, OREGON

YOU CAN EARN \$50.00 PER DAY with the
Gearless Improved Standard
Well Drilling Machine.
Drills through any formation.
Five years ahead of any other.
Has record of drilling 130 feet
soil driving casing in 9 hours.
Another record where 70 feet was drilled on 2 1/2 gal. distillate
at 9¢ per gal. One man can operate. Electrically equipped for
running night. Fishing job. Engine ignition. Catalogue W's.
REIERSON MACHINERY CO., Mantra., Portland, Ore.



W. van Diem

Langhe Franken Straat 45, 47, 49, 51, 61
ROTTERDAM, HOLLAND

European Receivers of American Fruits

Eldest and First-Class
House in this Branch

Cable Address: W. Vandiem
A B C Code used; 5th Edition

Our Specialties are
Apples, Pears, Navel Oranges

black-leaf "40" spray would answer. In the latter case four pounds of soap should be added to every hundred gallons of the spray.—A. L. Melander, Entomologist.

Dishonest Grading Criticised

The application of a little ordinary common sense in the drafting of grade and pack rules and a little common honor and ordinary decency on the part of the growers in observing them was urged at the Fruitgrowers' Congress, in connection with the National Apple Show at Spokane, by F. E. Sickels of North Yakima, manager of the Yakima Valley Fruitgrowers' Association. Mr. Sickels scathingly arraigned what he branded as the "unholy alliance" between certain types of shippers and growers in an address on "Grading and Packing." "Our organization never turned down a lot of apples, no matter how scabby, wormy and off grade, that some person was not found by the grower to ship them out as extra fancy fruit," declared Mr. Sickels. "There is always some buyer for the junk. The grower who packs the off-grade stuff is advertising one thing and selling another. With some it seems to be a case of how poor a grade can get by the inspector as extra fancy. That grower is not building up an industry; he is tearing it down. He is not creating new markets; he is destroying the ones already existing. Many shippers figure that there is a 'sucker' born every minute, and they are after the 'suckers.' When these are gone they will go out of business. The growers connive at the fraud being perpetrated by furnishing bait for the fishing. Growers fail to realize that if 10 per cent of the fruit in a car is off grade the whole ear will be dragged down in price twenty cents a box."

Mr. Sickels urged growers to keep up size, color and grade and pack, strictly in keeping with the most rigid grade and pack rules, and he concluded with the following slogan suggestion: "If you see one apple you see the box. If you see one box you see the ear."—Exchange.

Retail Prices of Apples Compared With Other Commodities.—Retail profits on clothing vary all the way from 25 to 50 per cent; profits of the retail grocer average 20 per cent; profits on tobacco vary on different brands and different qualities probably from 25 to 50 per cent. It may be generally stated that retail profits as a rule vary from 25 to 50 per cent. The retail fruit dealer makes all the way from 100 per cent up. In fact, many instances are known where apples have retailed frequently at from 300 to 500 per cent profit. This fall the editor was advised that in Connecticut, in a small town where apples are quite plentiful, they were being retailed in small sizes at 30 cents per dozen, which would be about \$3.50 per box. In all probability the retailer, for the size and variety and grade, did not pay a price to ex-ceed \$1.50.

OUR SPLENDID CLUBBING OFFER

"Better Fruit" offers to its readers one of the finest lists of clubbing offers ever placed before the public. These rates do not apply to Canada, owing to extra postage.

Review of Reviews	\$3.00
Everybody's	1.50
Better Fruit	1.00
Total	\$5.50
All for	3.60
World's Work	\$3.00
Scribner's	3.00
Better Fruit	1.00
Total	\$7.00
All for	5.25
Outlook	\$3.00
Ladies' Home Journal	1.50
Better Fruit	1.00
Total	\$5.50
All for	4.90
Woman's Home Companion	\$1.50
World's Work	3.00
Better Fruit	1.00
Total	\$5.50
All for	3.95
Fruit and Produce Distributor	\$2.00
Better Fruit	1.00
Total	\$3.00
Both for	2.00
Delineator	\$1.50
Everybody's	1.50
Better Fruit	1.00
Total	\$4.00
All for	3.10
Harper's Magazine	\$4.00
Good Housekeeping	1.50
Better Fruit	1.00
Total	\$6.50
All for	5.45
Cleanings in Bee Culture	\$1.00
Good Housekeeping	1.50
Better Fruit	1.00
Total	\$3.50
All for	2.65
Ladies' World	\$1.00
Modern Priscilla	1.00
Pictorial Review	1.00
Better Fruit	1.00
Total	\$4.00
All for	2.50
Today's	\$0.50
Ladies' World	1.00
McCall's	1.00
Better Fruit	1.50
Total	\$3.00
All for	2.00
Pacific Homestead	\$1.00
American	1.50
Better Fruit	1.00
Total	\$3.50
All for	2.50
Northwest Poultry Journal	\$0.50
Good Housekeeping	1.50
Everybody's	1.00
Better Fruit	1.00
Total	\$4.50
All for	3.60
Oregon Agriculturist	\$1.00
Northwest Poultry Journal	.50
Better Fruit	1.00
Total	\$2.50
All for	1.85
Hoard's Dairyman	\$2.00
Woman's Home Companion	1.50
Better Fruit	1.00
Total	\$4.50
All for	3.15
Western Farmer	\$1.00
Northwest Poultry Journal	.50
American Bee Journal	1.00
Better Fruit	1.00
Total	\$3.50
All for	2.35

Through lack of space we are unable to give a more extended clubbing list. Rates on all magazines will be given to any of our subscribers by writing "Better Fruit."

all year round



Open the throttle—crank up, and under the hood of The Yuba Ball Tread Tractor the motor responds. The tractor becomes alive. Ready to do the driver's bidding is the power of 12 or of 18 horses—real live animals, with head down and shoulder straining against the collar.

**THE YUBA
BALL TREAD TRACTOR**

Every day in the year The Yuba Ball Tread Tractor is ready for work. Spring, summer, fall or winter it will haul or supply power to pump water, cut wood, chop feed, mix concrete or thresh wheat.

The low pressure per square inch on the tread bearing area makes it particularly valuable in winter. Water below the carburetor intake does no harm. Soft mud that horses mire in presents no difficulties. The Yuba Ball Tread Tractor stays on the surface and pulls with the power of all its horses. *There is a booklet telling more about it.*

THE YUBA CONSTRUCTION CO.

433 California Street, San Francisco
Dept. G-11 Works, Marysville

Commercial Walnut Growing in the United States

By Ferd Groner, Hillsboro, Oregon

THE growing of walnuts for commercial purposes is gradually receiving more attention each year as the different localities prove their adaptability for their production on a paying basis. Not much has been done in the East, but a few varieties have been planted in a limited way in certain localities; one near Lake Ontario in Western New York, and another near Lancaster, Pennsylvania, and a few scattered over Maryland, Virginia and some of the Southeastern States, but the greatest increase is in Middle and Northern California, Western Oregon and Washington between the Cascades and Coast ranges, and a few in Eastern Washington, Oregon, Idaho and Utah.

In my opinion the most favorable localities for raising high-grade walnuts are in Western California, north of the Tahachapi Mountains, in Western Oregon and Southwestern Washington. The districts in Southern California from which most of our walnuts are received are scarcely holding their own, and I think the area is gradually decreasing. Nearly all of the trees are

seedlings, and owing to the uniformity of production and quality, and the damage suffered by blight or excessive hot weather that sometimes almost destroy the crop, has made them less profitable than citrus fruit. During the last few years the high price of land and added cost of irrigation makes this district less attractive to the investor who estimates returns on his capital. It is a well-established fact that any locality where the temperature rises above 100 degrees in the shade for any considerable length of time that it is impossible to grow a first-class walnut.

While walnuts will not stand the rigor of some of the Eastern States, they will stand the cold when dormant better than excessive heat in summer; for this reason we find only a limited area of the United States suitable for profitable walnut growing. The Coast counties within 100 miles of San Francisco, and especially Santa Clara Valley, seems to be the most favorable locality in California for growing high-grade walnuts; and quite a number of new orchards are being

planted in this district and a very high-grade of walnut is being put on the market from this locality, which will gain favor as they become better known. Though land values are lower here than in Southern California, they are considerably higher than in Western Oregon and Washington, that produce equally as good nuts.

The public is beginning to realize the difference in the quality of nuts, and last season they sold at from 10 to 30 cents per pound. The investor or planter should take this into consideration, as it is of as much importance as the number of pounds an orchard will produce. Walnuts thrive best on well-drained clay or loam soil. Heavy clay seems to be best adapted if not too dense or underlaid with hardpan. The black loams are good if not too light or sandy, and if drained four or more feet deep. Rolling or foothill land, up a little from the level valley, is most favorable, as such locations are less liable to frosts in spring and fall. High hills or bleak places should be avoided, as walnuts like a reasonable warmth in summer.

The question of how far apart to plant has been much argued, and plantings are usually set from 30 to 60 feet, with 40 and 50 feet most favored. I favor 40 feet apart after several years of careful study, as the wider plantings bring too little income while the orchard is young. As planting 30 feet apart gives four times as many trees as 60 feet, the close planting might be fairly profitable, while the wide planting was yet an expense. The heaviest bearing orchard I know of in the United States is seventeen years old and set only 30 feet apart. And I doubt the advisability of planting over 40 feet. I do not advise fillers of any kind, or of planting seedling trees, though grafted trees cost several times as much, as I estimate the grafted ones of the same varieties will bring twice as much income. I would advise planting the grafted trees in the field, and not plant nuts as some advocate, and graft the trees without moving them. I have had experience in grafting over 100 acres in the field form during the last four years, doing all the work myself; some of them I grafted three and four times, and then dug the stumps and planted grafted trees in their places after losing five years of growth on one-sixth of the trees. It is easy to estimate that this loss was several times the cost of grafted trees; besides it cost me considerable more to graft them in the field. I don't believe the field-

FOR SALE

Diversified fruit farm near Hood River, Oregon. 100 acres in fruit, 60 acres grain and pasture. Everything in first-class running order. Would consider services of an experienced manager, who can take a moneyed interest in the property, to whom exclusive charge will be given, with long time option to purchase balance. An exceptional opportunity to get possession of a very fine and profitable farm on most favorable terms. Address J. R. MORRIS, 122 W. Madison St., Chicago, Illinois.

grafted tree is any better than the transplanted tree, as I can point to at least two instances where trees have been moved twice that are better trees than those that were not moved at all near them. This old-time hobby that the cutting of the tap root of a walnut tree is vital to the growth and bearing quality is absolutely without foundation and cannot be proven. The only way to do field grafting is to wait until the trees are from five to seven years old and then top-work them, but this increases the expense greatly and sets back the age they will begin to bear.

A word about top-working will not be out of place here. We have top-worked trees from four inches in diameter to thirty-six inches in diameter and find no trouble in getting from 85 to 95 per cent of the grafts to grow (while nursery averages only about 20 per cent) by using the Payne system, setting the scions in a split through the heart, after cutting them off at diameters of from 2 to 4 inches, 2½ to 3¾ preferred, as the larger ones take too long to heal over, and we cannot get as good a per cent to grow in the smaller ones. Most any of the blacks or seedlings, besides the butternuts, can be successfully grafted to our commercial walnuts. There is a large field for this work, as there are thousands of black and worthless seedlings scattered over Western Washington, Oregon and California that would bear good incomes if grafted to varieties adapted to their localities. Trees top-worked five years ago last fall bore 50 to 125 pounds of fine nuts. I do not consider the system used by Mr. Nell of Anaheim, California, a success, as the branches are cut off at from 4 to 6 inches in diameter and splits made at an angle, setting several scions around the stub; fair success has been had in getting the scions to grow, but the wound is too large to heal over and decay causes the grafts, after several years' growth, to break or split off. I took note of this in Mr. Nell's own orchard.

To describe the different varieties of walnuts grown on the Pacific Coast would take almost a volume itself to do it justice, but will say that most of the varieties grown in Southern California are not adapted to Middle and Northern California, and most of the varieties in Middle California are not adapted to Oregon and Washington. Something that I cannot understand is that the Meylan walnut, that ripens and grows successfully here in Oregon, will not ripen in Southern California; and the Franquette is a practical failure from the same cause, while it is the leading nut in the Northwest and Central California. Santa Barbara soft shell seems to be the leading variety in Southern California. The Eureka is gaining favor with many. The Franquette is by far the favorite in Central California. While the Eureka has its advocates, some of the leading authorities advise caution in planting it, as it has not been fully tried out yet. The Franquette is also the leading variety in the

Walnuts Are Dollars

They are now selling for the highest price ever known and have tripled in value in sixteen years. We sold our first crop of 1200 pounds of grafted Yrooman Franquettes, from our 10-acre 6-year-old orchard, for an average of 25 cents per pound. This grade was 98% of the crop, and we sold the 2% of culls for 15 cents. Do you know that these nuts sold for more apiece than average apples and weighed only one-fiftieth as much? We have trees for sale grown from scions cut from this orchard that have first-class roots as well as tops. Do you know that we have a 17-year-old walnut orchard here in the Northwest that netted \$500.00 an acre last year? Write for prices or booklet on walnut culture.

FERD GRONER & McCLURE, Hillsboro, Oregon

You want *the best* in Irrigation Flumes, Drainage and Pressure Pipe. We manufacture the *best only* from "ARMCO" AMERICAN INGOT IRON.

COAST CULVERT & FLUME CO.
Kenton Station, Portland, Oregon

The Wastefulness of "Price" Buying

To save money in purchasing is a duty everyone owes to his business. "Price" buying, however, does not always mean economy.

A few dollars "saved" in buying a typewriter may turn out to be many dollars wasted and make an expense of what should have been an investment.

The higher price paid for the

L. C. Smith & Bros. Typewriter

is paid for the greater amount of superior work it will turn out and its greater durability.

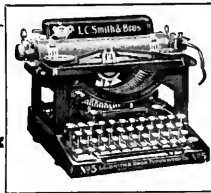
You will be surprised to learn what a great difference there is in typewriters. The cheapest is usually the most expensive.

Send for Free Book or Ask for a Demonstration

L. C. Smith & Bros. Typewriter Company

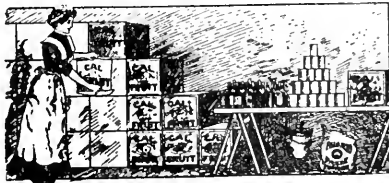
Home Office and Factory, SYRACUSE, N. Y.
Branches in All Principal Cities

PORTLAND
BRANCH
OFFICE



306 OAK STREET
PORTLAND
OREGON

Paste for Labeling—"Palo Alto" Paste Powder



added to cold water, instantly makes a beautiful, smooth, white paste. Ready for immediate use at a cost of 10 cents a gallon. No labor. No muss. No spoiled paste.

PASTE SPECIALISTS
Robinson Chemical Works
349-351 Eighth Street
San Francisco, California

Please Send for YOUR Copy of
**OUR 208-PAGE
CATALOG**

of the world famous flower and
vegetable seeds grown and
tested by Carter's, of Lon-
don, England, and sold by

**Barter's
Tested
Seeds
Inc.**

100 years of reliability has
made the reputation of our
house. **QUALITY PAYS
WE HAVE IT.**

Send for Catalog B.
**3003 Arcade Building
Seattle**

DEAN D. BALLARD, MANAGER

Are you going to place
an order for nursery
stock for next spring or
fall delivery? In the
growing of our stock we
consider

**"Quality
First"**

Oregon trees are superior to any
others and we have grown them for
29 years. A postal card brings you
an illustrated catalogue.

You may be interested in our agency
proposition. Write us for details.
There is money in it.

Albany Nurseries

ALBANY, OREGON

**Orchardist
Supply House**

Franz Hardware Co.

Hood River, Oregon

Northwest. This variety has been
bearing here for the last five years on
a number of large top-worked trees
without a failure, and the quality can-
not be excelled. I have eight other
varieties, but if I were to plant more
walnuts I would plant 95 per cent
Franquettes. The Meylan and Glad
are good bearers, but I will not recom-
mend them; I am not satisfied with the
Mayette, as it has been a shy bearer
with us and it not as good a nut as the
Franquette, though I found a seedling
near Vancouver, Washington, that bore
heavy crops of nuts of large size and
fine appearance, but the quality was
not equal to the Franquette.

The question of bringing the young
orchard into bearing at the least possi-
ble expense is worth considering. By
cultivating clean along the rows from
one-third to one-half of the ground, the
rest can be used for crops such as peas,
vetches, pumpkins, corn, kale or tur-
nips, and possibly a crop or two of
potatoes might be raised, but they rob
the soil of potash which would bring
more money in nuts at a later date. By
handing this crop to an advantage
with general farming, more than the
expense of cultivation can be secured.
The cropping should cease at six or
seven years, as it will not pay to give
the orchard poor cultivation or crowd
the trees with other crops, as I estimate
that an orchard of first-class grafted
trees of the right variety, properly
care for, will increase in value at the
rate of \$50.00 per acre per year for the
first ten years. I find very few walnut
orchards kept in perfect condition, and
it is an easy matter to lose a year's
growth by poor cultivation.

The question of how much income a
walnut orchard will bring is the most
important one, and it is to this I have
given the most study. In Southern
California we find the highest produc-
tion per acre, about one ton, with an
average of less than one-half ton.
The Vrooman Franquette orchard near
Santa Rosa, from 12 to 16 years old,
averaged about 800 pounds, set 50 feet
apart; had this orchard been set 10 feet
apart its yield would have been in-
creased 50 per cent at the above ages.
E. S. Leebe & Sons have a large
orchard near San Jose that has been
well cared for, now coming into bear-
ing. They are mostly Vrooman Fran-
quette. George C. Payne, who has done
valuable work in developing the wal-
nut industry of Central California, is
also located near San Jose. He has the
largest and best bearing tree I have yet
found, producing as high as 714 pounds
of nuts; six of such trees would practi-
cally cover an acre. This tree is 38 or
39 years old. There are no grafted
orchards in this locality old enough to
prove just what can be produced, but I
consider this district quite promising.

In the Northwest we have a few
seedling groves that are making a good
showing; one of these 55 trees, aver-
aging 17 years old, set 30 feet apart, on
1½ acres, last year produced 3,700
pounds of nuts that sold for an average
of 19½ cents per pound, bringing

GOOD SEEDS
BEST IN THE WORLD
Prices Below All Others
I will give a lot of new
sorts free with every order I
fill. Buy and test. Return if
not O. K.—money refunded.
Big Catalog FREE
Over 700 illustrations of vege-
tables and flowers. Send yours
and your neighbors' addresses.
R. H. SHUMWAY, Rockford, Illinois

**GREAT CROPS OF
STRAWBERRIES**

And How to Grow Them

IS the most beautifully illustrated and most com-
plete strawberry book ever written. It teaches
the Kellogg Way of doing things and tells the
whole strawberry story from start to finish. It ex-
plains how the famous Kellogg Pedigree plants are
grown on the great Kellogg plant farms in Idaho,
Oregon and Michigan, and pictures and describes all
the best varieties, including the ever-bearing kind.

OUR FAMILY STRAWBERRY GARDEN

Whether you have a small garden or a big farm,
you should grow your own strawberries. Kellogg's
Big Red Strawberry garden will produce all the de-
licious strawberries your entire family can eat, sum-
mer and winter. You can have shortenke, strawberries
and cream, preserves, jam and canned berries
the year round for less than one cent per gallon.
Our book gives full information.

STRAWBERRIES

Yield more dollars per
acre and give quicker re-
turns than any other
crop. Get our 64-page
book and learn THE KEL-
LOGG WAY and make
\$500 to \$1200 per
acre. The Book is FREE.

R. M. KELLOGG CO. FREE BOOK
Box 355, Three Rivers, Mich.



True-to-Name Nursery

GALLIAN BROS.
Proprietors

Hood River-Dufur, Oregon

Wholesale and Retail General Line of
Nursery Stock. Seventeen years in the
business. For catalogue and prices
write

True-to-Name Nursery

Hood River, Oregon

**Orengo Prune Trees
Cheap**

Myrtle Creek, Oregon, November 26, 1914
I feel like saying a few words to you on paper in
pardon to my Italian Prune trees. I am more than
pleased with them. Really they are better than I
expected. I cannot speak too much in praise of
your company for such good trees. They are of good
size, good health and good root. Everyone that I
talked with that ordered from you is well pleased.
(Signed) J. A. Copeland.

"ORENGO TREES" are universally
known for their high standard of quality,
and particular planters prefer to buy
where they can depend upon quality,
reliability and satisfaction. When you
want really good trees at right prices,
you can't do better than with us. Try it.

Oregon Nursery Company

ORENGO, OREGON

SUCCESSFUL salesmen wanted

8729. This is the highest producing orchard I have found, and also the highest price received for seedling nuts, showing that the Northwest can raise quantity and quality. This orchard was brought up to this high production by digging out any tree that did not come up to the owner's ideal and replacing it with another; in some places three and even four trees have been planted to get a suitable one. This lack of uniformity is found in all seedling orchards. Several hundred acres of Vrooman Franquette have been planted in Western Oregon and a few in Southwestern Washington during the last six years. The earlier plantings are beginning to bear large nuts of high quality that command the very highest price paid for walnuts anywhere. I would estimate that a grafted Franquette orchard here in the Northwest, set 40 feet apart and receiving good care, should produce from 20 to 30 pounds per tree at 10 to 12 years old, at an expense of about \$40.00 per acre per year, and this should be doubled at 12 to 16 years at an expense of from \$50.00 to \$60.00. While I consider these figures conservative, I do not want to go on record as making a higher estimate. The principal inducement to raise walnuts is the low cost of care of orchard after it is once established at four or five years old, low cost of harvesting and drying compared with other fruits and low cost of transportation compared with returns.

Maturity for Picking Apples

By J. B. Keil, State Experiment Station
Wooster, Ohio

THERE is a stage in the development of most varieties of apples, when fruit falls from the tree on account of natural maturity. With the so-called summer and fall apples, this means also that the fruit has reached its full color and maximum degree of quality. But the winter varieties require a longer or shorter time in storage before this full maturity is reached.

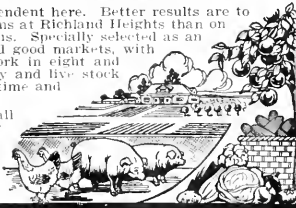
The proper stage of maturity for best results depends somewhat upon the way in which the apples are to be used. It is evident that a mature apple cannot endure handling and shipping as well as one not yet ripe and mellow. For home use, however, the same variety may be allowed to mature before picking, and thereby secure the highest quality possible for the variety. Furthermore, the largest size and best color are also attained by this maturity on the trees. This stage is probably best indicated by the appearance of sound, well-colored apples among the windfalls. The wormy, storm-bruised or otherwise injured apples usually fall prematurely. Examples of this kind appeared in the station orchard this year, after a light fall of hail. Apples having only one mark, in which the skin was broken, ripened and fell off a week or ten days before the main crop was ready to pick. This was especially noticed on Summer Rambo and Wealthy.

Buy one of these 5 and 10 Acre **LITTLE FARMS** IN VALLEY OF VIRGINIA.

You can be happy, prosperous and independent here. Better results are to be had on these 5 and 10-acre Little Farms at Richland Heights than on much larger farms in less favored sections. Specially selected as an ideal location. Near railroad station and good markets, with fast trains to Philadelphia and New York in eight and ten hours. Fine fruit, vegetable, poultry and live stock country—farms \$250.00 and up, on long time and easy payments.

Write now for attractive booklet, "Small Farms for Little Planters," and other interesting literature about the South.

F. H. La Baume, Agricultural Agent
N. & W. Ry.
228 Arcade Bldg., Roanoke, Va.



THE FAMOUS AETNA BRAND OF PURE LIME AND SULPHUR SOLUTION

Manufactured by an Orchardist of 25 Years' Practical Orchard Experience.

Extracts From Letters On File

W. K. Newell, President State Board of Horticulture, says: "I am using the Aetna Brand in my orchard and I am sure you are making a good article."

A. C. Goodrich, Commissioner First District: "I have used the Aetna and found every barrel fully up to test."

The Dalles, Oregon, July 16, 1914: "Results obtained from use of Aetna Brand are most satisfactory and I can heartily recommend its use." (Signed) R. H. Weber, Commissioner Fourth District.

H. C. Atwell, President Oregon State Horticultural Society: "I think there is no better Spray made."

S. J. Galloway, Fruit Inspector Washington County: "After very severe tests I found the 'Aetna' Brand O.K."

White Salmon Valley Fruit Growers' Union: "After using the 'Aetna' Brand we are justified in the belief that there is no superior on the market." (Signed) J. J. Connor, Manager.

"Use the 'Aetna' Brand for best results. Failure is impossible if you spray right. We absolutely guarantee the 'Aetna' Brand to be the best on the market. It costs no more to use the best."

For prices, etc., write

B. LEIS & SONS, The Aetna Orchards, Beaverton, Oregon

The Aetna Brand is not sold through Portland dealers.

PORTLAND, OREGON

PORTLAND HOTEL

The hotel which made Portland, Oregon, famous
Most Desirably Located. In the Center of Shopping and Theatre District
Covers a City Block

Broadway, Sixth, Morrison and Yamhill Streets

EUROPEAN PLAN—\$1.00 per day and upward

Write for Portland Hotel Booklet

G. J. Kaufmann, Manager

WE MAKE A SPECIALTY OF

Catalogs, Booklets and Circulars

FOR

Nurserymen, Fruit Growers, Manufacturers
and Selling Agents

Write us for specifications and
information. Quality and Service

F. W. BALTES AND COMPANY

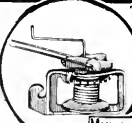


Fine Printing PORTLAND, OREGON

Don't Take Chances
with colds and sickness from exposure **in the rain.**
Know real wet weather comfort. Wear **TOWER'S FISH BRAND REFLEX SLICKER**
Waterproof through and through. Patented Reflex ridges stop every drop from running in where the fronts overlap and button.
\$3.00 Everywhere
Protector Hat, 75 Cts.
A. J. TOWER CO. SATISFACTION GUARANTEED BOSTON
Send for free Catalog



Dow Arsenate of Lead
We want distributors and agents in the Northwest. We are headquarters for the highest quality of **Arsenate of Lead**
being one of the largest manufacturers. Our material has been used for six years successfully throughout the United States. Write us for agent's prices, terms and samples.
The Dow Chemical Company
Midland, Michigan

Here It Is—Look! The Mighty Monarch Steel Stump Puller
The greatest stump puller in the world. Built of steel. Strongest guarantee ever written. Made for dochie and triple power. Has clearing area of 175 feet with 250 feet of cable as compared to 65 feet area of other stump pullers. Has more modern improvements, does more work and more easily than with any other.
MONARCH STEEL STUMP PULLER
The Oldest STEEL STUMP PULLER On Market
Been giving satisfaction for 20 years. They are not an experiment. Our modern can take up, solid coupling anchor cable, from hitch and other feature - not found on any other, make the Mighty Monarch the leader of all. With these modern features, considering the quality of construction, they really cost no more than the ordinary intricate machine. Do not buy with your eyes shut. Get our free catalog first.
Pacific Coast Representative
FARLIN & ORENDORFF
Dept. BF Portland, Oregon

Another way of determining the stage of maturity is by lifting and turning the apple back toward the twig. If the stem parts readily from the twig, without the use of force, the apple is ready to pick. This is also an advantage of no small importance when rapidity of picking is considered, for by the use of a picking receptacle which leaves both hands free, the apples can be gathered in with greatest ease and rapidity. For packing and shipping, the apples, in the advanced stage of maturity above described, cannot be safely handled. Only with very careful work in picking and packing, and then only in small packages, can mature apples be shipped safely.

When picking for shipping or late storage, color may make the more dependable guide. This, of course, requires a certain acquaintance with the varieties, in order to recognize the proper color, and also a knowledge of the behavior of the variety in storage, so that the maximum color may be developed at maturity. It is probably safe to assume that there should be no decided yellowing of the winter apples before picking for shipment. When the under colors turn from green to yellow shades, it indicates the approaching maturity of the apple, with consequent mellowing and danger of bruising when handled. It is at this stage also that the fungi causing decay most readily develop.

Retaining the stems of apples when picking, while not so important as some have considered it to be, is of sufficient importance that pickers should know how to part the apple from the twig at the proper place. With long-stemmed varieties like Ben Davis, Rome, Grimes, etc., this is a matter only of properly grasping the apple when picking. A finger or thumb placed at the juncture of stem and twig, and a turn of the apple, bending the stem at that point should effect the removal without breaking either the stem or twig. With short-stemmed apples like York, Roxbury, White Pippin or Babbitt, this method is almost impossible. With these varieties a combined pull and sidewise twist accomplishes about the most that can be expected. Even then it is very difficult to prevent snapping the twigs. The advantage of thinning to not more than one apple on a twig should not be overlooked in this connection. The number of "drops" while picking is much greater when the apples hang in clusters.

Both hands are required to pick a cluster of three or more, and this is often difficult or impossible when in the tree or on a ladder. Then when one or two are removed from the cluster the others often fall. As with many other similar operations, the resourcefulness and ingenuity of the picker will determine very largely his efficiency in bringing the apples from the tree to the packing table in proper condition, and it is upon this efficiency more than upon any cut-and-dried methods that we must depend for results.

Woodman Spare Your Hands!



Hansen's Gloves
THINK of everything you want in a glove—and then you'll buy this Hansen
Shaped with personal care, they give every man, at work or sport, complete protection with flexibility and a good grip.
help while others hinder. That's why Hansen's afford real protection. There is no extra bulk to interfere with your work. They keep your hands comfortable; free from roughness and injury—and they last.
Like all Hansen's this stout "Protector" will not stiffen after wetting, and cleaning in gasoline leaves it soft and shapely.
Write for Free Book
showing many of the 50 styles for all work, driving, motoring, sports and dress. If your dealer has not Hansen's Gloves you will supply you. Anyway, write for the Book.
O. C. HANSEN MFG. CO.
130 H. Detroit St. Milwaukee, Wis.

20 Reasons Why You Should Investigate the SANDOW Kerosene Stationary ENGINE
It runs on kerosene (not oil), gasoline, distillate and alcohol without change in equipment—starts without cranking—runs in either direction—bristles governor—hopper and tank—oil—speed controlled while running—no cams—no valves—no gears—no sprockets—only three moving parts—light weight—easily portable—great power—starts easily at forty degrees below zero—complete ready to run—children operate them—low factory price—hard on enormous output—30 day money-back trial—10 year limited guarantee. Shows 1 1/2 to 16 horsepower—best available for the home which tells how Sandow will be useful to you. See it in action. Trustworthy and millwrights' associations by dealing directly with factory, 1075
Detroit Motor Car Supply Co.
235 Canton Ave., Detroit, Mich.
(602)



YOU CAN MAKE \$20.00 A DAY AND JUST ONE MAN ON THE JOB WITH A KING OF THE WOODS DRAG SAW
Put a roof on the cheapest lot and see the demand!
One man writes he saved 40 cents in 10 hours
Another saved 20 cents in 1 hr.
Another saved 10 cents in 45 min.
Another writes he makes while still asleep!
THIS IS MORE YOU SHOULD KNOW.
Write for Testimonials and Catalog D-1
Reiersen Machinery Co.
Manufacturers, FORELAND, OREGON.



Spraying Beneficial

Continued from page 11

the leaves of the cherry and pear trees, and they feed upon the epidermal tissue, leaving the frame work of the leaves exposed, which soon die and turn brown. One pound of arsenate of lead to fifty gallons of water will kill the slugs but will not hurt the fruit for use.

Codling Moth.—One pound of arsenate of lead to fifty gallons of water will give as good results in fighting codling moth as more lead. The great secret in fighting this pest is in getting the poison into the calyx cup of the embryo apple. If you do not do this your work spells failure. After several years of careful, systematic experimental work, Professor Melander of the Agricultural College at Pullman, Washington, informs us that an average of results shows that in 85 per cent of the wormy apples examined the worms entered at the calyx. This being true, and I believe it is, it is plain to be seen that here is the place to fight. Regardless of theory and from a practical standpoint, it is useless to try to poison these worms by putting the lead upon the outside of the apple, as it has been observed under a strong glass that the worms, in eating in at the side of the apple, spit out the thick, tough skin—do not swallow it. Hence spit out the poison, too. The poison does not get into the worm's digestive canal and it does not die, but keeps right on doing business. If space permitted I would be glad to deal more fully with the actions of the codling moth and other insects which sting and scar the apple, but this is an article on spraying and I will have to confine myself to that subject. Do not think that because you see a sting on the side of an apple where a worm has started to eat it that it is a codling moth larva that has been killed by arsenate of lead put upon the outside of the apple, for it is not. Such stings are the work of some other insect and I question the efficacy of arsenate of lead in combating them.

Arsenate of lead solution as applied to the fruit is not a continuous, cohesive, elastic coating, but instead it lies upon the fruit in detached, minute particles. As the fruit grows the skin expands and these particles are constantly being separated farther and farther apart, so that the insects can bite in between them, and they are wise little rascals, I can assure you, in their choice of things to eat.

It is not a question of how many times it is necessary to spray for codling moth, it is the question of getting the poison into the calyx cups. If you get it there it will stay there until the apple is destroyed, and what is more, it will always be poison. From the time when the petals begin to fall to the time when the calyx closes by the swelling of the apple will vary from six to ten days, according to varieties of apples and climatic conditions. During this interval is the time to spray with lead for codling moth. As most

Lime - Sulphur Solution

(INLAND BRAND)

Oil Spray

(BETTS)

THE C. G. BETTS COMPANY

MANUFACTURERS

Erie Street and N. P. Tracks, Spokane, Washington

Ground Phosphate Rock

The Natural Plant Food and Permanent Soil Builder

1,000 pounds per acre once in each four years will cost about \$1.00 per acre per year. At Pennsylvania State College \$1.00 invested in Rock Phosphate gave increased yields of \$5.85—over 500%. At Maryland Experiment Station \$1.96½ gave \$22.11—over 1,000%. At Ohio Station each dollar paid for itself and gave \$5.65 profit. At Illinois Station \$2.50 gave the same return as \$250 invested in land.

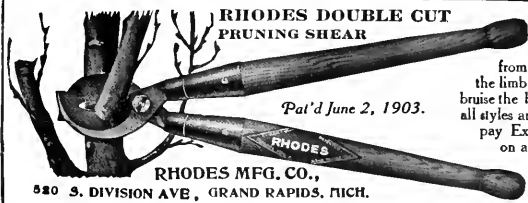
Each ton contains 280 pounds of phosphorus, not rendered available artificially by high priced destructive acids, but so finely ground as to become available in nature's own way.

United States Phosphate Co.

228 West Broadway, SALT LAKE CITY, UTAH

Write for Literature

"Perfection of Fineness in Grinding," our motto



RHODES DOUBLE CUT PRUNING SHEAR

Pat'd June 2, 1903.

RHODES MFG. CO.,
580 S. DIVISION AVE., GRAND RAPIDS, MICH.

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

D. Crossley & Sons

ESTABLISHED 1878

Apples for New York and Export

CALIFORNIA, OREGON, WASHINGTON, IDAHO AND FLORIDA FRUITS

Apples handled in all European markets at private sale. Cheeks mailed from our New York office same day apples are sold on the other side. We are not agents; **WE ARE SELLERS.** We make a specialty of handling **APPLES, PEARS AND PRUNES** on the New York and foreign markets. Correspondence solicited.

200 to 204 Franklin Street, New York

NEW YORK

LIVERPOOL

LONDON

GLASGOW



Orchard Brand Insecticides and Fungicides are the **BEST** that can be obtained. They are **RELIABLE, SAFE** to use and give **EFFICIENT** results.

Distributing warehouses in principal sections of Northwest for—
ARSENATE OF LEAD, Paste and Powder;
ATOMIC SULPHUR; BORDEAUX MIXTURE; LIME-SULPHUR SOLUTION;
OIL SPRAYS and SOAP

Bulletins Nos. 3 and 5 are valuable for all fruit growers and will be sent free on application.

General Chemical Company of California
 Royal Insurance Building SAN FRANCISCO

MILTON NURSERY CO.

A. MILLER & SONS, Inc.—MILTON, OREGON

Pear, Cherry, Apple, Prune, Peach. Full line Shade & Ornamental Stock

Quality in Nursery Stock is a condition, not a theory. It is something we put into our trees, not say about them. "Thirty-five years' experience enables us to do this.

SALESMEN WANTED

A Catalog and Special Prices on Request

HOOD RIVER VALLEY NURSERY COMPANY

Phone 5634

Route No. 3, Box 227

HOOD RIVER, OREGON

Plantation four miles southwest of station, Belmont Road.

We will be pleased to show you trees, apple trees that have a heritage, a quality that should be considered by everyone who plants a tree. Our trees are grown in clean hillside virgin red soil with clay subsoil, producing the most vigorous root system. Our buds are selected from the best bearing healthy Hood River trees that make the Hood River apple famous throughout the world. Our trees will give you satisfactory results in vigor, fruit and quality. Ask for catalog. We guarantee our products. Apples, pears, peaches, apricots, almonds and walnuts. A complete line of the best varieties of all kinds of fruits.

H. S. BUTTERFIELD, President

W. J. ENSCHEDE, Manager

Arcadia Irrigated Orchards

THE LARGEST AND MOST SUCCESSFUL ORCHARD PROJECT
IN THE ENTIRE WEST

7,000 acres planted to winter apples. Gravity irrigation. Located 22 miles north of Spokane, Washington, directly on the railroad. We plant and give four years' care to every orchard tract sold. \$125, first payment, secures 5 acres; \$250, first payment, secures 10 acres; balance monthly.

SEND FOR BOOKLET

Arcadia Orchards Company

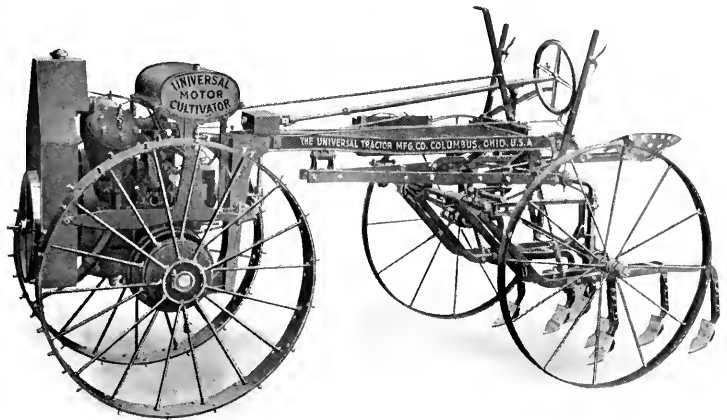
Deer Park, Washington

of the blossoms at this time point up and out, it is necessary to spray down or straight into the calyx cup in order to get the poison in there, and it must be sent with force. To shoot the spray at the side of the blossom may wet the stamens, but that is not getting the poison into the lower cup of the calyx. If your trees are large, by all means use a tower on your outfit so that the operator with the spray rod is high enough to shoot down and straight into the blossom. One spraying is enough if you fill every calyx cup on the tree. If you don't, spray again—a dozen times if necessary to accomplish the desired result, but, remember, you will have to do it before the calyx closes. It costs money to do work over, and if this spraying is done thoroughly and right once is enough. Thoroughness is a keynote in spraying. Time spent, material used, money expended do not necessarily mean anything except expense, for it is results alone that count.

Do not try to use an outfit that will give you less than 175 pounds pressure. It would be better still to use 250 pounds. To get the best results, use a Bordeaux nozzle and not too fine a spray. Have body enough to it so that it will drive, and this holds good in all spraying work. There is only one profitable way of doing anything, and that is the right way. Therefore do your spraying in the right way and at the right time, and then you may look for good results. I make no claim for anything new herein—it is the same old story retold for the good of the cause. The apple business looks brighter today than ever before for the man who raises first-class apples. There is always a good market for apples of the best quality, and you can't raise the best quality without thorough spraying, therefore "Let us spray."

Currant and Gooseberry Maggots

Currants and gooseberries become wormy by the maggot of a small fly. The fly pierces through the skin of the young fruit and injects an egg. When the currants are fully ripe the maggots drop out and enter the ground, where they pass the winter. From the nature of the attack it is impossible to cope with this pest by any spray. The only vulnerable period in the life history of the currant maggot is when the insect has entered the ground. A light cultivation of the soil during the late fall will tend to mash some of the worms in the ground and will be a help in protecting next year's crop. However, since these plants have very shallow roots, care must be taken not to injure the root system of the bushes. Chickens do considerable good if allowed to scratch out the maggots at the base of the plants. It might be well to pick the entire crop early before any of the maggots escape. The fruit could be used for jellies and the presence of the worms does not impair the quality of the preserves. As it is, a good many worms in currants are unconsciously used by every housewife.—Washington State Experiment Station Bulletin.



\$385

f. o. b.
Columbus
Ohio

Light Powerful

Equipped with Extra Set of Wide Tires
for Work in Soft Meadows
or Muck Land



Disking
in Young
Orchard



The
Universal
with Weeder



Pulling
Two-Section
Harrow



Grinding
Corn

THE ideal tool for orchard cultivation. With one of these tools the boys can keep the ground stirred in the orchards, preserving the moisture in the ground for the tree roots and increasing the yield enough to pay for the machine in a short time.

The Only Motor Cultivator

The Universal is developed from the light, modern automobile rather than the heavy, crushing traction engine.

It is ready to do any kind of light field work and makes an ideal power plant for stationary jobs.

It does not matter what kind of a farmer you are, nor whether your chief crop is corn, tobacco, cotton, fruit or small truck, cultivation is your problem. The big tractor with its crushing weight and its high cost of operation will not answer your problem. You plow the land once or twice a year, but if you want crop insurance you cultivate almost constantly.

Only the toughest heat tested drop forgings of alloy steel are used. All crank and cam shaft bearings made of special bronze. All working parts enclosed in oil-tight housings.

The "X" type, two-cylinder, water-cooled motor has 3½-inch bore and 5-inch stroke, automatic plunger pump lubrication, thermosiphon radiator, Holley carburetor, Aviator Kent igni-

It Cultivates corn, cotton, sorghum, sugar cane, toleria, tobacco, tomatoes, garden truck, orchards, vineyards, etc.

It Pulls mower, rake, spiketooth harrow, drag, rollers, small disk harrow, cultivators of various kinds, weeders, etc.

It Plants corn, cotton, sorghum, alfalfa, potatoes, garden truck, clover, etc.

It Operates pump, wood saw, sheller, washing machine, churn, electric light plant, or any other light appliance of the modern farm.

tion, automatic governor controlled from the seat while machine is in motion, worm drive running in oil bath, expanding ring clutch, one speed forward and reverse, gear ratio 25 to 1, weight 1,000 pounds, speed 1 to 4 miles per hour, motor developing 10 horse-power on break test, pulling force-torque equal to team of medium size horses.

Prepare for Cultivating Season by
Investigating at Once

The Universal Tractor Mfg. Co.
2036 South High St., Columbus, Ohio



Work
at Night
When Necessary

SEND FOR THE BOOK

DON'T miss this opportunity to get posted on the latest and best farm equipment. Remember that the Universal can work faster than a team and work constantly.

Now is the time to get posted. The demand for these machines is so universal that they will sell rapidly. Already orders are pouring in from all over America.

If you are a farmer, you want the book giving details of construction and showing the machine at work in the fields.

If you are an orchardist, you want to know about this opportunity for a better and more economic orchard cultivation.

THE UNIVERSAL TRACTOR MFG. CO.
2036 South High Street
Columbus, Ohio

Hard times cannot be cried down by shouting, but they can be beaten down and driven off by everyone lending a helping hand and showing the way over from the dark side to the bright side.

Remember that every dollar this country had a year ago or five years ago it has today. We have not been drained of our resources. Our factories have not been burned down, our young men have not been killed in tens of thousands, we have not lost thousands of millions in trade, but on the contrary shall gain trade. All we need is to attend to our business, produce, sell, buy of each other, stop pessimistic talk and we shall have all the prosperity we want and possibly more than we deserve.

Herewith Proclaim Their Unshaken Faith in the American Apple

The 1914 crop of apples is being harvested under conditions that have no parallel in the past. There has probably never been a larger crop, our export outlets have been blocked, money is at unheard-of premiums, if obtainable at all, the growers and the trade are all at sea.

Nevertheless STEINHARDT & KELLY are placing contracts for choice blocks of Western box apples from the famous growing districts. They have contracted for approximately

already and are steadily buying more for storage.

Apples will be paying property this year as in the past. Nothing but lack of confidence makes the 1914 situation different from that in other years.

STEINHARDT & KELLY have been handicapped by as much uncertainty as anybody else, but now, after a careful study of conditions and prospects they are carrying out a conservative but confident policy and take this method of publishing their confidence for the encouragement of the apple trade and apple industry.

The crop now being harvested represents eight to ten months of anxious work by the producers of fine apples. Without distribution growers cannot continue to produce. It is now the duty of the trade to back the growers loyally. Old antagonisms must be dropped on all sides, old fallacies about the "superfluous middleman" must also be forgotten and the foundations laid for a bigger and a more glorious future.

Whether we handle box, barrel or bulk apples it is our duty as distributors to back up our fellow Americans who produce this fruit in which we all have vital and permanent interests. Let us talk less of difficulties and more of the possibilities. The Export outlook may be dark now, yet without exports of any sort we could still consume the whole crop at home at a profit to all concerned. Where there is a will there is a way!

STEINHARDT & KELLY cannot buy all the apples in the United States, but they can buy quantities in keeping with their supplies of past years, and are doing so, and they can and are placing contracts judiciously to sustain and compensate those growers in all the famous districts who have worked hardest to establish and maintain the highest standards in quality, goods and pack.

Let us all work together towards a constructive end! The 1914 apple deal may be no different from that of other years; it merely looks a little different now.

Buy apples! Buy good apples! Handle them skilfully, work to stimulate consumption, let them go at prices that will encourage use and give everybody a sure but moderate profit. If you do this the 1914 apple deal will eventually be a paying proposition for everybody concerned, grower, trade and public.

BETTER FRUIT

VOLUME IX

FEBRUARY, 1915

NUMBER 8

“BUY NOW” The wheels of business are ready to go around. All they need is just a little impetus. What you need and will have to have, buy now. You will probably save money, as prices are advancing; but better than this, you will help start business and manufacturers, which will result in giving thousands of people work who are now idle and need employment.



SCENE ALONG THE COLUMBIA RIVER BETWEEN PORTLAND AND HOOD RIVER

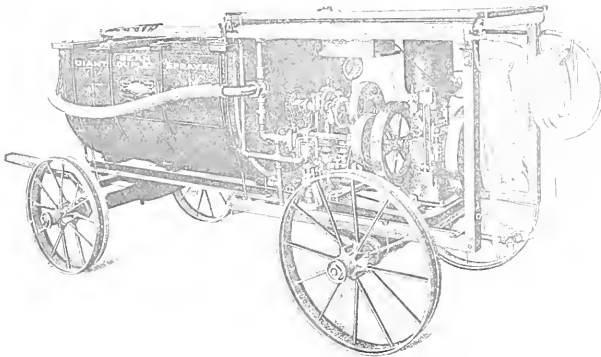
The Northwest is celebrated for its wonderful scenery. Every visitor to the Panama-Pacific International Exposition should arrange his route through the Northwest and take advantage of the opportunity to see some of the wonderful sights like the Yellowstone Park, the Great Salt Lake, the Columbia River, Puget Sound, and the wonderful snow-capped mountains eternally covered with snow, varying in height from 11,000 to 14,000 feet, of which there are several, as follows: Mount Hood, Mount Adams, Mount Tacoma (frequently called Mount Rainier), Mount St. Helens and Mount Shasta.

BETTER FRUIT PUBLISHING COMPANY, PUBLISHERS, HOOD RIVER, OREGON

Subscription \$1.00 per Year in the United States; Canada and Foreign, Including Postage, \$1.50.

Single Copy 10 Cents

For downright dependability—simplicity of operation—ease of handling—effective high pressure work—convenience—durability—and all round satisfaction—the Bean is in a class by itself. Made in various sizes and capacities—and **BEAN QUALITY** has been built into them all. Illustrated below are two of our popular rigs.



THE BEAN GIANT
A Marvel of Power, Capacity and Efficiency

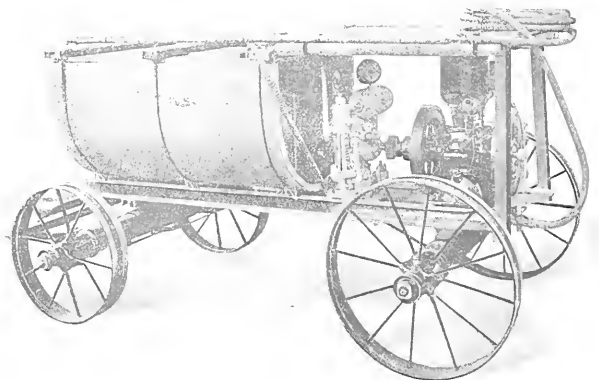
A One-Man Power Sprayer

This is the first season that you have been offered Bean quality in a small, low-priced power outfit. This is a one-man rig. One horse can haul it without trouble. Supplies one line of hose at high pressure and will cover from two to three acres a day. **BEAN QUALITY** through and through, with the many distinctive features that have made Bean power sprayers the recognized leaders throughout the fruit-growing world.

Equipped with Novo Engine, Bean Midget Duplex Pump, Pressure Regulator, 100-gallon Redwood Tank, Rotary Agitator, Truck, Canvas Cover and Curtains, Bean High Pressure Spray Hose, Aluminum Rod, and Complete Set of Accessories—all ready to begin work.

For the grower with a comparatively small acreage—the Bean Eureka is just the rig.

Furnished, also, without tank and truck—for the operator to mount on his own wagon. Write for wonderfully low price.



THE BEAN EUREKA
A Dandy Little One-Man Power Rig

Sign and Mail this Coupon Now for Our Complete Sprayer Catalog



It illustrates and describes the entire Bean line of Hand and Power Sprayers. It explains the many distinctive Bean features and tells you many things you should know before you invest in a sprayer.

BEAN SPRAY PUMPS are built complete in our own factory, with the exception of the Novo engine—and who can build a better sprayer engine than the Novo? Every outfit is carefully tested before it leaves our plant—and is guaranteed to do good work—and to continue to do good work—when it reaches the grower. Our factory representatives visit all fruit sections regularly and are always ready to lend a helping hand to any Bean operator.

213 West Julian Street

12 Hosmer Street, Lansing, Michigan

San Jose, California

DELIVERIES MADE FROM PORTLAND AND OTHER NORTHWEST POINTS

CUT OUT THIS COUPON AND SEND TO US
BEAN SPRAY PUMP CO.
 213 W. Julian St., San Jose, California.
 Gentlemen: Please send me a copy of your Catalog
 28-A. I am specially interested in _____
 Bean Giant _____
 Name _____
 Address _____
 Bean Eureka _____

LILLY'S SOLUBLE SULPHUR COMPOUND SPRAY

The Sulphur Spray in Dry Form

A Marvelous Success—East, West and Everywhere

Manufactured on Pacific Coast under Niagara Patents

Advertised and sold in the East as

NIAGARA SOLUBLE SULPHUR COMPOUND

This powdered spray material dissolves instantly in hot or cold water and, in the long run, there is no better or cheaper spray material

For the Control of San Jose Scale

READ THESE TWELVE REASONS

Why Lilly's Soluble Sulphur Compound is the economical, practical, efficient and convenient spray material for the practical fruit grower:

1. 100 pounds of LILLY'S SOLUBLE SULPHUR COMPOUND is equivalent to 600 pounds of commercial lime-sulphur solution. Why pay freight on water?

2. A 100-pound drum of LILLY'S SOLUBLE SULPHUR COMPOUND makes more diluted spray material than a barrel of lime-sulphur solution; reducing the actual cost of material.

3. LILLY'S SOLUBLE SULPHUR COMPOUND is neat and convenient to handle.

4. LILLY'S SOLUBLE SULPHUR COMPOUND comes in inexpensive metal drum, which when empty may be thrown away; no money paid out for barrels; no bother returning empty packages.

5. Its powdered form makes leakage impossible.

6. LILLY'S SOLUBLE SULPHUR COMPOUND keeps indefinitely anywhere, and can be held over from one season to another without loss.

7. LILLY'S SOLUBLE SULPHUR COMPOUND is equal to and has proven many times to be superior to lime-sulphur solution in insecticidal and fungicidal value.

8. A drum of LILLY'S SOLUBLE SULPHUR COMPOUND may be carried in buggy or automobile, making hauling convenient and inexpensive. One man handles it easily.

9. LILLY'S SOLUBLE SULPHUR COMPOUND may easily be obtained in small packages. It is put up in 100, 10 and 1-pound cans.

10. LILLY'S SOLUBLE SULPHUR COMPOUND is at least 25% cheaper to use than lime and sulphur solution, when it is considered that a 100-pound drum makes 60% more spray than a barrel of lime-sulphur solution; less expense in hauling and handling; no loss from leakage and crystallization; keeps indefinitely, and no empty barrel to return.

11. Will not wash off the trees.

12. Leaves a fine, waxy finish on fruit.

LILLY'S SPRAY BULLETIN No. 30 tells more about this wonderful spray. It also tells HOW TO SPRAY FOR SUCCESS. It deals with spray problems in a masterly way. It is worth money to you. You can have it for the asking.

Go to your dealer NOW and tell him you want LILLY'S SOLUBLE SULPHUR, or send to us direct at Seattle or Portland and we will ship from the nearest distributing point.

\$7.50 per 100-lb. drum

1.25 per 10-lb. can

.20 per 1-lb. can

f.o.b. Seattle, Portland, San Francisco, Los Angeles, Spokane, North Yakima, Hood River and Medford.

If you are interested in Farming, Gardening, Fruit Growing, Poultry Keeping, Bee Keeping, Fertilizing, Spraying, or any branch of agriculture, you cannot afford to be without a copy of LILLY'S ANNUAL. We will be glad to mail it to you, free.

THE CHAS. H. LILLY CO.
SEATTLE PORTLAND

PAINT WITHOUT OIL

Remarkable Discovery That Cuts Down the Cost of Paint Seventy-Five Per Cent.

A Free Trial Package is Mailed to Everyone Who Writes.

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powderpaint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather-proof, fireproof and as durable as oil paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manufacturer, 255 North Street, Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write today.

IF YOU WANT TO MARKET YOUR

FRUIT

RIGHT

ALWAYS SHIP TO

W. B. Glafke Co.

WHOLESALE FRUITS AND PRODUCE

108-110 Front Street
PORTLAND, OREGON

The Old Reliable
BELL & CO.

Incorporated

WHOLESALE

Fruits and Produce

112-114 Front Street
PORTLAND, OREGON

Mark Levy & Co.

COMMISSION MERCHANTS

Wholesale Fruits

121-123 FRONT AND
200 WASHINGTON ST.

PORTLAND, OREGON

The Paris Fair

Hood River's Largest and Best Store

RETAILERS OF

EVERYTHING TO WEAR

AGENTS FOR

HAMILTON & BROWN AND
THE BROWN SHOES

HART, SCHAFFNER & MARX
CLOTHES

MANHATTAN SHIRTS

JOHN B. STETSON HATS

NEMO CORSETS

Strictly Cash—One Price to All

Things We Are Agents For

Knox Hats

Alfred Benjamin & Co.'s Clothing

Dr. Jaeger Underwear

Dr. Deimel Linen Mesh Underwear

Dent's and Fownes' Gloves

Buffum & Pendleton

311 Morrison Street

PORTLAND, OREGON

W. H. DRYER

W. W. BOLLAM

DRYER, BOLLAM & CO.

GENERAL

COMMISSION MERCHANTS

128 FRONT STREET

PHONES: MAIN 2348
A 2348

PORTLAND, OREGON

LEVY & SPIEGL

WHOLESALE

FRUITS AND PRODUCE

Commission Merchants

SOLICIT YOUR CONSIGNMENTS

Top Prices and Prompt Returns

PORTLAND, OREGON

STORAGE

Ship your Furniture to us to be stored until you are located

TRANSFER & LIVERY CO.
Hood River, Oregon

Richey & Gilbert Co.

H. M. GILBERT, *President and Manager*

Growers and Shippers of

YAKIMA VALLEY FRUITS AND PRODUCE

Specialties: Apples, Peaches, Pears and Cantaloupes

TOPPENISH, WASHINGTON



Stop at "The Oregon," Hood River
Clean Rooms—Excellent Meals—One block from depot

A PANORAMIC VIEW

of the

Famous Hood River Valley

showing

13,000 acres of apple orchards, Mount Hood, Mount Adams and the Columbia River Gorge.

40 inches long Price \$1.00

SLOCUM & CANFIELD'S BOOK AND ART STORE
Hood River, Oregon

W. F. LARAWAY

DOCTOR OF OPHTHALMOLOGY

EYES TESTED



LENSES GRIND

Over 30 Years' Experience

Telescopes, Field Glasses

Magnifiers to examine scale

Hood River
Oregon

and

Glenwood
Iowa

BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

How Can We Make More Money On Apples?

By E. H. Shepard, Editor "Better Fruit."

WHENEVER any line of business is not paying a satisfactory profit there is a reason. The logical thing to do, which fruitgrowers have not done, is to make a thorough investigation of each department of the business in order to find out where the leakage is, how the cost of production can be reduced and how the profit can be increased. In other words, it is necessary to make a complete analysis of your business. Usually when a business fails to pay a profit there are reasons.

Fruitgrowers today are in a similar position to the manufacturers whose business was affected by the Underwood tariff. Our prices are lower, and therefore we have got to investigate our business, analyze it and find what we can do to reduce the cost of production, what we can do to create a greater efficiency in our selling methods and what we can do to secure better prices. This naturally divides itself under several heads:

First—Cost of Production

I have talked with a great many growers upon this subject and in nearly every instance I find that few growers have kept a record of the actual expenses incurred in growing a crop of apples, and therefore I seldom find one who can furnish the costs in each department of growing. Without this we cannot ascertain what is costing us too much money, and therefore we do not have a definite knowledge as to where we can reduce the cost of production. The average grower will tell you that it costs all the way from 70 cents to \$1.00 per box to grow a box of apples, pack it and deliver it to the local warehouse or depot. The cost of growing a box of apples consists of the following items of expense: Pruning, cultivation, spraying and irrigation. When growers keep records of these items of expense and determine the exact costs, and compare them with the other growers' accounts, then they will ascertain where their own costs are too high, and with such knowledge they certainly ought to be able to reduce each cost to a reasonable minimum.

Harvesting

The harvesting cost varies perhaps more than almost any other cost of the grower and has varied in the past from about 40 cents a box to 60 cents. Again, seldom do I find a grower who knows the exact cost of each individual feature connected with harvesting. Until such items of expense are known in connection with each feature of the

harvesting, the grower is certainly not in a position to reduce this cost. It may be surprising to some of you who have not given the matter study to know that there are ten individual costs, from picking the apple to delivering it to the warehouse or depot. They are as follows: Cost of the box; hauling same knocked down to packing house; making up the box, including nails; picking, hauling empties to orchard and filled boxes to packing house, grading, packing, paper, nailing up, extra cost in packing house, hauling to the depot.

he has spent in producing them. Vinegar factories and cider mills paid last year \$7.00 and \$8.00 per ton, and this year they paid \$6.00 per ton. In dollars and cents the cull apples, at \$6.00 per ton, will amount to about \$20.00 per acre. If a man has 40 acres that would mean \$800, which is a nice little sum for the grower to realize out of what otherwise would be waste and therefore bring him nothing.

Third—Diversity Farming

For nearly 40 years I have tried to find a way which would enable me to earn a living by working half of the time and loafing the other half, but I have not found it. Yet the great majority of fruitgrowers in the Northwest have evidently been trying this stunt for years. You know and I know that the average orchardist does not actually put in much more than six or seven months' work on his place during the entire season outside of his chores. By that I mean that after the first of November, when a crop is harvested, and during the months of December, January, February and March, the fruitgrower does not do much of anything except a little pruning. The other six months, outside of the harvesting season, the average fruitgrower is not a very hard worker, and a big lot of them spend from one-quarter to half their time fooling around town instead of being actually engaged in producing something on the ranch which would bring them in extra money. With few exceptions, there is not a single man engaged in the fruit-growing business in the Northwest who cannot do something to bring in some extra money. It is not my purpose to tell you just how to do these things, but I do want to call your attention to a few of the diversity lines in which you can engage and make some extra money from without very much expense and in this way utilize your time and put in 265 days of the year if necessary. Among such side lines, which any fruitgrower can engage in if he is not too lazy, are bees, poultry, hogs, sheep, truck gardening and dairying. The work is not hard nor the amount of time required very great to care for bees, poultry, hogs or sheep. Dairying and truck gardening require considerable extra work, but no more time than the average fruitgrower could reasonably spare and still give his orchard the best of care.

All of us know that our soils quickly become deficient in nitrogen and humus. In order to supply these elements and maintain the fertility of the soil

Features of this Issue

HOW CAN WE MAKE MORE MONEY ON APPLES

WHAT IS THE FARMER'S REAL INCOME

LEAF NOTCHES A GUIDE TO VARIETIES

SPRAYING AND PRUNING TO COMBAT POWDERY MILDEW

HOME USE SAVES BIG APPLE CROP

If we can save 5 or 10 cents per box in the growing and 10 cents per box in harvesting, it is worth saving. I know of a few orchards where the growing expense this year was 25 cents per box. This included all costs connected with the growing of the crop from the end of harvesting until the beginning of the next harvesting season. I believe I am safe in saying that it has been costing growers over 70 cents per box to produce and harvest a box of apples, and I believe I am safe in saying that this expense can be reduced to approximately 60 cents per box, not including interest on the investment.

Second—By-Products

The cull apples from an orchard at the age of full bearing will be from 10 to 20 per cent of the entire crop. The grower understands that these cull apples are costing him just the same amount of money to grow, just the same amount of money to pick and just the same amount of money to grade out that the good apples are costing. If he cannot dispose of these cull apples then he has lost just so much money which



Display of the Prosser Commercial Club, winner of third prize of \$50 among feature displays entered by organizations at the Seventh National Apple Show, 1911. The value of diversified farming in connection with the fruit business is emphasized in this exhibit.

we are compelled to grow cover crops, as the ground requires. On these cover crops we can feed a drove of hogs, a flock of sheep or a herd of dairy cows. The suggestions are not experimental, because I actually know of a number of growers who are making good money on the diversity lines such as I have already mentioned. At the National Apple Show at Spokane I met one fruitgrower who told me that already this season he had sold \$13,000 worth of hogs and \$7,000 worth of cattle.

Fourth—Cost of Marketing

I have always believed, and there are many who concur, that our cost of marketing has been unnecessarily high. If you are going to do anything successfully you must do the job thoroughly, and therefore I have begun at the bottom and first told you that you must reduce the cost of production, which you can do; that you must reduce the cost of harvesting; that you can and must increase your income by diversify lines; and now I say to you that you must go after the cost of marketing in the same thorough manner and endeavor to have it done in the most economical way. It is not my intention to criticize any particular marketing concern, but the system in general. In each one of the different fruit districts at the present time we have all

the way from a half dozen to one dozen marketing concerns. This means that at the present time there exists an unnecessary number of overhead duplicating expenses which we fruitgrowers have to pay for. I believe that the interest is such and the necessity of the growers so great that, through their influence and with the willing consent of many marketing concerns, a number of them can be harmonized and brought together, thus eliminating the number and reducing the unnecessary expense in marketing for which the grower pays.

But a greater evil exists in connection with too great a number of marketing concerns than the extra expense of marketing. By that I mean that an unnecessary number of marketing concerns has resulted in an unnecessary cut on the price of apples this year. This self-competition is probably costing the grower more this year than any other one feature in connection with his business. The complaint of price cutting seems to be quite general on the part of marketing concerns,—each apparently blaming the others. I have heard of a number of instances where this price cutting has taken bread out of the fruitgrowers' mouth. One manager told me that after he had sold a number of cars to an Eastern firm his price was cut by a competitor 15 cents on one grade and 10 cents per box on another. Another instance came to my attention: A marketing concern quoted a dealer at a certain price, which the Lord knows was pretty low, but the dealer declined the offer, stating that he was quoted 25 cents less per box. Here are three instances of the self-competition where it cost the grower 10, 15 and 25 cents per box this year.

Fifth—Home Storage

I have been asked to discuss this subject upon several occasions. As I am simply calling attention to the main features where money can be saved and made, I will not go into this in detail, but will simply cover it in a general way. Nearly all Eastern cold storage do not accept apples on cold storage, no matter how short a time they may remain, at less than a two-months' charge, which is usually 10 or 12 cents per box. Season charges vary in different cold storage plants from 17 to 25 cents. Consequently the average cold storage and Eastern warehouse will probably charge somewhere from 15 to 20 cents per year. The reason for this is that Eastern cold storage plants are usually built in cities alongside railroad tracks, where real estate is very high, and consequently they must charge this sum in order to pay expenses and make a fair profit. Cold storage plants in our fruit districts can be erected alongside of railroad tracks on cheap ground, and the actual cost



Display of Greenacres Boys' Apple Club at the Seventh National Apple Show, 1911. This is said to be the first boys' apple club in the world.

of cold storage in the same for the average season would be somewhere from 5 to 10 cents per box, which would mean a saving to the fruitgrower of at least about 10 cents per box on storage cost alone.

In addition to this there are other items of expense connected with Eastern cold storage, such as reloading, switching and inspection. Frequently there is extra freight on back-hauls or where apples do not go through direct to destination points on in-transit rates. These items will be a further reduction in expense of several cents per box.

Our crop comes on pretty quickly and frequently, as this year, ripens very rapidly. Without a sufficient amount of cold storage at home, particularly when there is a shortage of cars, our fruit is held too long in common storage, and consequently becomes too ripe when it reaches destination and therefore, not being fit for cold storage, it has to be sold on the market, and if the market is glutted our profits have to be sacrificed. But do not misunderstand me. I do not mean that we ever will or can expect to build sufficient cold storage houses to cold storage all of our crop. Neither do we want to. We always have and always will have to use a good quantity of Eastern cold storage. This is necessary because we must maintain in future years a supply of apples in cold storage near big consuming points in order to be able to supply the trade quickly as demand will require.

In connection with home storage, I trust it will also be in place to make a few remarks about packing houses and community packing houses. I believe that every fruitgrower who has 40 acres is justified in having a packing house sufficient to care for his own crop. Such a packing house should be built so that it will be cool in the early part of the season and prevent the apples from ripening too fast; it also should be built so that if we are delayed in packing it will afford ample protection against the apples freezing if exceedingly cold weather comes on before our crop is packed completely. I believe that growers who have less than 40 acres can build community packing houses to advantage. In this way they can make arrangements for handling their crop on a much smaller investment and at a much less expense than if they were compelled to build individual packing houses.

Sixth—Greater Consumption

The fruitgrower is just beginning to realize that greater consumption is an important feature in securing better prices. Two samples of greater consumption near at home are striking illustrations. During the National Apple Day celebration a campaign was waged in the City of Portland and in about two weeks 80,000 boxes of apples were consumed. In the City of Seattle, which has a population of about 300,000, a campaign was put on during National Apple Day week and 60,000 boxes of apples were sold in one week. The City of Seattle has 300,000 popula-



Lighthouse made of apples. Entered by Cashmere Fruit Growers' Union at the Seventh National Apple Show, held November 16 to 21, 1914, in Spokane. This exhibit won second prize of \$100 among the feature displays entered by organizations.

tion. The population of the United States is 90,000,000, and therefore it is three hundred times greater than Seattle. If apples were properly distributed all over the United States, arrangements made to sell at a reasonable retail price, with the right kind of publicity and advertising, on the above basis the United States would consume 18,000,000 bushels of apples in one week. I do not believe the crop of apples this year in the United States will exceed (and I think it will be much less) 150,000,000 bushels, or 50,000,000 barrels. At the above rate it would be possible for the United States to con-

sume the entire crop of apples of the year 1914 in eight weeks, or less than two months.

On this basis of figuring, it seems evident to me that our systems of selling, distributing, publicity and retail prices are far from satisfactory and a long way from perfection.

Seventh—Exorbitant Retail Prices

Exorbitant prices prevent consumption. Moderate prices increase it. Every one of you fruitgrowers know, and it is a fact, that the retail prices on apples in the past years have been almost equivalent to extortion. The



Showing the crowd at the Oregon-Washington Railroad & Navigation Company demonstrations given by Mrs. Eleanor Meacham Redington, at the Seventh National Apple Show.

average retail profit in the grocery business is from 15 to 20 per cent; on tobacco 25 to 50 per cent; clothing about 50 per cent. In fact nearly all retail prices, outside of a few special lines, vary from 15 to 50 per cent. How about the retail prices on apples?

I had a letter only a few days ago from Boston from a friend who stated that he had to pay 40 cents per dozen, retail, for Jonathan apples. The Jonathan is not a large apple, and while I do not know the exact size in this case, suppose it was 138; that would mean that a box of apples retailed at \$1.10. You growers know what you got for your Jonathans; you know the freight is 50 cents per box; the commission house aims to make about 10 per cent, and therefore you can figure out the retail profit.

I have investigated a number of instances on the retail prices of apples and invariably I find that they run all the way from 100 to 500 per cent profit. In other words, where the average business man does a successful business at a retail profit of from 25 to 50 per cent, the retail profit on apples is averaging, in my opinion, from 100 to 500 per cent. If the retail price is high, it prevents consumption. If the retail price is reasonable, it increases consumption, and increased consumption increases the demand. This means firmer and better prices for the grower.

While we have many evils in the apple business that are preventing us from getting our just prices, I believe that exorbitant retail price is the biggest stumbling block in the apple business today and is doing more than all other features to prevent the fruit-grower from getting a just price for his box of apples.

seding the horse very rapidly. A few years ago a gasoline engine was scarcely ever seen on the farm. Today fruitgrowers are using gasoline engines to run the spray outfit, to pump water, saw the wood, cut the feed; they are using motor-driven vehicles to go to and from town on business as well as for pleasure; they are using auto tractors to haul their fruit to the railway depot; traction engines are used for cultivating the orchards. All of this is because of greater efficiency and economy. The small auto tractor has arrived, one that is suitable to the small farmer and orchardist. It has been definitely determined by actual practice that the auto tractor is a money saver for any man who has 100 acres to cultivate. There are many who believe it is a money-saving proposition where the acreage is considerably smaller. The gasoline engine can be used in running the husker, running the silo, the threshing machine; in fact everything which the farmer did by horse power can be done by motor power, except on very small farms or intensified farming like truck growing.

A Few Cows Pay Well

Fruitgrowers throughout the Northwest are finding they can take care of a few cows along with the orchard work and in this way secure an additional income without extra expense. Co-operative creamery routes are being established in some fruit-growing sections. Naturally the fruitgrower will want to know more about the dairy business. We suggest Kimball's Dairy Farmer, which contains splendid information about dairying. The price of Kimball's Dairy Farmer is \$1.00 per year. We can give you a clubbing offer of Kimball's Dairy Farmer and "Better Fruit" for \$1.60 per year.

Motor Power on the Farm

A few years ago practically everything was moved by horse power except steam engines. It is interesting indeed in reading the war news to note that where horses were used in moving siege guns they are now moved by motor-driven vehicles. In addition to this the motor vehicles are being used in the present war for transporting the troops and for moving the supplies. Gasoline motors seem to be super-



Beautiful exhibit made by the Northwestern Fruit Exchange of the "Skookum Brand" at the Portland Land and Product Show and the Seventh National Apple Show.

To put it at once into Half a Million Farm Homes



THE COUNTRY GENTLEMAN

The big \$1.50 farm paper, will be mailed to you 3 months—

13 Weeks—25 Cents

THE COUNTRY GENTLEMAN treats farming as a business—not only *growing* stuff, but *selling it at a profit*—the chief end of any business.

These 13 issues—for 25 cents—would make a book of nearly 1,000,000 words and 800 illustrations, covering more than 500 farm subjects, divided about as follows:

General Farming	95	Articles
Livestock	75	"
Marketing, Management and Finance	60	"
Buildings, Equipment and Labor	45	"
Poultry	55	"
Vegetables, Flowers	60	"
Dairying	25	"
Orchards and Trees	45	"
Rural Social Life	25	"
Home Making	55	"

Free Personal Service

Any farm question that puzzles a reader of THE COUNTRY GENTLEMAN will be answered personally and promptly *by mail*. More than 100 practical experts are at our call to render this free personal service.

3 MONTHS (13 ISSUES) 25¢

THE CURTIS PUBLISHING COMPANY, Box 149, Philadelphia
 R. F. D. Route
 Mail to us now
 and start at once
 P. O. Address
 Name
 (In Canada 50c.)



What Is the Farmer's Real Income

(Office of Information, United States Department of Agriculture)

EXTENSIVE investigations into the profits of farming have indicated that the amount of money which the average farmer receives for his year's work is little more than that which he would be paid if he hired himself out as a farm hand to one of his neighbors. In other words, though the farmer is in business for himself, the average farmer gets little or no money reward for the intelligence and skill with which he has managed his affairs or the risk and responsibility he has assumed. But he must get something in return or no one would trouble to farm for himself. A recent study conducted by experts in the United States Department of Agriculture shows that in many cases this reward may best be found in the products with which his farm furnishes him directly. When a farm is nearly, if not quite, self-sustaining, say agricultural experts, when it supplies the family that lives upon it with most of the necessities of life, a large money income is not necessary to prosperity. A greater sum derived from a farm which yields nothing for home consumption may leave the occupants much worse off.

Under the title of Farmers' Bulletin 635, "What the Farm Contributes Directly to the Farmer's Living," the Department of Agriculture is about to publish the results of a survey of conditions on a large number of farms in the ten States of North Carolina, Georgia, Texas, Kansas, Iowa, Wisconsin, Ohio, Pennsylvania, New York and Vermont. The farms selected for study, though possibly a little more prosperous than the average, were fairly representative of their sections, which, it will be noted, included three corn and cotton areas, two states in the corn and wheat belt, two regions where general farming was carried on and three different dairy districts. The average value of the chief necessities of life—food, fuel, oil and shelter—used each year by the farm family the investigators found to be \$595.08. Of these necessities, estimated in money, the portion contributed directly by the farm was \$421.17, leaving \$173.91 to be purchased with the cash obtained from

the sale of products. In considering these figures it must be remembered that if the farmer had been compelled to pay city prices for his home-grown necessities, this \$421.17 would have represented much less comfort.

Of the food consumed 63 per cent was furnished by the farm. This proportion varied greatly in the different sections, but was greatest in the locality studied in North Carolina, where the farms supplied 82.3 per cent of the food consumed, while the average in the New York locality was only 50.4. In view of the present economic crisis in the South this fact is regarded as of particular significance, since it demonstrates the extent to which, with a proper system of agriculture, Southern farms can be made self-sustaining. Concentration upon one cash crop, cotton, has proved disastrous and agricultural authorities are now trying in every way to induce the people to adopt a system which will lead to conditions similar to those now prevailing in this particular area of North Carolina.

In this connection the investigation revealed some interesting facts in regard to the four items of groceries, animal products, fruits and vegetables in the average farm family's food bill. Of the value of the food consumed groceries constituted practically one-quarter, animal products more than one-half, vegetables 11.6 per cent and fruit only 6.3. Practically all of the groceries were bought; on the other hand, the quantity of fruits and vegetables used was in direct proportion to the quantity raised on the farm, and where this quantity was great the grocery bill was correspondingly low. This was also found to be true of animal products, including of course not only butcher's meat but poultry, eggs, milk, cheese, etc. Where these were abundant on the farm fewer groceries were purchased. Since the grocery bill was found to be ordinarily two-thirds of the entire amount expended in cash for food, one very obvious and effective way of economizing appears to be to raise more vegetables, more fruit, more milk and eggs. In many cases, experts

say, this can be done with no appreciable increase in trouble or expense.

Next to food, shelter is probably the most important necessity of life. In considering the farmer's income, however, a common error in the past has been to ignore the question of house rent. The value of the house has usually been included in the value of the land and the whole considered as capital invested on which interest must be paid before the farmer can be regarded as receiving any pay at all. This method, however, assumes that the farm family is to have shelter for nothing—an assumption which the city worker with whom it is not unusual to pay out from one-third to one-quarter of his entire wages for rent alone would regard as most astonishing.

According to the recent investigation, if the average farmer had to pay rent, his home would cost him \$125 a year. This figure represents ten per cent of the value of the average house. Including interest, depreciation and repairs, this is regarded as a fair rental charge for the class of houses usually found on the farm.

With the information at their command, the investigators were also in a position to compute the average cost of board and lodging on the farm. In this they included an item very easily forgotten—the value of the housework performed by members of the family. This was reckoned on the basis of the wages that would have had to be paid for hired assistance. Including this with the more obvious charges for food, fuel, light and rent, it was found that board and lodging for each individual averaged \$14.62 a month. But of this sum, it is interesting to note, the farmer paid out in cash only 22 per cent. Exclusive of lodging the board of the average hired man cost \$10 a month, but here again the farmer had only to pay \$3.00. The remaining \$7.00 was furnished by the farm as a result presumably of the hired man's own efforts.

The averages obtained as the result of this investigation are not, of course, to be taken as mathematically exact for the entire country. In the opinion of agricultural experts, however, they point with convincing emphasis to the possibilities of comfort and prosperity that may be realized by a fuller utilization of all the farm's resources. Cash crops are not the sole, and on the average they are not even the chief source of real income. It is really what the farm furnishes directly to the farmer that enables him to support his family. To increase the quantity and quality of this direct supply is one great object of farm management studies.

Dairying

Fruitgrowers are taking up dairying quite extensively as a side line, and therefore it is our pleasure to call your attention to the fact that Hoard's Dairyman, published at Fort Atkinson, Wisconsin, is one of the best publications on this subject in America.

The
ACME
Pulverizing
Harrow

Prepares a Perfect
Seed Bed On Fall or Spring Plowing

The coulters cut, crush and pulverize lumps and clods, leaving a leveled surface finely smoothed to seeding depth, with a compact underside. The air spaces are eliminated insuring plant roots a proper medium for healthy and vigorous growth. Manure and stubble plowed under is left underneath to nourish plant roots. Sizes from 3 to 17½ feet in cutting width. For one to four horses.

No. 23
6½ Ft. Wide

All Steel—Light Draft
Write for free catalog and name of nearest dealer.

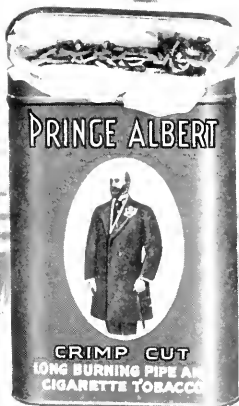
DUANE H. NASH, Inc.
347 Division Ave. Millington, N. J.





Get Next to This Inside Stuff

There are thousands of men, pipe-stung and tongue-sore, who love a pipe, but have had to chuck it because the tobaccos they've tried have left their tongues as tender as though they'd been chewed. You fellows who have bitten at and been bitten by tobacco full of rough edges come on in and get next to the joy of smoking fragrant tobacco that's had its teeth pulled. The goodness of



Copyrighted 1915
R. J. Reynolds Tobacco Co.

PRINCE ALBERT

the national joy smoke

is all in the tobacco and the wonderful patented process that takes out the bite, leaving a cool, comfortable, free-burning, fluffy smoke that you can hit as hard and as often as you feel that impulse. Meanwhile, Mr. Tongue lolls around as happy as a clam at high tide. When we say we control this patented process exclusively and that no one else can use it, we're handing you strictly inside stuff.

There isn't another tobacco in the world just like good old P. A. There never can be.

So, if you've canned that good old jimmy pipe, get it out and give it a new lease of life.

You can buy P. A. at any store that sells tobacco, either in the tidy red tin, 10c; the toppy red bag 5c; in pound and half-pound tin humidors; or in the crystal-glass P. A. humidor containing one pound, the dandiest kind of a container for home and office use.

R. J. REYNOLDS TOBACCO COMPANY, Winston-Salem, N. C.

BETTER FRUIT

HOOD RIVER, OREGON

official Organ of The Northwest Fruit Growers' Association
A Monthly Illustrated Magazine Published in the
Interest of Modern Fruit Growing and Marketing
All Communications Should Be Addressed and Remittances
Made Payable to

Better Fruit Publishing Company

E. H. SHEPARD, Editor and Publisher

H. E. VAN DEMAN, Contributing Editor

STATE ASSOCIATE EDITORS

OREGON

C. L. Lewis, Horticulturist..... Corvallis

H. S. Jackson, Pathologist..... Corvallis

H. F. Wilson, Entomologist..... Corvallis

WASHINGTON

Dr. A. L. Melander, Entomologist..... Pullman

O. M. Morris, Horticulturist..... Pullman

COLORADO

C. P. Gillette, Director and Entomologist..... Fort Collins

E. E. House, Chief of Department of Civil and Irrigation
Engineering, State Agricultural College..... Fort Collins

E. P. Taylor, Horticulturist..... Grand Junction

IDAHO

W. H. Weeks, Horticulturist..... Moscow

W. S. Thornber, Horticulturist..... Lewiston

UTAH

Dr. E. D. Ball, Director and Entomologist..... Logan

Leon D. Batchelor, Horticulturist..... Logan

MONTANA

O. B. Whipple, Horticulturist..... Bozeman

CALIFORNIA

C. W. Woodworth, Entomologist..... Berkeley

W. H. Volk, Entomologist..... Watsonville

BRITISH COLUMBIA

R. M. Winslow, Provincial Horticulturist..... Victoria

SUBSCRIPTION PRICE:

In the United States, \$1.00 per year in advance

Canada and foreign, including postage, \$1.50

ADVERTISING RATES ON APPLICATION

Entered as second-class matter December 27, 1906, at the

Postoffice at Hood River, Oregon, under Act

of Congress of March 3, 1879.

Buy It Now.—At a meeting of the agricultural advertisers and publishers in Chicago, after discussing the business conditions of the country, there was a unanimous sentiment that the financial condition of the United States is better at the present time than it has been for several years. The crops throughout all of the farming districts were good in 1914, and fair prices for nearly every product grown on the farm have been realized with comparatively few exceptions. The new currency system is meeting with general approval of the banks. The regional banks will be strong factors in equalizing the financial conditions, supplying the needed capital in every section for the moving of crops and other necessary purposes. The United States is prosperous. Already business in the East and Middle West has shown a decided improvement. There is no reason why this improvement should not extend to the Pacific Coast. It is believed that conditions warrant a rapid revival of business, and if this comes prosperity will follow. On account of the war prices on many commodities are advancing. In view of this it seems good judgment to suggest that now is a good time to purchase. If the people of the United States will begin purchasing the things they have to have during the coming year it will not only frequently save considerable money on the purchase, but start the wheels of commerce going, and if the wheels of commerce once start it means prosperity for the country and success for everybody. Consequently we are publishing in this issue a number of suggestions in separate paragraphs, each one headed "Buy it now."

Agricultural publications are back of this movement and of buying now what they will need and have to buy later. If the people of the country grasp this movement it will mean that general business activity will be increased, everyone will feel the beneficial effects—jobbing houses will soon be working full force, factories running full time with full help, and in this way men who are now out of work will be given employment and many families who are in need of actual necessities for lack of employment will be given work and families provided for. It is not intended that this campaign should suggest indiscriminate buying, but it suggests the economic buying and urges people to buy now what must be bought a little later. It is hoped and believed this campaign will meet with the approval of the farmers. Government statistics show the farmers to be more prosperous today than they have been. In 1914 the output from the farms exceeded that of 1913 by \$83,000,000, and while the farmers are showing a margin of profit the merchant and manufacturer are having a hard time making ends meet. Many in the cities are out of a job. If the people will buy now many things they need a little later factories would soon be running full blast and many idle people be given employment. With the general buying of the necessary merchandise, supplies and equipment, business conditions will materially improve and the unsettled conditions will be lessened and confidence restored with rapidity.

The Panama-Pacific International Exposition will be the largest exposition that has ever been held anywhere in the world, and the most original and practical in every detail. The San Diego-Panama California Exposition, while not as large is very original and novel in every respect. Both of these expositions will contain exhibits from nearly every country on the face of the globe and every state in the United States. Special features will be the ex-

**"WE STARTED RIGHT
AND WE ARE RIGHT"**

6458 Acres

IN OUR ENTERPRISE

4178 Acres

ALL IN APPLES

Nine miles continuous rows of trees, the largest apple orchard ever planted.

All are one, two and three years old; the two and three year old all sold, amounting to over 3,000 acres.

We are now offering our one year at terms to suit you.

We give five years', from date of planting, free care. Our company is unlike others in the feature of staying with our purchasers after the free care period. Our plans make our interests mutual; we all work together for the interest of all.

Our Booklet will give you a simple statement of our dealings and methods. Write us for information.

DUFUR ORCHARD COMPANY

Northwestern Bank Building

Portland, Oregon

hibits of the products and manufactures of the Pacific Coast. Nowhere in the world is there such an opportunity for a man to achieve success in any line of endeavor as in California and the Pacific Northwest States,—Oregon, Washington, Idaho, Montana and Utah. All of these states are yet in their infancy. The opening of the Panama Canal is just the beginning. The settlement and development of these Pacific Coast States will be so rapid that in the near future the population on the Pacific Coast will be equal to the Atlantic Coast. In addi-



Bean High Pressure Spray Hose

*Made to withstand the action of
Oily and Corrosive Sprays*

This hose is constructed and treated especially for spraying use. High pressure doesn't weaken it. Oily materials and corrosive sprays don't rot it. You can depend on BEAN HIGH PRESSURE SPRAY HOSE—and do not need to work under the fear that at any moment it is liable to break through. Furnished in multiples of five feet, fitted with long shank female coupling and 1/4-inch hose connection. Fully guaranteed. With couplings attached, per foot, 23¢. without couplings, 21¢ per foot. At your dealers or direct from us.

Bean Spray Pump Co.

213 W. Julian, San Jose, Cal.

12 Hosmer, Lansing, Mich.

Myers Power Sprayers

Mounted on our special low down steel wheeled truck equipped with

Stover Spray Engine

Makes a power spraying rig that simply cannot be beat.

Three Popular Sizes

- | | |
|--------------------|-------------------|
| No. 10 | No. 12 |
| 100-gal. Tank | 150-gal. Tank |
| 1½ H.P. Engine | 1½ H.P. Engine |
| 2-in. Duplex Pump | 2-in. Duplex Pump |
| | |
| No. 2 | |
| 200-gal. Tank | |
| 2½ H.P. Engine | |
| 2½-in. Duplex Pump | |

Drop Us A Card for Our Catalog on Sprayers



Compact — Simple
Wear-Proof
Highly Efficient



Portland, Oregon

Spokane, Boise

tion to the profit that can be made by engaging in any line of business, farming or in a professional way, investors will profit by the rapid advances in property that must necessarily follow from the increased population that will be the result of the opening of the Panama Canal, and the increased population that will result from the thousands and hundreds of thousands of visitors who, after visiting the Pacific Coast, will make their homes with us. Nowhere in the world is there any section of the country where the climate is so perfect as on the Pacific Coast; nowhere in the world is the scenery more attractive or the people more progressive or the future brighter. Railroads are making especially low and round-trip rates to these expositions. "Better Fruit" advises everyone who visits these expositions to buy their railroad ticket one way through the Northwest, because the scenery along the railroads leading into the Northwest is most magnificent along any of the transcontinental lines. Among a few of the most important wonderful bits of scenery throughout the Northwest on the Pacific Coast may be mentioned the Rocky Mountains, the Yellowstone Park, the Great Salt Lake, Puget Sound, the great Columbia River, the most magnificent river in the world and next to the largest, with its wonderful bits of scenery such as Rooster Rock, Castle Rock, Multnomah Falls, Bridal Veil Falls, Latourelle Falls. The fruit valleys of Southern Idaho, Yakima Valley,

Wenatchee Valley, Rogue River Valley, Willamette Valley and Hood River are celebrated for their apples and fruits all over the world. Grander than anything we have mentioned in the Northwest are the wonderful snow-capped mountains, covered with snow the year round, and all ranging from 11,000 to

14,000 feet in height.—Mt. Tacoma or Mt. Rainier, Mt. St. Helens, Mt. Adams and Mt. Hood; Mt. Shasta, the Yosemite Valley and the Grand Canyon are all not only grand but wonderful sights.

The transcontinental roads through the Northwest are the Union Pacific, the Oregon-Washington Railroad &



FREE ON REQUEST—Our Silent Salesman

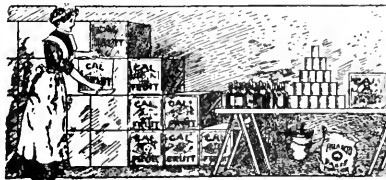
Quiet and unassuming, but up to date and reliable. Nicely illustrated and printed especially for Western buyers of

SEEDS OF ALL KINDS, Trees, Roses, Garden and Poultry Supplies, Canaries, Parrots, Bird Supplies, Fertilizers, Sprays, Sprayers, etc.

Don't buy until you read about our new policy—"No agents, but special prices, charges prepaid."—We save you time and money. Ask for Catalog No. 27—the new one.

ROUTLEDGE SEED & FLORAL CO. 169-171 SECOND STREET PORTLAND, OREGON

Paste for Labeling—"Palo Alto" Paste Powder



added to cold water, instantly makes a beautiful, smooth, white paste. Ready for immediate use at a cost of 10 cents a gallon. No labor. No muss. No spoiled paste.

PASTE SPECIALISTS
Robinson Chemical Works
349-351 Eighth Street
San Francisco, California

Save $\frac{2}{3}$ Fuel Cost With A Kerosene Burning Sandow



Investigate!

Without change of equipment, the Sandow runs on kerosene—gasoline—distillate—or alcohol.

On low priced kerosene, the Sandow delivers more power per h. p. of rating, than ordinary engines do on gasoline. With the Sandow you can save the price of your engine in upkeep economy alone. Investigate! Get all the facts.

Write for Free Sandow Book, which shows you by illustrations from photographs why the Sandow is the simplest engine made—the easiest to run—the most free from trouble and repair expense.

Only 3 Moving Parts

Starts at 40 degrees below zero. Starts without cranking—runs in either direction—throttle governed—hopper and tank cooled—speed controlled while running—no cams—no valves—no gears—no sprockets—light weight—can easily be taken anywhere for work—complete ready to run.

THERE'S A SANDOW FOR EVERY FARM

Made in all sizes from 1 1/2 H. P. to 18 H. P. Have a Sandow to meet your needs—do the work you want done at greatest economy. Sandow will do your pumping—run your feed grinders—your cream separators—do all the stationary power work of farm or shop, and save you more money than any other engine on the market. Sandow is not just an ordinary engine. Special design for kerosene fuel means more simplicity, greater durability. Send for Free Book and judge for yourself.

TEN YEAR IRON CLAD GUARANTY

Absolutely protects you—Sandow must make good on every claim. It is because Sandow is making good every day on thousands of farms that we can make this iron-clad, binding guaranty. Users everywhere will tell you how Sandow saves fuel—saves trouble—saves repairs—and can be depended on for power all the time.

FREE TRIAL ON YOUR FARM

Book gives our Free Trial proposition. Use the Sandow every day 30 days on your own farm. If you don't say it is the most economical and most powerful farm engine you ever saw—if it does not satisfy you every way, send it back and we will refund every cent you paid for it.

SPECIAL LOW PRICE DIRECT TO YOU

Just compare these rock-bottom prices for Sandow Engine, with those of any other engine manufacturer, and remember Sandow quality is unsurpassed. Sandow prices are: 1 1/2 H. P. Bull Pup Engine, \$33.75; 2 1/2 H. P. Sandow, \$42.00; 4 H. P. Sandow, \$55.00; 6 H. P. Sandow, \$65.00; 8 H. P. Sandow, \$140.00; 12 H. P. Sandow, \$250.00; 18 H. P. Sandow, \$365. We have no agents—no jobbers—no middlemen—no dealers. You buy of us and keep all the middle profits and commissions in your pocket. Before you get any engine, be sure to have our low figures and see what you can save.

SEND FOR FREE SANDOW BOOK
It is full of plain facts on the farm engine question—in-illustrated from cover to cover with pictures from photographs showing the simple construction of every part of the Sandow—contains the letters of users of the Sandow. Remember it costs you nothing to get the facts—does not place you under any obligation whatever. Write today. A postal brings the book. Address

Detroit Motor Supply Co.

Detroit Mich

65 Canton Ave.



Book of Sandow Facts

Send For it today

Navigation, the Northern Pacific, the Great Northern and the Canadian Pacific Railroads. The Southern Pacific, from Portland to San Francisco, presents 700 miles of the most wonderful scenic grandeur found anywhere in the world.

Every visitor should arrange if possible to stop off for a day at least at Spokane, Seattle and Portland on their way to visit the Panama-Pacific International Exposition.

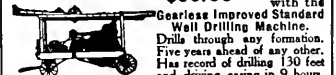
Leaf Notches a Guide to Variety.—

A most common-sense suggestion appears in an article under this caption in this issue by Mr. L. M. Cox of Zillah, Washington. Many fruitgrowers have planted apples and other kinds of fruit which have not turned out true to name, for which they have blamed the nurseryman. It is very strange indeed that it did not occur to the fruitgrowers that they might determine what varieties were not true to name when the trees were young instead of waiting until the trees were ten and twelve years of age and come into bearing. A few simple suggestions along this line seem worth while. Whenever a fruit-grower sets out a young orchard the first thing he should do, as a matter of insurance, is to study the character of the bearing trees of these varieties, and by comparison find out if the young trees he had set were true to name. Different varieties of trees have different shaped leaves, different colored wood and they grow differently. By studying these and other natural characteristics of trees and making comparisons, it would be a simple matter for the fruitgrower to ascertain the first year if his trees were all true to name.

Expert Horticulturist

Western experience, open for engagement as horticulturist or general manager. College man, wide practical experience. Address 1004 Congar Street, Whitewater, Wisconsin.

YOU CAN EARN \$50.00 PER DAY



Gearless Improved Standard Well Drilling Machine. Drills through any formation. Five years and up of any other. Has record of drilling 130 feet and driving casing in 9 hours. Another record where 70 feet was drilled on 2 1/2 gal. distillate at 9¢ per gal. One man can operate. Electrically equipped for running night. Fabulous. Engine ignition. Catalogue W. B. REIERSON MACHINERY CO., Manfrs. Portland, Ore.

W. van Diem

Lange Franken Straat 45, 47, 49, 51, 61

ROTTERDAM, HOLLAND

European Receivers of American Fruits

Eldst and First-Class House in this Branch

Cable Address: W. Vandiem
A B C Code used; 5th Edition

Our Specialties are

Apples, Pears, Navel Oranges

How Can We Make More Money in Apples?—In this edition there is an article by the editor of "Better Fruit," "How Can We Make More Money in Apples." The editor believes it contains some valuable suggestions that are well worthy of every fruitgrower's attention. Some of the ideas explained in this article are treated with more fully in the December and January issues of "Better Fruit," therefore the editor suggests and calls attention to the editorials on "By-Products," "Reducing the Cost of Apples from the Packing House to the Retailer," "The Cost of Harvesting," "National Apple Day and a Greater Consumption," appearing in the December edition of "Better Fruit." In addition to these two articles on by-products, there appeared in the January edition one by Mr. Robert S. Phillips, under the heading of the "Seventh National Apple Show and Fruit Products Congress," and another entitled "Growers' Grip By-Products Problem." Every fruitgrower who has not read the articles referred to in this editorial, we believe, will find it worth his while to do so.

Advertising the Apple.—Advertising the apple is beginning to receive the publicity it is entitled to, as many publications are taking up the subject of greater consumption. Some of the largest advertising agencies are now at work on this problem with a view to drawing up plans for advertising campaigns for the benefit of the fruitgrowers. Attention is called to the editorial that appeared in the Agricultural Advertiser which appears elsewhere in this issue, which gives some excellent suggestions from the standpoint of the advertising men as to what can be done to increase the consumption of apples.

For Tree Surgery

Tree Tanglefoot is better than anything on the market—it will absolutely water-proof the crotch of a tree or a cavity or wound in a tree, when nothing else will do it.

It is also unequalled for the treatment of trees after trimming or pruning. Tree Tanglefoot never hardens, hence there is no cracking, but substance remains always pliable, and the one application lasts for *years*, all the time wholly impervious to air and water.

For the caring of cavities and wounds Tree Tanglefoot is applied *only* after all decayed wood and loose particles of dirt have been removed and the cavity or wound thoroughly dried. The affected parts can quite easily be removed with a hammer and a chisel, and almost anyone exercising reasonable care can do the work.

Partially girdled trees, if given prompt attention, and the girdled surface coated with Tree Tanglefoot, will suffer no serious set-back, and new bark will gradually form, eventually covering the girdled surface. [Adv.]

The Shenandoah Nursery of Shenandoah, Iowa, is mailing out its wholesale list of nursery stock.

IT PAYS TO SPRAY MYERS WAY







THIS is appreciated most on long winter evenings. Then it is that the fruit cellar piled high with choice apples is visited nightly and a plentiful supply brought up for the entire family to enjoy.

SPRAYING MYERS WAY again presses home the fact that spraying does pay—pays in more ways than one—not only in producing fruit for which there is always a ready market, but also in raising a better quality for home consumption.

Begin planning now for next spring's operations. Ask your dealer or write us for Spray Catalog showing these and many other styles of **MYERS SPRAY PUMPS**.



F. E. MYERS & BRO.

120 Orange Street ASHLAND, OHIO

PUMPS HAY TOOLS DOOR HANGERS

The Ashland Pump and Hay Tool Works.





SPRAY MATERIALS

Best in Quality, Uniform in Price, Successful in Results

Distributing warehouses in principal fruit growing sections of Northwest for—

ARSENATE OF LEAD, Paste and Powder;
ATOMIC SULPHUR; BORDEAUX MIXTURE; LIME-SULPHUR SOLUTION;
OIL SPRAYS and SOAP

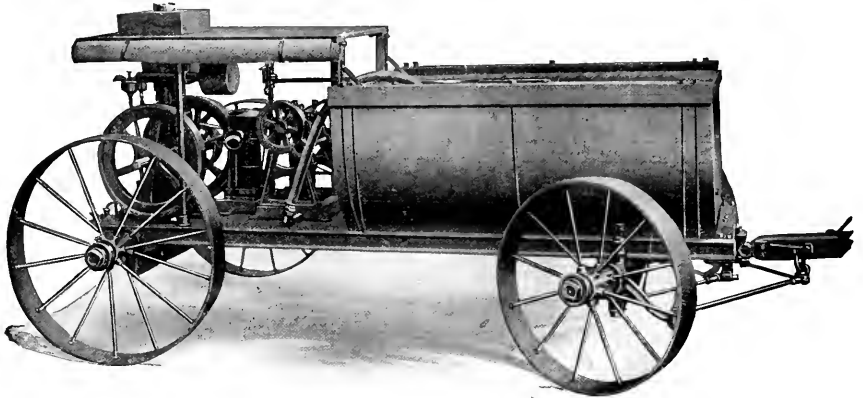
Bulletins Nos. 3 and 5 are valuable for all fruit growers and will be sent free on application.

General Chemical Company of California

Royal Insurance Building
SAN FRANCISCO

The SURE WAY TO SUCCESS

in fruit raising is in producing the highest percentage of high class fruit to your entire crop.
No surer way to accomplish this can be had than by the purchase of



A Hardie Hillside Triplex

Side hills and bad soil conditions don't delay its high-pressure efficient work. A closely set orchard is not injured and can be sprayed with ease. There is no machine to be compared with it. Get our catalog giving details.

The Hardie Mfg. Co. 49 North Front St. Portland, Oregon

Leaf Notches A Guide to Variety of Apples

By L. M. Cox, Zillah, Washington.

HAVING grown a setting of Wine-saps till they began to bear—Ben Davis—I foolishly joined the crowd in laying all the blame on the nurseryman and advocating a law that would make it a penal offense to sell trees untrue to name. But it occurred to me that the nurseryman had the tree in his possession only one or two years, while the orchardist had it under closest supervision for four or five years before it came into bearing. I decided that if the grower would blame his own ignorance and then learn to know his own varieties, it would be a greater protection than any law, however drastic.

When I was a boy, there was an insect that so closely resembled a bumblebee that the only way I could tell the difference was to catch it.

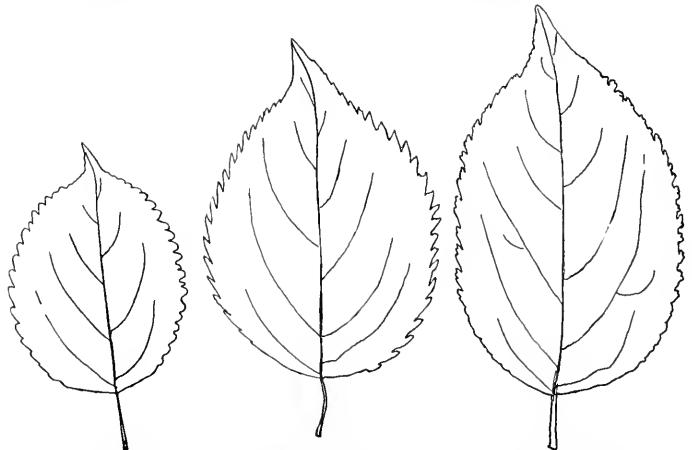
I determined to find some distinguishing characteristic of varieties that would obviate the necessity of getting "stung." I soon discovered that the notches on the edges of the leaves of certain varieties were very different. I continued the investigation until I was convinced that it was the best guide to variety I had learned. In the meantime I had set seven acres to Wine-saps with a question mark by each tree. I waited anxiously until the leaves were mature enough to be typical; I then took leaves from bearing Wine-

saps and went over the seven acres tree by tree, comparing the leaves known to be Wine-sap with the ones I hoped were. Result: In that block of five hundred sixty-seven trees I found sixty-three Ben Davis, thirty Stayman Wine-sap and four unknown. I might

extend this article indefinitely by giving descriptions and drawings of leaves from different varieties, but think the ones given below will be adequate to my purpose.

I want to emphasize that each orchardist can learn and must learn to know all the varieties he is growing or expects to grow. Those who may use this test are reminded that I have called

ILLUSTRATIONS FOR LEAF NOTCHES A GUIDE TO VARIETY OF APPLES



No. 1—Winesap

No. 2—Stayman Winesap

No. 3—Winter Banana

it only a guide, and not an infallible one. It will not enable you to distinguish between a Ben Davis, Black Ben and a Gano. Neither will the notches alone enable one to tell a Stayman Winesap from a Mammoth Black Twig or an Arkansas Black, but the white underside of the Stayman leaf distinguishes it from the others, and the leaf of the Arkansas Black is thinner than either of the three.

In applying this test, use large, vigorous leaves from the bearing trees, as they furnish a better comparison with the large leaves of the young trees. Don't ignore other excellent tests, rather let this supplement them. The grower who does this should be able to determine the first season whether his trees are true to name. If there are any strays, they can be budded at small cost and one doesn't lose three or four years' growth of the tree.

I suggest that nurserymen co-operate with orchard men in the use of this guide. In their catalogs, along with description of the tree and fruit, let them picture a leaf typical of the variety, together with any other guide that will enable the orchardist to know, before bearing age, that his trees are true to name. If he will apply this test to his trees in the nursery row, he can eliminate all the strays and be doubly sure he is selling the grower what he calls for. I believe that with a leaf typical of the variety in hand, anyone at all familiar with varieties could inspect fifty thousand trees per day unless they were a hodge-podge of everything in the catalog. If the nurseryman will so co-operate, it will be a great help; but ultimately it is up to each orchardist whether he goes on catching bumblebees.

HURST SPRAYERS

The Famous Quality Line

The result of 28 years' practical experience in building sprayers. Hurst Sprayers have stood the test of time and stand today head and shoulders above all competition. The big success of the Hurst line can be summed up in one word "Simplicity." Every Hurst Sprayer is a marvel of simplicity. No unnecessary parts to cause trouble and annoyance. Combined with simplicity they have the greatest convenience and utility.

32 Different Styles

A quality sprayer for every known need. Man, horse and gasoline engine power. Various sizes and styles of power sprayers, with and without engines. The Acme, shown below, is an exceedingly popular machine with the Western grower



This Book FREE

Get Our Big FREE Book

This book should be in the hands of every fruit grower and farmer. Used as a class book in many of the Agricultural Schools. Contains 74 illustrations and descriptions of insect and fungus pests and gives the remedy for each. Shows our complete line of sprayers.

Write the Royer Implement Company, of Portland, Oregon, or us for a copy of this free book at once.

Live dealers wanted everywhere.



The H. L. Hurst Mfg. Co. 8230 North St. Canton, Ohio

For Scale, Insects and all Fungus Diseases that can be controlled in the dormant season use

Diamond Dry Sprra-Sulphur 99.8% Soluble

Active ingredients more than 60% Soluble Sulphur.

Spra-Sulphur is a dry granular compound that quickly dissolves in hot or cold water.

Stays in solution; no sediment to clog or ent nozzle.

Costless; does better work; saves freight.



Contains NO free alkali. No caustic soda.

Spra-Sulphur is manufactured under the original Hite patents filed in 1910 and recently revised, giving exclusive right to the use of all fixed alkalis such as sodium carbonate and similar compounds, with sulphur in the manufacture of spray materials.

PRICES	{ 1 lb. 20c	10 lbs. \$1.25	50 lbs. \$4.00
	{ 5 lbs. 75c	25 lbs. \$2.50	100 lbs. \$7.50

Your Copy of the Annual Catalog and Spray Book is now ready. Ask for Catalog No. 204.

"How to Spray, When to Spray, What Sprayer to Use" is a splendid book that tells all about Goulds' Spray Pumps. Gould's Spray Pumps will give and maintain the necessary pressure to spray right and are built for lasting service.

Portland Seed Company
Portland, Oregon



One Man With A
Kirstin
Stump Puller

Can Clear Your Land

Six speeds for all purposes, six powers for all stumps. Chain and cable models from \$37.00 up, complete. Get my catalogue and limited time prices now.

Write to A. J. KIRSTIN CO.
3 Commercial St., Salem, Ore.
(Eastern Offices, Escanaba, Mich.)

LIVE AGENTS WANTED EVERYWHERE. APPLY NOW.

LIFETIME GUARANTEE

Established 1898

W.P. KRANER & CO.

Importers and Tailors

2nd Floor Couch Bldg.
109 Fourth Street
Portland, Ore.

GEO. E. KRAMER C. W. STOSE



A Blue Ribbon Winner

The Western Electric Rural Telephone—built by the manufacturers of all the 8,500,000 Bell telephones—is the standard for country service. It is in constant use by thousands of successful farmers who testify to its quality. Look it over, part by part, and you will quickly see why a

Western Electric Rural Telephone

gives perfect satisfaction at every hour—day or night—under all conditions. It always carries the voice full-toned and distinct.

Before any new telephone equipment is placed in your home, it will pay you to write for new illustrated booklet on rural telephones. Ask for Book No. 145.

WESTERN ELECTRIC COMPANY

PACIFIC HOUSES:

San Francisco
Seattle

Oakland
Portland

Los Angeles
Salt Lake City

EQUIPMENT FOR EVERY ELECTRICAL NEED

Producers and Distributors Reach Agreement

[From the Post-Intelligencer, Seattle, Washington]

FRUIT GROWERS of Washington, Idaho, Oregon and Montana and sales agencies representing a total tonnage of 15,000 cars of apples enthusiastically endorsed the program outlined by the by-products committee for the organization of the apple industry and in the afternoon indulged in a heart-to-heart talk which augurs well for the future of the apple industry of the Northwest. The enthusiasm of the 200 or more delegates knew no bounds when it was announced that the leading fruit distributing agencies of the Northwest had signed an agreement to

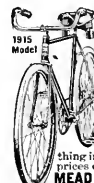
recognize and abide by the rulings of the governing board to be established.

This central governing body will consist of three members. It will supervise the entire apple industry of the Northwest, assist in the expansion of the market, maintenance of prices and prevent any demoralization of the market by underselling or injudicious consignments.

The agreement which created so much enthusiasm was read by ex-Senator W. H. Paulhamus, chairman of the by-products committee, who explained it in detail. All of the distributing agen-

cies signed it unconditionally with the exception of the Northwestern Fruit Exchange, which reserved the right to refer the question to the growers' local units whose fruit it handles. The agreement follows:

"Wishing to express their complete accord with any movement designed to promote the marketing of the North Pacific fruits, the undersigned selling agencies or distributors do hereby agree: That in case the growers of the four Northwestern states representing in districts and through the affiliated agencies 75 per cent of the total tonnage, form a central governing board for the purpose of regulating the marketing of their products in order to get the best distribution and to prevent the demoralization of prices, that we will, should we be so requested, join with the said governing board in studying the crop and marketing conditions with a view to helping the growers to estimate the marketing value of their products, and will furnish to said governing board at the close of each day's business, and sooner in special cases, copies of all quotations, sales reports, sales records, sales returns, inspector's reports, and all letters, telegrams and conversations that have a direct bearing on the selling of the fruit. We further agree that, if requested by the growers so to do, we will remit to such central governing board not to exceed one-half cent per box on all apples and pears, and one-quarter cent per box on all of the small fruits that we may market, when the returns are received and made, this amount being deducted as a charge in making settlement for the fruit. This agreement is signed with the express understanding that it is merely a declaration of policy, and that changes and additions will have to be made as found necessary in evolving a full working agreement so as to insure success among the parties at interest. Yakima County Horticultural Association, by W. M. Nelson; Richey & Gilbert Company, by H. M. Gilbert, president; Wenatchee Produce Company, by Conrad Rose; Wenatchee Fruit Growers' Association, by W. T. Clark; J. MacPhee Ferguson; J. E. Shannon; Spokane Valley Growers' Union, by Edward Pierce; North Pacific Fruit Distributors, by H. F. Davidson, president; J. H. Robbins, general manager; Northwestern



30 DAYS FREE TRIAL

and *frank prepaid* on the new 1915 "RANGER" bicycle. Write at once for our big catalog and special offer.

Marvelous improvements. Extraordinary values in our 1915 price offers. You cannot afford to buy without getting our latest propositions. WRITE TODAY. Boys, be a "Rider Agent" and make big money taking orders for bicycles and supplies. Get our *liberal terms* on a sample to introduce the new "RANGER" TIRES, equipment, and *more* and everything in the bicycle line *half* usual prices. Factory prices on Motorcycle and Automobile Supplies.

MEAD CYCLE CO., DEPT. S-269, CHICAGO



America's Pioneer Dog Remedies

BOOK ON DOG DISEASES

And How to Feed

Mailed free to any address by the Author
H. CLAY GLOVER, V. S.
118 West 31st Street, New York

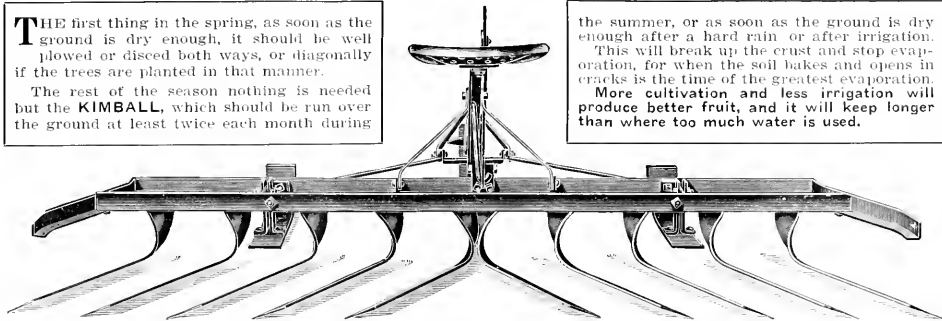
How to Use the Kimball Cultivator to Keep Your Orchard in Perfect Condition

THE first thing in the spring, as soon as the ground is dry enough, it should be well plowed or disced both ways, or diagonally if the trees are planted in that manner.

The rest of the season nothing is needed but the **KIMBALL**, which should be run over the ground at least twice each month during

the summer, or as soon as the ground is dry enough after a hard rain or after irrigation.

This will break up the crust and stop evaporation, for when the soil cracks and opens in cracks is the time of the greatest evaporation. **More cultivation and less irrigation will produce better fruit, and it will keep longer than where too much water is used.**



It is now for fruit growers to be thinking of how they can keep their orchards in good shape at the least possible expense.

For this work there is nothing that will equal the Kimball Cultivator.

While we know the fruit market is bad, we also know it will not always be in this condition, and the grower who neglects to cultivate his orchard at this time will lose the years of labor he has already put in on it, for an orchard that is not cultivated is soon a total loss.

Therefore get a Kimball and continue the good work.

MANUFACTURED BY

W. A. JOHNSTON, The Dalles, Oregon

Fruit Exchange, by Reginald H. Parsons, president, W. F. Gwin, general manager; Wright Fruit Company, by J. Howard Wright; Pomona Ranch, by J. L. Dumas; Arcadia Valley Fruit Growers' Association, by A. R. Craig, manager."

The conference decided to perpetuate the present committee under the name of the Northwest Horticultural Committee, until such time as the governing board shall have been organized, and levied an assessment of 10 cents per carload on each of the districts to defray the expenses of the committee. The delegates turned down a resolution asking that they endorse the present horticultural bill now before the State Legislature, holding that inasmuch as they were a body made up of men from several states their endorsement would be injudicious.

Orchard Yarn

Progressive orchardists, those right down to the minute in methods of protecting heavy laden fruit trees, are advised that Yarn branches with Orchard Yarn is the modern way of supporting orchard trees. It is not expensive, is easily done, and the time to tie is when trimming. The spurs are then tougher, less easily broken off than later, leaves are not in the way and all parts of the tree can be seen. Saving but a small percentage of trees from being broken down will pay for the expense of tying an entire orchard. One-ply Tarred Manila Yarn will run about 200 feet per pound. Two-ply will run from 90 to 100 feet per pound. Put up in 5-pound balls or in 10-pound spools. In 5-pound balls the yarn pulls from the inside and is more easily handled.

Sold by all merchants handling orchard supplies.

Manufactured by

The Portland Cordage Company
PORTLAND, OREGON

A resolution presented by T. H. Atkinson, of Entiat, saying that "it is the sense of this gathering to request the selling agencies to get together and work out a solution of their problems until such time as the growers' organizations have been formed," was passed unanimously. This was for the purpose of permitting the selling agencies to so arrange their affairs that they could give full reports and data to the central board when it is organized.

As a result of the two-day conference held in the assembly hall of the Chamber of Commerce, and which adjourned with a banquet in the Hotel Butler, the apple industry of the Northwest seems in a fair way to become efficiently organized. A decided sentiment has been created by prevailing trade conditions in favor of a united action on the part of the fruit growers, and none of the apple districts of any of the four states has ventured to stay without the pale of the new idea. One of the speakers expressed the feeling of the growers when he said: "Unanimity between growers, which seemed impossible, has been made possible because we realize how foolish we have been in trying to compete with one another." Each grower present at the conference pledged himself to go home and call a meeting of all of the growers of his district for the purpose of perfecting an organization. Three delegates at large and one delegate for each 250 cars shipped annually will be permitted each district. These delegates will

make up the general council of the growers, which will, in turn, choose three men to act as the governing board.

The districts entitled to three delegates each and others in proportion to their output are as follows: Hood River, Walla Walla, Milton, Dayton and adjacent points; Southern Idaho; Spokane, Moscow, Gardfield and adjacent points; Wenatchee, Cashmere and up-river points; entire Yakima Valley from Kennewick up; Western Oregon, and the State of Montana.

Chairman Paulhamus explained that the session was exclusively for bona fide growers and that no marketing heads would be admitted. Howard Wright, of North Yakima, outlined a plan for the formation of a growers' organization independent of the selling agencies. He proposed that a council or advisory board shall receive daily reports from

Position as Superintendent

Of large orchard, by thoroughly competent nursery and orchard man; or would consider well equipped orchard on part share basis; 25 years' experience and best references. Address "R," care "Better Fruit."

WANTED

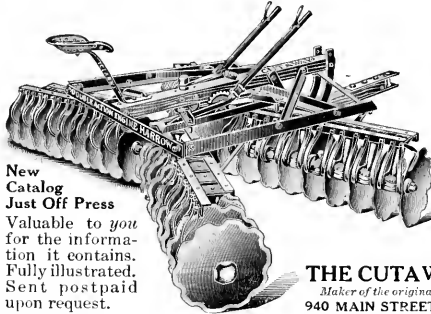
Experienced orchard man with executive ability, for Virginia. State terms, references, Turkey Knob Orchard, 753 Broadway, New York City.

Have You a Tractor?

If you have a tractor, or if you are going to buy one, remember that the success and economy with which it is operated depends very largely upon the machines to which it is hitched.

The **Cutaway** Engine Harrow
Has-made-good was the first harrow built especially for engine power.

D. A. Engine Harrow
It is heavy and strong throughout. The rigid main frame is made of heavy angles and is stoutly braced with angles. The disks are extra heavy cutlery steel, rolled to our own analysis and forged sharp. The bearings are dust-proof oil-soaked hardwood, perfectly lubricated. The hitch is adjustable to any tractor. The rigid main frame and axle draft rods distribute the pull uniformly over the entire machine.



New Catalog Just Off Press
Valuable to you for the information it contains. Fully illustrated. Sent postpaid upon request.

THE CUTAWAY HARROW CO.
Maker of the original CLARK disk harrows and plows
940 MAIN STREET HIGGANUM, CONN.

Ask your dealer about the CUTAWAY (CLARK) Double Action Engine Harrow. If he doesn't sell CUTAWAY (CLARK) tools, write us at once. We ship direct where we have no agents.

DEPENDABLE BRAND

Lime Sulphur Solution

The Standard Solution for
The Fruit Growers of the Northwest

Highest percentage of Sulphur in Solution in proportion to Baume test of any brand offered on this market.

MANUFACTURED BY
GIDEON STOLZ CO., Salem, Oregon

FREE Book **FOR** **RHUBARB Culture**
WRITE FOR IT TODAY —

Now is the Best Time to PLANT
RHUBARB, BERRIES and Small Fruit
If planted now you should derive good results

J. B. WAGNER - Pasadena, Cal.
The Rhubarb - Berry & Cactus Specialist.

RHUBARB GROWING
BERRIES - SMALL FRUIT
CACTUS
J. B. Wagner
Pasadena, Cal.

the selling agencies, giving amount and price of sales. Whenever any agency sells unreasonably low, it would be advised.

The committee report adopted by the growers yesterday creates six districts, from which delegates will be chosen to make up the growers' council. These districts are as follows: Hood River and adjacent shipping points; Walla Walla, Milton, Dayton and adjacent points; Southern Idaho; Spokane, Moscow, Garfield and adjacent points; Wenatchee, Cashmere and all up-river points; entire Yakima Valley from Kennewick up; Western Oregon, and the State of Montana. "In creating these arbitrary districts this convention realizes that it is merely providing a framework," recited the committee report, "but it would recommend in the selection of the first growers' council under

the provisions of this call that the members of the council from each district be as nearly as possible from the principal shipping points in that district in proportion to the tonnage of each, in order that every part of each district may be represented in the growers' council."

The election of delegates in each case shall be made from properly called conventions, and no salaried employes of existing marketing agencies shall be entitled to membership in the growers' council. The by-products committee, of which W. H. Paulhamus of Pierce County is chairman, is asked to supervise and assist in the calling of the first Northwest Growers' Council.

The members of the by-products committee are: W. H. Paulhamus, chairman, Puyallup; Truman Butler, Hood River; Gordon C. Corbaley, Spokane; M. J.

Higley, Payette, Idaho; J. L. Hughes, North Yakima; Conrad Rose, Wenatchee; H. M. Sloan, Florence, Montana; D. A. Snyder, Dayton, Oregon; Paul H. Weyrauch, Walla Walla, and J. O. Holt, Eugene, Oregon. Mr. Holt was the only member of the committee who was not present.

The delegates present were: W. A. Doyle, Kettle Falls; E. N. Robinson, Deer Park; F. E. Williams, Opportunity; C. B. Sawyer, Spokane; C. H. Furman, Zillah; Fred Farmer, North Yakima; F. F. W. Jackson, North Yakima; Dr. F. F. Gray, North Yakima; Austin Woodyard, Sunnyside; Harry Jones, Wapato; Arthur Karr, North Yakima; L. D. Humphrey, North Yakima; J. E. Shannon, North Yakima; J. Howard Wright, North Yakima; T. F. Roddy, Wenatchee; T. H. Atkinson, Entiat; J. D. Parkhill, Wenatchee; Clifford Chase, Okanogan; George Hauber, Leavenworth; E. C. Long, Cashmere; H. P. Johnson, Wenatchee; E. Allender, Okanogan; Frank Reeves, Wenatchee; R. P. Ballard, Husum; John Langdon, Walla Walla; E. C. Burlingame, Walla Walla; J. L. Dumas, Dayton; J. D. Taggard, Dayton; J. F. Slover, Milton; A. C. Denny, Milton; H. C. Taylor, Cashmere; F. H. Freeze, Cashmere; R. H.

Clover Seed

We handle more clover seed than any dealer on the Coast and can fill any sized order promptly. Prices are always the lowest on the best grades of seed.

Vetch Seed

This is a specialty with us and we are in a position to make the lowest market prices. Also, a complete stock of Seed Grain, Farm and Field Seeds, Garden Seeds, etc. Send us a list of what you are going to need for our prices.

Catalogue free.

D. A. White & Sons
SALEM, OREGON

Steam Pressure Canning Outfits

Can your Fruits, Vegetables, Corn, Meats, Fish, etc., for home use and for sale at a big profit. Outfit more than pays for itself the first year. Eleven different sizes. Book of Canning Recipes free with outfit. Tells how to can everything. Write for Catalogue B.

Built by
HENNINGER & AYES MFG. CO.
47 First Street
PORTLAND, OREGON

ELASTIC PRUNING PAINT

SAVES TREES ALL KINDS
FRUIT GROWERS' SUPPLIES

Send for Free Catalogue
Western Distributing Agents for the
Cutaway (Clark) Orchard and Farm Harrows
E. G. MENDENHALL

Box BF Kimmunity, Illinois

Lang, Monitor; J. B. Ferguson, Wine-sap; I. L. Hooper, Nachez; C. S. La Farge, Wenatchee; E. W. Ross, North Yakima; N. G. Craig, Deer Lodge; G. W. Eastman, North Yakima; F. H. Madden, Medford; F. C. Kaylor, Bellingham; George E. Starr, Pateros; C. H. Chapman, Wenatchee; H. W. McDonald, North Yakima; L. W. Rhodrick, Wenatchee; B. M. Chapman, Cashmere; R. L. Bartlett, Wenatchee; L. P. Beecher, Peshastin; Miss Dorothy Jackson, North Yakima; A. E. Braggins, Cashmere; N. D. Mackay, White Bluff; W. E. Stone, Wenatchee; C. H. Curtis, Parker Heights; E. W. Berge, Hood River; Z. M. Headlee, Kennewick; W. W. Sawyer, Sunnyside; J. A. Pilard, Wapato; Mrs. Nettie E. Thorne, Hood River; L. Brewster, Cashmere; J. A. Marman, Peshastin; A. G. Melby, Wenatchee; W. J. Potts, Okanogan; C. G. Austin, North Yakima; E. H. Shepard, Hood River; O. B. Nye, Hood River; A. F. Bickford, Hood River; Oscar Vanderbilt, Hood River; E. E. Stanton, Hood River; A. D. Moe, Hood River; A. L. Mason, Hood River; D. H. Thorne, Hood River.

The heads of the selling agencies who will discuss the proposed apple union with the by-products committee are W. F. Gwin and R. H. Parsons, of the Northwestern Fruit Exchange; J. H. Robbins and H. F. Davidson, of the North Pacific Fruit Distributors; Conrad Rose, of the Wenatchee Produce Company; W. T. Clark, of the Wenatchee Valley Fruit Growers' Association; H. M. Gilbert, of Ritchie & Gilbert, Toppenish; H. M. Nelson and E. E. Sampson, of the Horticultural Union, North Yakima. These firms handle 85% of the Northwest apple tonnage.

Buy It Now

Buy it now. Get what you will need in the spring now and help pass prosperity along.

Buy it now. Don't buy what you don't need, but buy what you do need now. It will put thousands of idle men at work who are suffering this winter.

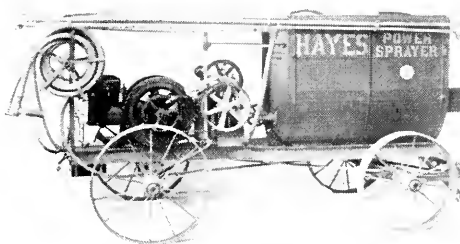
Buy it now. The suffering of thousands of families this winter will be stopped if we farmers will buy now instead of waiting till spring.

Buy it now. We farmers can bring back prosperity at once by buying our spring needs now instead of waiting.

Buy it now. If the farmers will buy their spring needs now it will start up factories during the winter when work is most needed.

Buy it now. There is 40,000,000 farm population in the United States. Their 1914 crop is worth \$9,872,936,000. If only ten dollars were spent for each person on the farm now instead of waiting till spring, it would put \$400,000,000 into circulation and give employment to thousands whose families are suffering where factories are idle.

C. E. Whittens Nursery of Bridgman, Michigan, is mailing out its 1915 catalog, "Strawberry Plants That Grow," which is very interesting.



**100%
SPRAYING**

**300 POUNDS
PRESSURE
GUARANTEED**

HIGH PRESSURE spraying is 100% efficient. The more thorough the spraying operation the greater is the **PROFIT** from the crop.

300 lbs. pressure completely atomizes the solution into a penetrating fog-like mist that *seeks out* and *adheres* to every particle of foliage. Less solution is required, less time to apply, hence lessened cost, besides, a better quality and larger quantity of salable fruit.

All **Hayes** Power Sprayers are *guaranteed* to maintain 300 lbs. pressure.

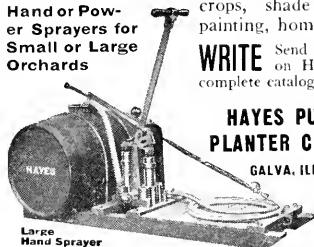
**Hand & Power
Hayes SPRAYERS**

**25 STYLES—
Hand or Power
Sprayers for
Small or Large
Orchards**

We make sprayers for orchards, field crops, shade trees, hops, poultry, painting, home and garden use.

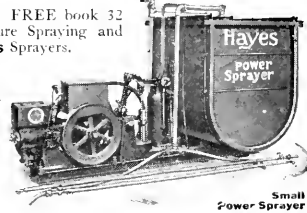
**1 1/2 h. p.
100 Gallon Tank
300 Lbs. Pressure**

WRITE Send postal for **FREE** book 32 on High Pressure Spraying and complete catalog of **Hayes** Sprayers.



Large Hand Sprayer

**HAYES PUMP &
PLANTER COMPANY
GALVA, ILLINOIS**



Small Power Sprayer

One Barrel of "Scalecide"
Will Spray as many Trees as Three Barrels of Lime Sulfur

"Scalecide" has greater insecticidal effect on your orchard—kills more scale, eggs and larvae of insects with half the labor to apply. We can back up this statement with facts concerning the *Good Results from Using* **"SCALECIDE"**

Send for our illustrated booklet—"Proof of The Fading". Tells how "Scalecide" will positively destroy San Jose and Cottony Maple Scale, Pear Psylla, Leaf Roller, etc., without injury to the trees. Write today for this **FREE** book and also our booklet—"Spraying Simplified".

Our **Service Department** can furnish everything you need for the orchard at prices which save you money. Tell us your needs.

We are World Distributors for **VREELAND'S "ELECTRO" SPRAY CHEMICALS** and **Arsenate of Lead Powder** (33 per cent), which, used wet or dry, has no equal in strength or texture. Avoid imitations.

H. G. PRATT CO., Mfg. Chemists Dept. 50 Church Street, New York City

PORTLAND SEED COMPANY NORTHWESTERN AGENTS
Pratt's "Scalecide"
PORTLAND, OREGON ORDERS AND INQUIRIES WILL
HAVE PROMPT ATTENTION

LOOK! Mr. Fruit-Grower

One of your choice trees is **Dying!** Why? **Gophers?** Yes, it's one of those Pocket Gophers taking \$\$\$ out of your pocket. Protect your trees and save those \$\$\$ by using

THE CINCH POCKET GOPHER TRAP

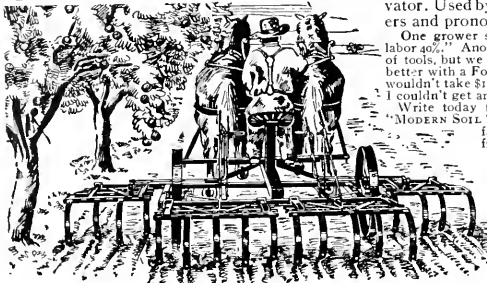
If set by the directions and with judgment it will get the gopher and you will get the returns from that tree and others. If your dealer doesn't have the traps, write us at once. Sample trap postpaid 85c.

Manufactured by **W. C. EMMERSON & CO., Forest Grove, Oregon**

FORKNER SPRING TOOTH TILLERS

WORK RIGHT UP TO YOUR TREES

Cultivate entire surface between rows without disturbing boughs or fruit. Does more work—easier and quicker—and leaves better surface mulch than any other cultivator. Used by thousands of fruit growers and pronounced **indispensable**.



One grower says: "The Forkner reduces labor 40%." Another says: "We have all kinds of tools, but we can do our work quicker and better with a Forkner." Still another says: "I wouldn't take \$750.00 for my Forkner Tiller if I couldn't get another."

Write today for catalog and free book—**"MODERN SOIL TILLAGE"**—invaluable to any farmer or fruit grower. Mailed free. Write today.

LIGHT DRAFT HARROW CO.

601 Nevada Street
Marshalltown, Iowa

Fruit Tree Stocks

Apple, French and Japan Pear, Mahaleb and Mazzard Cherry
Myrobalan Plum

Apple and Pear Grafts

Machine wrapped. Quality guaranteed. None better

Roses

Immense stock of hardy kinds

Ornamental Trees, Shrubs, Vines

Gooseberries, Currants, Raspberries, Blackberries

Large stock root cutting plants

MOUNT ARBOR NURSERIES

E. S. WELCH, Proprietor
138 Center Street SHENANDOAH, IOWA

A Complete Line of
High Quality Nursery Stock

Always pleased to quote your WANTS

"BLUE RIBBON"

(EXTRA FANCY)

"RED RIBBON"

(FANCY)

Famous Brands of Yakima Apples

Packed under our personal supervision
Get in touch with us by wire or letter

Yakima County Horticultural Union

E. E. SAMSON, Manager
NORTH YAKIMA, WASHINGTON

The Bean Spray Pump Company of San Jose, California, is putting on the market a spray outfit called the "Eureka, the One-Man Power Sprayer" at a very low cost. This outfit is intended for the small fruitgrower who does not care to purchase one of the big power outfits, or, on the other hand, for the grower who has too much of a job on his hands for the ordinary pump. We presume circulars illustrating and giving complete information about the Eureka can be obtained by writing the Bean Spray Pump Company, San Jose, California.

The Zimmerman Steel Company will move from Lone Tree, Iowa, to Davenport, Iowa, where they have erected a new building, which will give them increased facilities for manufacturing stump pullers, farm scales, steel castings and other things in their line. For this purpose they have purchased ten acres of land on which they are erecting a large steel foundry, offices, assembly building, etc., making one of the most complete plants of this kind in the United States.

The Times-Mirror Company of Los Angeles has issued its annual mid-winter number of the Los Angeles Times, which, by the way, is a splendid annual for portraying the beauty of California in a very attractive manner. Such an edition will be a strong factor in bringing people to the Pacific Coast to visit the San Diego Panama-California Exposition at San Diego, and also the Panama-Pacific International Exposition at San Francisco.

The Traug Lithograph Company of San Francisco has just issued one of the most practical calendars that has come to this office. This calendar is a large one, and on each sheet is a small calendar for last month and one for the next month in addition to the current month. It is beautiful and artistic, showing the splendid work done by this house in the label line.

The Hood River Apple Vinegar Company has issued a very attractive leaflet explaining the purity of their method in making cider and vinegar. This can be obtained by writing the company. Already a large demand has been built up for Hood River cider and vinegar, which is of the most excellent quality, made from clean stock and absolutely pure.

Chas. H. Lilly Company of Seattle and Portland has just issued a very attractive catalog embodying practically their full line of supplies of seeds, plants, flowers, nursery stock, fertilizer and sprays, including practically everything that the fruitgrower and farmer use in the way of supplies.

The General Chemical Company of San Francisco has issued a pamphlet with directions for using their sprays in Western orchards, which contains some very interesting reading matter.

COAST CULVERT AND FLUME COMPANY

Farmers' Lateral Metal Flumes

(Providing for Check or Furrow Irrigation)

Lateral Gates . Pressure and Drainage Pipe

Ash Cans, Smoke Stacks, Tanks

Troughs, etc.

Manufactured From "ARMCO" AMERICAN INGOT IRON
at Portland, Oregon

THE FAMOUS AETNA BRAND OF PURE LIME AND SULPHUR SOLUTION

Manufactured by an Orchardist of 25 Years' Practical Orchard Experience.

Extracts From Letters On File

W. K. Newell, President State Board of Horticulture, says: "I am using the Aetna Brand in my orchard and I am sure you are making a good article."

A. C. Goodrich, Commissioner First District. "I have used the Aetna and found every barrel fully up to test."

The Dalles, Oregon, July 16, 1914. "Results obtained from use of Aetna Brand are most satisfactory and I can heartily recommend its use." (Signed) R. H. Weher, Commissioner Fourth District.

H. C. Atwell, President Oregon State Horticultural Society: "I think there is no better Spray made."

S. J. Galloway, Fruit Inspector Washington County: "After very severe tests I found the 'Aetna' Brand O.K."

White Salmon Valley Fruit Growers' Union: "After using the 'Aetna' Brand we are justified in the belief that there is no superior on the market." (Signed) J. J. Cunger, Manager.

Use the "Aetna" Brand for best results. Failure is impossible if you spray right. We absolutely guarantee the "Aetna" Brand to be the best on the market. It costs no more to use the best.

For prices, etc., write

B. LEIS & SONS, The Aetna Orchards, Beaverton, Oregon

The Aetna Brand is not sold through Portland dealers.

PORTLAND, OREGON

PORTLAND HOTEL

The hotel which made Portland, Oregon, famous

Most Desirably Located. In the Center of Shopping and Theatre District
Covers a City Block

Broadway, Sixth, Morrison and Yamhill Streets

EUROPEAN PLAN—\$1.00 per day and upward

Write for Portland Hotel Booklet

G. J. Kaufmann, Manager

The Schmidt Lithograph Company of San Francisco are mailing to their customers and patrons very handsome calendars, with a convenient arrangement of three months on each page, making a very convenient calendar for ready reference. This calendar is beautifully done in colors, showing the splendid work done by this firm.

F. E. Myers & Bro., of Ashland, Ohio, have just issued their annual calendar, which is a large illustrated sheet of their line of pumps. A man would never realize there were so many different styles of pumps made by one concern until he looked over this sheet.

The Stark Bros. Nursery, Louisiana, Missouri, has issued the January edition of the "Stark Tree Talk," which as usual contains much interesting reading matter and considerable news.

HOW TO MAKE MONEY

in California on an investment of \$1,000.00 or less. I will tell you how to double your money yearly. Send 25c for book—ALFRED MITTING, Expert Horticulturist, 8 New Street, Santa Cruz, California.

Mr. Doeller, of the Simpson-Doeller Company, manufacturers of labels, made a visit to the Pacific Northwest in January to confer with their representative, Mr. E. Shelley Morgan, in reference to the label business for the coming year.

James A. Carter, an old seed house of London, England, some time ago opened a house in Boston, Massachusetts, and recently have opened a branch for Carter's tested seeds in the Arcade Building, Seattle, Washington.

The Mitchell Lewis Motor Company, Racine, Wisconsin, has issued a very handsome New Year card, which "Better Fruit" acknowledges with pleasure.

W. Alice Burpee Company, Philadelphia, again is putting out "Burpee's Annual for 1915," which contains much interesting matter about garden seeds.

GALLUPOLIS, OHIO, January 18, 1915.

Editor Better Fruit:

Please find enclosed check for \$3.50, covering advertising space and my renewal for subscription. I received an answer to my ad. in the next mail after receiving my copy of "Better Fruit," which I think is remarkable. Thanking you, I remain, yours truly,

B. L. ESOS.

The California Fruit News.—In October the California Fruit Grower changed its name to the California Fruit News. This is one of the oldest fruit journals in California, being now in its fiftieth volume. It was established in 1888 by Mr. Brainard L. Rowley, and is now published by his son, Mr. Howard C. Rowley, a man of splendid ability and extremely popular with everyone connected with the fruit industry in the State of California. Inasmuch as the Fruit News is devoted almost entirely to general information, publishing very little about growing fruit, the name seems to fit the publication better than the old one. The California Fruit News is devoted extensively to giving news about the fruit industry that would be a benefit to the fruitgrower and fruit dealer. It is a splendid publication.

Fruit growers and farmers in the past have suffered to some extent by getting impure seeds or sterile seeds. Seed houses, realizing the loss from such poor stock, are endeavoring to supply the trade with pure seeds.

Doubleday, Page & Co., Garden City, New York, have issued a Garden Almanac, containing valuable and instructive reading matter for the farmer, gardener and orchardist.

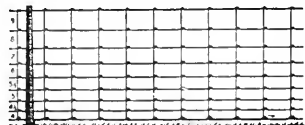
Ino. A. Dreer of Philadelphia has issued a very interesting catalog, "Dreer's Annual."

Dow Arsenate of Lead

It has been shown in experimental tests the past season in sections where codling moth have been severe that Dow Arsenate of Lead is superior for controlling this pest. The reason—it contains no grit and is a much finer divided article—hence possesses a better covering power. Adopted by the State of Massachusetts for the third successive season for their gypsy and brown-tail moth work.

The Dow Chemical Company
Midland, Michigan

DIRECT TO CONSUMER



39-INCH FENCE 28 CENTS
A ROD
Made of high-grade galvanized wire. Write for catalog and prices.
NATIONAL FENCE COMPANY
Columbia and Water Sts. PORTLAND, ORE.

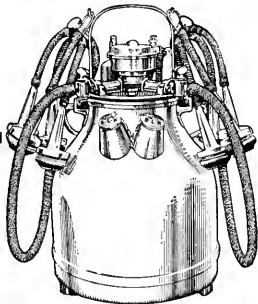


How much to build?

Now's the time to buy lumber. H-L-F prices on lumber, *divert to you*, lower than ever, now. No time like winter for easy hauling. Roads good—time plentiful. Get our price now on house or barn lumber.

Send bill of materials for low winter price. We pay the freight. Guarantee grades, color, satisfaction. If you haven't material list, send for H-L-F House Prices—it's free. Answer a few questions. Get our guaranteed prices. Write today.

Hewitt-Lea-Funk Co.
610 Terry Bldg., Seattle, Wash.
Capital \$1000,000 Not in any Trust or Combine



The Human Milking Machine

This wonderful machine has ended milking drudgery on hundreds of ranches in the Northwest.

Successfully takes the place of the human hand in milking. The only machine with automatic release, like the pressure of the hand. Absolutely no ill effects to teats or udders. Increased milk yield. Any man can milk from 25 to 30 cows an hour with this machine.

WRITE TODAY for FREE BOOK telling all about this wonderful Milker. Also letters from Oregon ranchers using the H-L-K.

Monroe & Crissel
"Everything for the Modern Dairyman."
124 Front Street, Portland, Oregon.

MAIL THIS COUPON

Name

Address

Number of cows

THE QUESTION OF THE DAY

With the fruit grower is, how can he derive a revenue from his overripe and unsalable fruits?

It can be done. It is being done. How? By the use of the new and up-to-date process of

DEHYDRATING

Which is the cheapest, quickest and best process ever devised for preserving fruit without changing the taste or flavor is clean and sanitary. There is always a market for this product. Can be operated by anyone. Capacity to meet all requirements.

For descriptive booklet address

Luther Vacu-Dehydrator Co.
1242 TAYLOR ST., SAN FRANCISCO, CAL.

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

The W. F. Allen Company of Salisbury, Maryland, has issued an exceedingly attractive catalog containing some very handsome illustrations of strawberries, of which they make a specialty. This catalog will be mailed free upon request.

Gill Bros. Seed Company, of Portland, have just sent out their catalog for 1915, which is a very neat publication, containing a number of vegetable seeds grown in Oregon, of which they make a specialty.

The Luther Burbank Company, Burbank Building, San Francisco, has issued a very handsome catalog, which contains many illustrations of Burbank's famous specialties.

Hogs in Connection With Fruit

A great many fruitgrowers are raising hogs in connection with their orcharding, which is a splendid idea. All orchards require cover crops in order to maintain humus and nitrogen in the soils, and clover and alfalfa make fine feed for hogs. A great many of the farm publications run stock columns which contain good information about hog raising. There is one excellent publication devoted to hog raising published in Chicago, Illinois. It is the American Swineherd, well worth every fruitgrower's subscription who is engaged or expects to engage in the hog industry. "Better Fruit" offers a clubbing list for the American Swineherd and "Better Fruit" for \$1.25.

Dairying and the Orchard

The year 1914 accentuates the importance of diversity for the fruit grower. It always has been and always will be true that occasionally fruit prices will be low; then if the fruit grower has some other product selling at fair prices his financial condition is comfortable. There is another reason for diversity, and that is that the fruit crop brings in money only once a year, therefore the fruit grower ought to have side lines that bring in money at other times. One of the most popular diversity lines with fruit growers is dairying, because it pays a good profit, brings in steady money and fits in with the orchard business without interference. Every orchard needs cover cropping to maintain the humus content and nitrogen supply. Alfalfa and clover are ideal crops for this purpose and make the best kind of feed for cows. Already some orchard districts have established co-operative creameries. Fruit growers are progressive people and therefore are going at dairying in an intelligent way, buying the best productive, high grade cows, establishing cream routes, putting in sanitary equipment, cream separators, and will follow with milking machines where the herd is large enough. Therefore we look forward to the orchardist becoming a successful dairymen and improving his financial condition, increasing his income, which can be done at a small expense, as he already has the land and water to grow the feed.

OUR SPLENDID CLUBBING OFFER

"Better Fruit" offers to its readers one of the finest lists of clubbing offers ever placed before the public. These rates do not apply to Canada, owing to extra postage.

Review of Reviews.....\$3.00
Everybody's.....1.50
Better Fruit.....1.00
Total.....\$5.50
All for.....3.60

World's Work.....\$3.00
Scribner's.....3.00
Better Fruit.....1.00
Total.....\$7.00
All for.....5.25

Outlook.....\$3.00
Ladies' Home Journal.....1.50
Better Fruit.....1.00
Total.....\$5.50
All for.....4.90

Woman's Home Companion.....\$1.50
World's Work.....3.00
Better Fruit.....1.00
Total.....\$5.50
All for.....3.95

Fruit and Produce Distributor.....\$2.00
Better Fruit.....1.00
Total.....\$3.00
Both for.....2.00

Delineator.....\$1.50
Everybody's.....1.50
Better Fruit.....1.00
Total.....\$4.00
All for.....3.10

Harper's Magazine.....\$4.00
Good Housekeeping.....1.50
Better Fruit.....1.00
Total.....\$6.50
All for.....5.45

Gleanings in Bee Culture.....\$1.00
Good Housekeeping.....1.50
Better Fruit.....1.00
Total.....\$3.50
All for.....2.65

Ladies' World.....\$1.00
Modern Priscilla.....1.00
Pictorial Review.....1.00
Better Fruit.....1.00
Total.....\$4.00
All for.....2.50

Today's.....\$0.50
Ladies' World.....1.00
McCall's......50
Better Fruit.....1.00
Total.....\$3.00
All for.....2.00

Pacific Homestead.....\$1.00
American.....1.50
Better Fruit.....1.00
Total.....\$3.50
All for.....2.50

Northwest Poultry Journal.....\$0.50
Good Housekeeping.....1.50
Everybody's.....1.50
Better Fruit.....1.00
Total.....\$4.50
All for.....3.60

Oregon Agriculturist.....\$1.00
Northwest Poultry Journal......50
Better Fruit.....1.00
Total.....\$2.50
All for.....1.85

Hoar's Dairymen.....\$2.00
Woman's Home Companion.....1.50
Better Fruit.....1.00
Total.....\$4.50
All for.....3.15

Western Farmer.....\$1.00
Northwest Poultry Journal......50
American Bee Journal.....1.00
Better Fruit.....1.00
Total.....\$3.50
All for.....2.35

Through lack of space we are unable to give a more extended clubbing list. Rates on all magazines will be given to any of our subscribers by writing "Better Fruit."

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

Bolton Orchard Heaters

27 Cents Each

WE PAY THE FREIGHT

Capacity:

2 Gallons.

Delivery:

We manufacture in San Francisco, California, and can make prompt shipment.



Burning Time:

10 Hours.

In 1910 and 1911 we sold 250,000 Bolton Orchard Heaters in Oregon and Washington and every grower saved his crop.

Important Information

Deciduous fruit growers do not need anything larger than a two-gallon heater with the proper burning time. A larger heater produces no more heat. We introduced the first orchard heater in Oregon and Washington and we have always advocated a large number of small fires to the acre to give good protection.

The Frost Prevention Company

Merchants National Bank Building

San Francisco, Cal.

WE MAKE A SPECIALTY OF

Catalogs, Booklets and Circulars

FOR

Nurserymen, Fruit Growers, Manufacturers and Selling Agents

Write us for specifications and information. Quality and Service

F. W. BALTES AND COMPANY

Fine Printing PORTLAND, OREGON

Spraying and Pruning to Combat Powdery Mildew

(Office of Information, United States Department of Agriculture.)

AS a result of experiments in the Pajaro Valley of California the United States Department of Agriculture is recommending certain spraying and pruning treatments to combat the powdery mildew, an apple disease that seriously menaces the apple industry west of the Rocky Mountains. The powdery mildew occurs occasionally at least in nearly all parts of the United States. It is only in the West, however, that it has done any considerable damage, particularly in the Pajaro Valley, where the annual output of apples is about 3,500 carloads of packed fruit.

A new bulletin entitled, "Apple Powdery Mildew and Its Control in

the Pajaro Valley," outlines three distinct phases of control method as follows: (1) Foliage spraying with iron-sulphid mixture, precipitated sulphur, or sulphur in some other very finely divided form. (2) Winter pruning of trees—(a) for the purpose of obtaining the general stimulating effects that come from pruning at that time, and (b) directed particularly toward the eradication of mildew twigs. (3) Winter spraying with some spray that has the effect of inducing a vigorous foliage growth in the spring.

The practice of careful and thorough summer spraying year after year will gradually bring about a much-improved condition of the trees, but for the best

results the entire method, as outlined above, must be followed. This advice as it stands is intended only for the Pajaro Valley section, but the recommendations, it is believed, may be varied slightly to suit the requirements of other apple-growing districts in which the disease has become sufficiently prevalent to require attention. In some sections, for instance, summer spraying alone may provide a satisfactory control of the disease. In using sulphur great care must be exercised to prevent such an over-application as to burn the fruit. The bulletin is very explicit in its directions as to the use of sulphur. Growers in the Pajaro Valley and other districts affected by the mildew should obtain the publication before using the methods outlined above.

It seems probable that a cool, foggy climate makes apple foliage more susceptible to powdery mildew. The fog moisture also tends to dissolve such sprays as may be used, so that spray materials must be more carefully applied. Where the foliage is frequently subjected to washing rains the injurious substances from the spray materials are washed off, but in the Pajaro Valley the fog dissolves the substances and the leaves absorb the destructive elements which injure the foliage. This has been especially noticeable in the case of arsenic and paris

FEATHERWEIGHT Spray Nozzle and Rod

Best, Lightest, Cheapest



Size of Nozzle

Invented by a fruit grower of 15 years experience in spraying.

No tired arms from handling it; a pleasure instead of a burden to carry. You will like it and praise it to your neighbors. Nozzle from 2 to 30 times lighter than other nozzles; rod from 2 to 4 times lighter than other rods.

\$1.00 for Nozzle and Elbow

\$1.75 for Rod

Your money back if it is not satisfactory.

F. P. FRIDAY
HOOD RIVER, OREGON

Store Your Apples in Spokane

The Natural Storage Center

Take advantage of storage in transit rate and the better market later. Write us for our dry and cold storage rate and information.

Ryan & Newton Company

SPOKANE, WASHINGTON

The New Agriculture

WRITE FOR THIS FREE BOOK

FOR

2,000 years most farmers have cultivated only 6 to 8 inches of soil. They have spent millions of dollars adding to these 6 inch farms plant foods, such as potash, phosphorus and lime, that already lay in the subsoil waiting to be made available.

VERTICAL FARMING

makes available tons per acre of new plant food, ensures abundant moisture and largely increases crop yields.

DR. G. E. BAILEY

Geologist at the University of Southern California, has prepared a reading course of instruction in soils and vertical farming. We have printed it in a well illustrated book. It will be mailed

FREE ON REQUEST

to anyone owning a farm in the United States. Get this book about soils. Work your farm to its full capacity. Know your land. Learn its composition. Use the fertilizers nature is storing beneath your 6-inch farms. Send a postal request today for Vertical Farming Booklet 338-F. Be sure to state the acreage of the farm you own.



Du Pont Powder Co.

Pioneer Powder Makers of America

Established 1802

WILMINGTON, DELAWARE

Printing Point Does Not Bob Up and Down

CENTER AT WHICH THE TYPE IS DIRECTED IS AT REST WHEN IMPRESSION IS MADE



Ball Bearing; Long Wearing

In an **L. C. Smith & Bros. Typewriter** the spot on the paper which is to receive the type impression is stationary at the instant the type hits. The carriage does not bob up and down when the shift is made to write capitals. Why? Because the **type** is shifted—not the **carriage**. The only movement of the carriage is back and forth on its closely adjusted ball bearing runways—and this does not take place while the print is being made. There is no lifting of the carriage. This is one reason why L. C. Smith & Bros. typewriting is free from blurs and every letter in the right place. Ask for demonstration.

L. C. Smith & Bros. Typewriter Co.

Home Office and Factory
SYRACUSE, N. Y.

Branches in all Principal Cities

Portland Branch Office
306 OAK STREET

green; even the best grades cannot be used in this valley. Bordeaux mixture, however, does not cause such severe injury in the West as it does in the humid Eastern States, but even this mixture must not be used too frequently. Lime-sulphur solution of a strength commonly used with success throughout the East for summer spraying cannot be used in the Pajaro Valley for spraying without injuring the foliage. This is true of other soluble sulphids which naturally suggest themselves as mildew sprays.

Sometimes as much as 90 per cent of the foliage on trees of susceptible varieties in the Pajaro Valley are attacked by this disease. The orchards in this district suffer more from the mildew than do any other large apple-producing districts in the United States. The importance of giving proper attention to control it is increased by the fact that the disease comes back regularly year after year and gradually acquires a stronger foothold if its progress is not checked. The mildew occurs most commonly on the undersides of the leaves. The affected areas are white or grayish, and the term "powdery" very well describes their mealy appearance. The diseased spots may vary in size from a point invisible to the naked eye to patches three-fourths of an inch in diameter, and several of these may become established on a single leaf. In a large percentage of cases the entire upper and lower surfaces of the leaf become involved. Mildewed leaves are crinkled and stunted and often very much narrowed, owing to the fact that the growth and expansion of the leaf tissue is checked in the area covered by the fungus. In the Pajaro Valley the disease makes such rapid progress during the spring and summer that by the end of the leaf-forming season it is difficult to find normal, healthy leaves in any unsprayed Yellow Newtown or Yellow Bellflower orchard. The disease attacks the foliage and current year's twigs' growth, but rarely infects young fruit and only occasionally attacks a flower-cluster bud. When it does attack a cluster the individual flowers are usually reduced in size and much deformed.

No varieties of apples grown in the Pajaro Valley are immune from powdery mildew, but some are more seriously affected than others. The relative susceptibility of different varieties will probably be found to vary in different apple-growing districts, depending, among other factors, upon the effect which the local climatic and other conditions have on the foliage vigor. In general, the varieties that produce strong, vigorous foliage are less susceptible than the more delicately growing ones. In this connection it is interesting to note that in the Pajaro Valley the Yellow Newtown, which is one of the most susceptible varieties, can apparently be made much less susceptible if the vigor of the foliage be increased by stimulation such as comes from spraying with very finely divided forms of sulphur. A list

of the most susceptible varieties grown in the Pajaro Valley includes the Yellow Newtown, Yellow Bellflower, Smith (Smith's Cider), Missouri (Missouri Pippin), Esopus (Spitzenberg) and Gravenstein. The varieties that are less severely attacked are the White Pearmain (White Winter Pearmain), Winter Pearmain (Red Pearmain), Red Astrachan, Rhode Island Greening and Langford. Details regarding the preparation of the iron-sulphid mixture and spraying schedules, as well as pruning methods, are given in the bulletin, which apple growers to the west of the Rocky Mountains in regions affected by mildew should find profitable reading. It may be had free for the asking as long as the Department's supply lasts.

Don't Spray in Bloom

By John Pashek, The Dalles, Oregon

SPRING is on the approach and the spraying season will soon be here. And the old story ever new is now in place. A word to the wise is sufficient; and I hope that our orchardists and fruitgrowers will take to heart what I offer here. While it is true that I am in the bee business, and that my heart and soul are in that industry, no one who has studied the matter can deny that the fruitgrowers need the bees as much, if not more, than the bees need them. But what I want to make clear is the importance of spraying the fruit trees in their proper seasons. There are still a number of fruitgrowers in this vicinity who still spray their trees while in blossom, thus not only poisoning the bees and other necessary fertilizing insects but practically killing the goose which lays their golden eggs—their fruit yield.

In speaking of the evil of spraying trees while in blossom, Professor H. A. Surface, among other things, very decidedly says: "No trees, shrubs, bushes or vines of any kind should ever be sprayed while in bloom. Please tell this to your neighbors. Please tell it to the editors of all the papers. Proclaim it from the housetops. Let everybody learn that to spray a tree while in bloom is liable not only to injure the fruit and thus help to destroy the crop, but also kill the bees and other insects that are absolutely essential in carrying pollen from fruit to fruit and thus help fertilize the blossoms and insure a crop. If there is any one thing against which there should be definite and emphatic legislation in this state at the present time it is the ignorant and absurd practice of a few persons who yet appear to spray in bloom. Please help us to educate the people against this practice. Education as practical and rational as this would do much more than legislation, as growers, if educated on this point, would understand it is greatly to their disadvantage to spray while in bloom. This fact should be placed before each school teacher and kept on the walls of each school room of the state. Let us make it strong. Tell every school



SPRAYING *Made easier, quicker better, cheaper*

Three Sherwin-Williams Insecticides and Fungicides are now put up in dry powdered form. They are lighter and more convenient to handle. They will not freeze, dry out or spoil, and their improved chemical make-up gives a more effective spray.

S.W. Dry Powdered Arsenate of Lead
Dry powdered form gives maximum killing power at minimum expense.

S.W. Dry Powdered Tuber Tonic
A three-in-one potato spray that kills leaf-eating insects, prevents blight and acts as tonic to the plant.

S.W. Dry Powdered Fungi Bordo
An extremely effective scientific fungicide of exact chemical make-up, eliminating all uncertainties of home-made or commercial Bordeaux Mixtures.

Our Lime Sulphur Solution is particularly effective for San Jose Scale

Send for our Spraying Literature

THE SHERWIN-WILLIAMS CO.

Insecticide and Fungicide Makers
707 Canal Road, Cleveland, Ohio



LESLIE BUTLER, President
TRUMAN BUTLER, Vice President
C. H. VAUGHAN, Cashier

Established 1900

Butler Banking Company

HOOD RIVER, OREGON


Capital \$100,000.00

4% Interest Paid in our Savings Department

WE GIVE SPECIAL ATTENTION TO GOOD FARM LOANS

If you have money to loan we will find you good real estate security, or if you want to borrow we can place your application in good hands, and we make no charge for this service.

THE OLDEST BANK IN HOOD RIVER VALLEY



RHODES DOUBLE CUT PRUNING SHEAR

Pat'd June 2, 1903.

RHODES MFG. CO.,
880 S. DIVISION AVE., GRAND RAPIDS, MICH.

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

Ground Phosphate Rock

The Natural Plant Food and Permanent Soil Builder

1,000 pounds per acre once in each four years will cost about \$1.00 per acre per year. At Pennsylvania State College \$1.05 invested in Rock Phosphate gave increased yields of \$5.85—over 500%. At Maryland Experiment Station \$1.96½ gave \$22.11—over 1,000%. At Ohio Station each dollar paid for itself and gave \$5.68 profit. At Illinois Station \$2.50 gave the same return as \$2.50 invested in land. Each ton contains 280 pounds of phosphorus, not rendered available artificially by high priced destructive acids, but so finely ground as to become available in nature's own way.

United States Phosphate Co.

228 West Broadway, SALT LAKE CITY, UTAH

Write for Literature

"Perfection of Fineness in Grinding," our motto

ACME Foot Lift Weeder

A RIDING orchard cultivator and mulcher. Gets all the weeds—large and small. Used in orchards or for summer fallowing; keeps down weed growth and properly mulches surface soil. **Foot Lift Lever** enables operator, on seat, to clear off weeds that may gather while working. All steel construction. Light draft. Depth of cut adjustable. Price right.

Your John Deere Dealer Sells It!

What a user says about it:

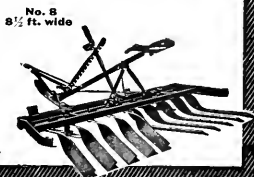
No. Yakima, July 31, 1914
Dear Sirs:—I take pleasure in recommending the ACME Weeder as the best implement I ever used for killing weeds and pulverizing the ground and I have used all of them. \$100 would not buy mine if I could not get another one.
(Name on request)

Another User Writes:

Mosier, Oregon, Aug. 22, 1914
Gentlemen:—I consider the Acme Foot Lift Weeder the best tool for cultivating orchards that I ever used, and as a weed killer it certainly is perfection.
(Name on request)

DUANE H. NASH, Incorporated
347 Division Avenue

Millington, N. J.



Lime - Sulphur Solution

(INLAND BRAND)

Oil Spray

(BETTS)

THE C. G. BETTS COMPANY

MANUFACTURERS

Erie Street and N. P. Tracks, Spokane, Washington

D. Crossley & Sons

ESTABLISHED 1878

Apples for New York and Export

CALIFORNIA, OREGON, WASHINGTON, IDAHO AND
FLORIDA FRUITS

Apples handled in all European markets at private sale. Checks mailed from our New York office same day apples are sold on the other side. We are not agents; **WE ARE SELLERS.** We make a specialty of handling **APPLES, PEARS AND PRUNES** on the New York and foreign markets. Correspondence solicited.

200 to 204 Franklin Street, New York

NEW YORK

LIVERPOOL

LONDON

GLASGOW

teacher in your county to write on the blackboard in capitals: "Never spray while in bloom." Another reason for not spraying while in bloom is that there is no need of it. There are no pests that must or should be killed or prevented at this time. It will not do anywhere near the amount of good that it would to spray before the blossoms appear, and again after they fall."

That bees are an important asset to the success of fruit raising is now proven to the satisfaction of the prominent orchardists in our own immediate vicinity. Several skeptics tried the use of bees as pollinizers last year and the result is such that they are resolved to continue using them from now on. Not only are bees a necessity to fruits but they are a great aid to berries and vegetables. And this is vouched for by Eastern experts who are reputed to know. In fact so enthusiastic have some Eastern fruit raisers become over bees that one prominent grower in Ohio declares that with the help of bees his state can be made a better apple-raising section than is Oregon and other Western States. So if Oregonians mean to maintain their records they had better arouse to action or they may soon find the East has caught them napping. It will stand repeating. Do your spraying before the trees blossom. During the blooming period let the bees get in their much-needed work. And then when the blossoms are well dried up spray again, if necessary. And remember that the bee is your friend, and that it is as important as the rain and sun in their proper seasons.

Growing Alfalfa in Washington

What may we expect? (1) Areas receiving considerable runoff from higher lands or light sub-irrigation are found occasionally within the rainfall belt of five to fifteen inches that often produce two good crops amounting to three or four tons per acre, but are no guide to what may be expected with the natural rainfall. They are misleading when so taken. (2) Where the rainfall is less than 15 inches and there is no runoff or sub-irrigation, one fair to light crop annually is all that should be expected if every precaution in the culture of the crop is observed. This is better than one fair wheat crop every four to six years. (3) With less than twelve inches rainfall, farmers are advised to experiment with small tracts until they learn what they can do. Considerable risk is attached to establishing the crop with less than twelve inches annual rainfall.

What are the requisites for Success? (1) Seed of the highest quality. (Seed will be examined without charge by the Department of Botany, State College, Pullman.) (2) A first-class summer fallow, offering a good supply of readily available plant food, stored moisture, freedom from weeds. A poor summer fallow is not safe. The young plants need every advantage. (3) No nurse crop. (Where the soil drifts a

nurse crop would be necessary, but the success of alfalfa under such conditions is very doubtful.) (4) Seeding with a drill, as described in latest bulletin by the State College. (5) Very thin seeding, preferably in rows 30 to 42 inches apart for cultivation. (6) Thorough cultivation every year. (7) Care not to pasture close at any time.

We would strongly urge farmers throughout semi-arid belt to give alfalfa a careful trial. As a forage and soil-improving crop for such conditions it is of the highest rank. Popular bulletins Nos. 42 and 49 discuss the principles of dry-land farming and Extension Bulletin No. 1 discusses the details of growing alfalfa without irrigation. These may be secured from the Experiment Station, Pullman, Washington, upon request.—Geo. Sevance, Agriculturist, State Experiment Station, Pullman, Washington.

Home-Made Apple Vinegar

Apple vinegar or cider vinegar is now made by commercial plants to such an extent that the home-made product is rarely seen and has but little place in the market. Apple cider will go through the normal process of fermentation and develop vinegar of splendid quality if given the proper temperature and time for development. As the cider is stored in the barrels it should be exposed as much as possible to the air and be kept at a temperature above 80 degrees and below 100 degrees. The best results will be obtained if the material is kept at a temperature ranging between 80 and 90 degrees. At this temperature it requires approximately a year for cider to develop enough acid content to pass as first-class vinegar. It should have between 4 and 7 per cent of acid content, and with the process of making being that of slow ferment in barrel quantities, it will seldom reach 6 per cent of acid content. Ordinarily the vinegar that is made by being permitted to ferment in barrel quantities must be kept in a basement or cellar storage where the high temperature can be obtained. It does not kill the ferment in the vinegar to pass below 80 degrees in temperature, but it retards its action, and the longer the material is in the process of making the less valuable it is and the more difficulties are liable to be encountered in the work. The best results will be obtained if the head of the barrel is taken out and the barrel left entirely open. It can be stirred to advantage once in a while, but ordinarily the process of letting it stand entirely undisturbed will develop a very clear and satisfactory grade of material.

The mother of vinegar that develops ordinarily on the top of the barrel is of no special advantage after it assumes the form of a condensed or hard cake. As long as it is in a loose, slimy form it will work fairly rapidly, but as soon as it assumes the caked form it may as well be removed from the barrel. Ordinarily if touched or

A Dreadnaught in Sprayers

—such is our "Dreadnaught" Duplex Power Sprayer. It delivers a hurricane of death to orchard pests of all kinds for years and years, without a hitch. In a recent test a

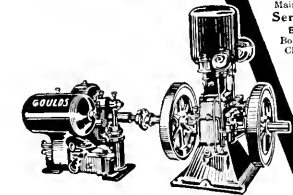
"Dreadnaught"—made just as we'd sell it to you—worked against 225 lbs. pressure for 600 hours, pumping a quarter of a million gallons, with no care except for lubrication and repacking. If wear had been taken up, the pump would undoubtedly have operated 2,000 to 3,000 hours. This test proves that with ordinary care the "Dreadnaught" should last ten seasons or more. Requires less than 1½ H. P. to deliver rated capacity—5.3 gal. per minute. Has heavy brass plungers, outside packed, non-corroding; uses either rotary or reciprocating agitator; all parts accessible; width 18½ in., length 22 in., height 15 in.—powerful, compact, durable. Ask your dealer to show you



—50 kinds—hand, barrel, knapsack, power—one for every purpose. All severely tested and fully guaranteed. Backed by 66 years' pump-making experience. Consultation on your requirements, free. Every machine fully described in our valuable free book, "How To Spray"—which covers the subject thoroughly. Your copy awaits you. Plan for a clean, healthy, profitable orchard now. Write us.

THE GOULDS MFG. CO.

Largest Mfrs. of pumps for all purposes.
Main Office and Works: Seneca Falls, N. Y.
Branch Houses: Boston, New York, Chicago, Atlanta, Houston



Fruit Tree Stocks

FOREIGN AND DOMESTIC
ALL GRADES

- Pear Seedlings — French (American-Grown and Imported) Japan and Kiefler (American-Grown)
- Apple Seedlings — American-Grown and Imported, straight or branched for budding or grafting, Doncine and French Paradise
- Cherry Seedlings — Mahaleb and Mazzard
- Quince Stocks Plum Seedlings — Mariana, Myroholan and St. Julian
- Peach Seedlings Rose Stocks — Canina, Manetti and Multiflora
- Lining-Out-Stock A complete assortment Grafts — Any style and variety
- General Nursery Stock — A full line

"No matter what you want or how much, send us your list for prices. It will pay you."

SHENANDOAH NURSERIES

D. S. LAKE, President SHENANDOAH, IOWA



Use Tree Tanglefoot

against Gypsy, Brown-tail and Tussock Caterpillars, Canker Worms, Climbing Cut Worms and Ants. It is also effective against any crawling insects attacking fruit, shade or ornamental trees.

Band Trees About Two Weeks Before Insects Appear and Get Best Results

Easily applied with wooden paddle. One pound makes about 10 lineal feet of band. One application stays sticky 3 months and longer—outlasting 10 to 20 times any other substance. Remains effective rain or shine. Won't soften—won't run or melt, yet always elastic, expanding with growth of tree. No mixing, simply open can and use. Will not injure trees.

For Tree Surgery

Tree Tanglefoot is superior to anything on the market—it is the best application after pruning or trimming. It will water-proof the crotch of a tree or a cavity or wound in a tree, when nothing else will do it.

Sold by All First-Class Seed Dealers
 1-lb. cans 30¢; 3-lb. cans 85¢; 10-lb. cans \$2.65;
 20-lb. cans \$4.80, and 25-lb. wooden pails \$5.95.
 Write today for illustrated booklet on Leaf-eating Insects. Mailed free.

THE O. & W. THUM COMPANY
 113 Straight Ave. Grand Rapids, Mich.
 Manufacturers of Tanglefoot Fly Paper and Tree Tanglefoot (38)

pressed down on one side it will sink to the bottom of the barrel. The live, active mother of vinegar, when collecting, appears as a thin or mucilaginous gelatine-like mass, and is rapidly reproducing the ferment yeast that is making the vinegar. It is not necessary in all cases to use this mother of vinegar to start the process of fermentation. It is a good plan, however, to use small quantities of it for placing in each barrel of cider to start the process of fermentation. If this is not done a great many different kinds of bacteria will develop in the cider, and not all of these will tend directly to the manufacture of acetic acid, which is the valuable acid in vinegar. The home process of vinegar manufacture is slow, but easily handled, and can in a small way be carried on very satisfactorily.—O. M. Morris, Horticulturist.

Washington Horticultural Inspector Reports

The report of the District Horticultural Inspector for the State of Washington, giving a statement of the carloads of fruits and vegetables used by Seattle, a city of about 300,000 people, is very significant, and one that should be studied by all fruitgrowers and truck gardeners of the Northwest. Attention is called to the fact that Seattle consumed 727 cars of apples, and of oranges, lemons and bananas Seattle consumed 1062. Why? Why do the apple growers of the Northwest allow the consumption of citrus fruits to exceed the consumption of apples? It is a matter for serious thought. The apple is the "King of all Fruits," and certainly can be supplied from the Northwest by the orchards within a stone's throw of Seattle far cheaper than bananas, oranges and lemons, that have to be shipped long distances.

MILTON NURSERY CO.

A. MILLER & SONS, Inc.—MILTON, OREGON

Pear, Cherry, Apple, Prune, Peach. Full line Shade & Ornamental Stock

Quality in Nursery Stock is a condition, not a theory, it is something we put into our trees, not say about them. Thirty-five years' experience enables us to do this.

SALESMEN WANTED

A Catalog and Special Prices on Request

Always
Specify



Then BE SURE this brand is on the kegs you get

Honest Quality and Full Count have made them the World's Standard, which is why you should insist on

"PEARSON'S"

And Accept No Substitute

Pacific Coast Agents

UNITED STATES STEEL PRODUCTS CO.
 San Francisco—Los Angeles—Portland—Seattle

J. C. PEARSON COMPANY, Inc., Old South Building, Boston, Mass., Sole Manufacturers

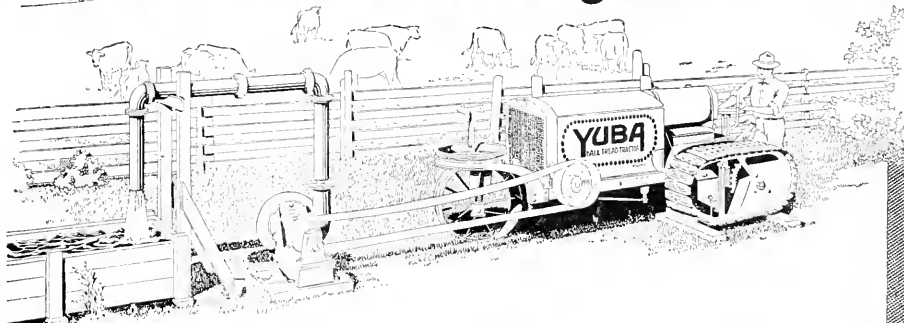
BUY AND TRY

White River Flour

MAKES

Whiter, Lighter Bread

when there's nothing else to do



The Yuba Ball Tread Tractor is designed and built for use on some type of work every day in the year.

Directly in rear of the radiator is a cross-shaft connected to the motor by beveled gears running in oil. The starting crank is on one end of this shaft; on the other end is a stationary pulley. This shaft is not an after-thought, nor is it ornamental. Every Yuba Ball Tread Tractor has one and when the operator needs it, he uses it.

THE YUBA BALL TREAD TRACTOR

The stationary pulley is supplied with every machine. When so desired, a clutch pulley is furnished as an extra. When there is nothing else to do, The Yuba Ball Tread Tractor will pump water, generate electricity, mix concrete, saw wood, cut feed or furnish power to a stationary thresher.

There is a booklet describing it.

THE YUBA CONSTRUCTION CO.

433 California Street,

San Francisco

Dept. G-22

Works, Marysville, California

Apple Scab—Where Most Prevalent

By Professor O. M. Morris, State Agricultural College, Pullman, Washington

THIS disease is too well known to require a careful description. It is distributed over every district that grows apples and has sufficient rainfall to grow the crop without irrigation. The districts that have the most cloudy, damp, rainy days during the growing season ordinarily are the ones that have the greatest amount of scab-infested fruit. In the Northwest

this disease is most prevalent in the Coast regions, in the highland districts of the Rocky Mountain region and in the highland on the east side of the Cascades.

The disease works on the fruit, foliage and twigs, and is distinctly destructive to the commercial value of the fruit. The amount of damage done to the foliage and to the vigor of the

trees in general by reason of the attacks on the foliage cannot be so easily and distinctly measured. That great damage is frequently done cannot be doubted from the fact that the foliage is so badly damaged that it drops from the trees in the middle of the growing season. The damage to the twigs is less apparent, if there is any distinct damage, further than that of furnish-



PRUNING TOOLS

Good Tools make good pruning; keen sharp edges make smooth wounds which heal quickly and lessen danger from wood-destroying insects and fungi.

BARTLETT COMPOUND LEVER JOINTED TREE PRUNER

is made in 4-foot sections and quickly joined together into the desired length. Bartlett Two-Hand Pruner is made so that the hook remains stationary while the blade closes. Makes a draw cut and does not bruise the bark.

No kit of pruning tools is complete without our bracket hand pruning saw with swivel blade. It will get into any crotch.

PRICES	Each
Compound Lever No. 4 Jointed Pole Pruner, 8 feet.....	\$1.00
Compound Lever No. 4 Jointed Pole Pruner, 12 feet.....	3.25
Compound Lever No. 4 Jointed Pole Pruner, 16 feet.....	3.50
No. 77—Two-hand Pruner.....	2.00
No. 18—Hand Pruning Saw.....	1.75

If your dealer cannot supply you, remit to us for samples prepaid.

BARTLETT MANUFACTURING COMPANY
42 Lafayette Avenue E., DETROIT, MICH.

ing infectious material to be spread over the fruit and foliage. As the disease appears on the fruit it is usually very distinct in its appearance, and when once recognized can always be distinguished from any other disease or trouble that may appear on the fruit's surface, except in some cases it is impossible to distinguish on the mature fruit whether the scarred surface is a result of scab or frost injury. The frost injury usually occurs in larger areas, but that does not always make a clear mark of distinction, and it is doubtful whether even a microscope examination could determine clearly whether the damage is done by frost or by scab. This season frost has done considerable damage to fruit in some sections, and there is no doubt that some of the disfigured fruit should be credited to the action of frost and not to the action of scab, although scab be present in the orchard. This disease when once established in an orchard does not occur with regular annual severity. Some years it will be very bad and probably the following year very slight damage results from its action. In some cases it has been so light that it was difficult to distinguish from the crop which trees had been sprayed and which had not been sprayed. The frequency of such experience has led some fruitgrowers to the belief that spraying is useless. There is no reason, however, to doubt but that careful regular spraying will keep this disease practically under control one year with another, even when the year of great prevalence occurs.

The spores of the disease become active in the early spring and what are called hold-over spores are distributed on the first new rapidly-growing tissue that is exposed as the leaf buds and blossom buds are unfolding. The first infection usually takes place before the blossoms have opened. The first spores that find lodgment on the green tissue grow and develop rapidly. It is only a few days or weeks at most until these new infections are producing spores, and from this time on as long as moist, cool or favorable weather for the spread of the disease exists, there is a continuous seeding and maturing of scab. There are no distinct seeding and fruiting times to compare with the different broods of the codling moth, but it is a continuous process, checked only by materials that may be sprayed upon the plants or by dry summer weather, which produces the same result. It is not uncommon for the greatest spread of scab to take place in July or August, or even after the first of September under favorable circumstances. It seems to be impossible to entirely eradicate this disease from an orchard when it is once established, and the only method that gives results is continuous, watchful work that aims to hold the disease in check. In the orchards where it is established it is not sufficient to spray thoroughly once or twice in the spring and then if no scab is evident two or three

Are you going to place an order for nursery stock for next spring or fall delivery? In the growing of our stock we consider

“Quality First”

Oregon trees are superior to any others and we have grown them for 29 years. A postal card brings you an illustrated catalogue.

You may be interested in our agency proposition. Write us for details. There is money in it.

Albany Nurseries
ALBANY, OREGON



YOU WANT THE BEST SPRAYER

You want to save time, temper, trouble and trees. You want to raise fruit that brings the highest price. You want to know all about our sprayer before you buy. There is more you ought to know. Do You Want To Know The Price?

Write for a free catalogue 86
PETERSON MACHINERY CO.
Manufacturers 182 Morrison St., Portland, Ore.

Where do the poultry profits go? Have you ever figured this out? We have made an exhaustive study of this important problem and the answer is in our new Poultry Book, just off the press. Send 10c for a copy, today, and we will enclose our Cash Value Coupon. The book is worth several dollars to the poultry owner.

THE G. E. CONKEY CO.
111 Conkey Building, Cleveland, Ohio



H. HARRIS & CO.

Fruit Auctioneers

131 State Street
Boston, Massachusetts

Established 1847

Frank Moseley
Frank L. Ripley
Cutter B. Downer

Hood River, Oregon

Capital and Surplus
\$135,000

4% Interest Paid on Savings
and Term Deposits

F. S. STANLEY, President
E. O. BLANCHARD, Cashier

weeks after, to assume that there will be no scab during the remainder of the year. It may develop slowly, and then with a very favorable turn of weather spread so rapidly that it will practically destroy the entire crop of fruit.

The prevalence of the disease seems to have no relation whatever to the vigor of the trees; to their rate of growth; to the character of soil upon which they are growing, or to the character of fertilizer that has been used in the orchard. At present there seems to be no known method of treatment of the trees that will modify their resistance or susceptibility to the attacks of the disease on twig, foliage or fruit. These are independent factors. So far as we can determine at the present time the resistance of the trees to the attacks of the disease depends, first, upon the individual character of the variety and, secondly, upon the opportunity for spread of the disease as modified by source of infectious material and weather conditions. Apple scab does not seem to be directly associated with the action of any fungi nor directly with the action of the attacks of any insects, so that the disease must be combated directly, and there is very little that can be done in an indirect way.

There are two lines of work commonly undertaken to prevent the appearance of this disease on the fruit. These two methods of disease control, however, are not independent of other lines of orchard management, and in nearly all cases can be conducted as a part of the orchard practice with very little special attention. It so happens that there are other pests that must be destroyed, and in contention with these other troubles it is not ordinarily necessary to make special applications of sprays or conduct other lines of cultural operations as special means of attack on the scab. The first process of combating the scab is that of destruction of infectious material. This cannot always be carried out in practice as fully as it can be advocated in theory. For instance, the disease appears to a very great extent on the twigs of the McIntosh apple. It is not known to what extent this twig infection results in the hold-over form producing the spores in the spring, but it would be impracticable to undertake to cut off and destroy all infected twigs. It is not impracticable in all locations to undertake to destroy all windfall and scab-infected fruit left in the orchard or piled as culls around the packing houses; nor is it always beyond the limits of good practice to undertake to plow under or in some other way destroy the scab-infested foliage. This can frequently be done, and I am convinced that in the rainfall sections of the Northwest it is not only a possible practice but in most cases would be a very profitable one. I do not believe that this can be carried out independently of all other points of orchard practice, but it must be con-

Planet Jr. Orchard Cultivator

For the fruit-grower who wants maximum profits this No. 41 Planet Jr Orchard and Universal Cultivator is an absolute necessity in the orchard, vineyard, or hopyard. Its strong, durable construction and lasting service make it the most economical orchard cultivator you can buy.

This No. 41 has strong, light frame, low wheels, and tongue, all of steel. It is equipped with fruit-tree shield and side-hitch for low trees. It carries teeth, sweeps, furrowers, plows, and special weeder attachments. Works deep or shallow, and cuts from 4 to 6½ feet wide. Convertible into disc-harrow and alfalfa cultivator. Can be fitted with fore-carriage; also spring-trip standards, and irrigation steels.

J. E. Nish, Rialto, Cal., writes: "Have used your Planet Jr Orchard Cultivator for 15 years. Remarkable what a machine it is. To my mind it has no equal."

New 72-page Catalog (168 illustrations) free!

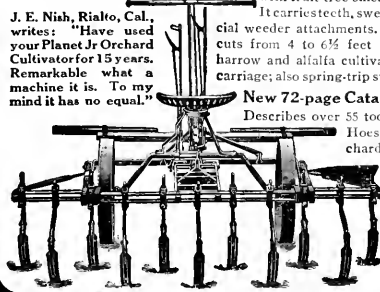
Describes over 55 tools, including Seeders, Wheel Hoers, Horse Hoers, Harrows, Orchard- and Beet-Cultivators.

Write postal for it today.

S L ALLEN & CO
Box 1106U Phila Pa

Established over 40 years.

We carry stock in San Francisco and Los Angeles. Agencies in all principal Pacific Coast cities.



NITRATE OF SODA

is the king of all fertilizers. It is as cheap and is better than other fertilizers. It not only enriches the soil, makes trees healthy and strong, produces better fruit, but it

Ripens Fruit More Quickly

It is especially adaptable to all orchard needs, because it can be used both as a spray and as a fertilizer. It contains 15 per cent of nitrogen, which is the principle base of all fertilizers, and this nitrogen is immediately available for your use.

Let us send you literature proving these statements
Write Dept. B

NITRATE AGENCIES CO., Leary Building, Seattle

Exposition Fares Announced

Round Trip Fares to the Panama Pacific International Exposition, San Francisco, open February 20, closes September 4, 1915, and the Panama California Exposition, now open and will continue the entire year, have been announced

via Shasta Route Trains

Fares from Portland

To San Francisco	\$35.00.	Return limit 90 days
and return	\$30.00.	Return limit 30 days
To San Diego	\$52.25.	Return limit 40 days
and return	\$61.50.	Return limit Six months

Sale Dates: Feb. 15 to Nov. 30, 1915

Three fine trains daily, Shasta Limited, San Francisco Express and California Express, modern equipment and direct connection with trains at San Francisco for points South.

For full particulars call at City Ticket Office, 80 Sixth Street, corner Oak, Union Depot or East Morrison

Southern Pacific

John M. Scott, General Passenger Agent
Portland, Oregon




The Exposition Line 1915

GOOD SEEDS
BEST IN THE WORLD
 Prices Below All Others
 I will give a lot of new sorts free with every order I fill. Buy and test. Return if not O. K.—money refunded.
Big Catalog FREE
 Over 700 illustrations of vegetables and flowers. Send yours and your neighbors' addresses.
R. H. SHUMWAY, Rockford, Illinois



Ask for Catalogue No. 5

YOU CAN MAKE \$20.00 A DAY
 AND JUST ONE MAN ON THE JOB WITH A **KING OF THE WOODS DRAG SAW**
 Full sized on the stump hit and over the roughest ground
 One man writes by sawed 50 stumps in 12 hours
 Another sawed 50 cords in 4 days
 Another writes his neighbor will plant a tree
 TREE IS WORTH YOU SHOULD KNOW
 Write for Testimonials and Catalog Disk
Reiseron Machinery Co.
 Manufacturers, PORTLAND, OREGON.



Orchardist Supply House
Franz Hardware Co.
 Hood River, Oregon

CAXLE & S
 LARGE HANDY C&S BUCKET
 SMALL S CAN
GREASE
 WHITTIER COBURN CO. S.F. SOLE MFRS.

SPRAY
 The Morrill & Morley Way
 Use an Eclipse Spray Pump.
 Used by the U. S. Department of Agriculture. Its construction is perfect. Illustrated catalogue free.
Morrill & Morley Mfg. Co.
 Box 12 Boston Harbor, Mich.
Eclipse Spray Pump




considered as a part of the entire work, and where possible should be determined upon and carried out, unless there are some special reasons why fall plowing could not be of value. It is not enough to plow this material under, but the soil should be so well worked down that the leaves will decay before they are brought to the surface the following spring by the process of tillage.

Spraying for the purpose of directly combating the disease is a very common practice and must be depended upon for the larger part of the possible success that may be attained in the scab-infested districts. Winter spraying is essential and has a very beneficial effect in other ways aside from its importance in controlling scab. But where the scab problem is one of the most important, the winter spraying can be deferred until about the time the buds are breaking open in the spring. Many people have found it to their advantage to do their winter spraying after the buds are showing pink. In some sections lime-sulphur is used for the control of scab, to which is added lead arsenate for the control of the bud moth, and black-leaf "40" for the control of aphid. A three-per-cent oil emulsion is sometimes added to this already greatly varied spray concoction, with splendid results. This last mixture has been used more in California than anywhere else. A very effective solution for the calyx spray is composed of summer-strength lime-sulphur, to which is added arsenate of lead for the codling moth and black-leaf "40" for the aphid. This mixture in some respects will be slightly deteriorated because of the various compounds placed in the tank at once, yet by strengthening each a little it has been found cheaper and more satisfactory from the fruitgrower's point of view than giving several applications using one or two materials at a time. Whatever the results may be from a laboratory or technical point of view, it is the actual amount of clean fruit that the orchardist is working for, and this is the only sound basis for approval or condemnation of any spray material or practice.

The crop must be watched throughout the growing season, and the appearance of any new spots of scab on either fruit or foliage should indicate that another spraying is necessary. Some of the materials used are costly, but anyone who has followed a spray outfit for a day is fully convinced that the solution itself is not the only item of expense. Spraying is hard, disagreeable work, nevertheless there are few orchardists who would be willing to risk their crop with one spray for codling moth, or for the prevention of scab in scab-infested areas. In most of the irrigated sections it is found necessary to spray more than once for the purpose of holding in check the various forms of aphid. I have studied the results obtained by the growers of the different districts and find a con-

Orengo Prune Trees Cheap
 Myrtle Creek, Oregon, November 26, 1914.
 I feel like saying a few words to you on paper to regard to my Italian Prune trees. I am more than pleased with them. Really they are better than I expected. I cannot speak too much in praise of your company for such good trees. They are of good size, good height and good roots. Everyone that I talked with that ordered from you is well pleased.
 (Signed) J. A. Copeland.
 "ORENGO TREES" are universally known for their high standard of quality, and particular planters prefer to buy where they can depend upon quality, reliability and satisfaction. When you want really good trees at right prices, you can't do better than with us. Try it.
Oregon Nursery Company
 ORENGO, OREGON
 SUCCESSFUL salesmen wanted.


"Bauer" Quanteed Strawberry Plants
 All leading varieties known, Klondike, Aroma, Candy and others.
 Write for my 68 page free catalog.
J. A. BAUER, Judsonia, Ark.
 Strawberry Specialist
 Established 1880
 Box No. 5



Portland Wholesale Nursery Company
 Rooms 301-302 Stock Exchange Building
 Corner Third and Yamhill Streets
 PORTLAND, OREGON

True-to-Name Nursery
GALLIGAN BROS.
 Proprietors
 Hood River-Dufur, Oregon
 Wholesale and Retail General Line of Nursery Stock. Seventeen years in the business. For catalogue and prices write
True-to-Name Nursery
 Hood River, Oregon

THE GENUINE SMITH STUMP PULLERS
 W. SMITH GRUBBER CO.
 CATALOG FREE-DEPT. T-10 LA CRESCENTE, MINN.



F. A. BISHOP, Secretary
HOOD RIVER ABSTRACT COMPANY
 HOOD RIVER, OREGON
 ABSTRACTS INSURANCE CONVEYANCING

Auto Comfort



YOU'VE no idea how this glove helps you to handle wheel or reins. Actually *helps*—because it gives you bare-hand freedom with soft, warm comfort!

Hansen's Gloves

In many styles, lined or unlined, all of best leathers. They feel good and last long. As one farmer said: "Rough work goes smooth in a Hansen."

Write for Free Book on Gloves and Mittens If your dealer does not sell Hansen's write us for information where to buy.

O. C. HANSEN MFG. CO.
130J Detroit St. Milwaukee, Wis.

Seeds


Send for Catalog "B"
World Famous, English Tested
Flower and Vegetable Seeds

Barter's — We Have It!

"Quality Tested Seeds" — We Have It!

Inc.
DEAN D. BALLARD, Mgr.
3000 Arcade Building, Seattle

Here It Is—Look! The Mighty Monarch Steel Stump Puller



The greatest stump puller in the world. Built of steel. Strongest guarantee ever written. Made for double and triple power. Has clearing area of 175 feet with 200 feet of cable as compared to 65 feet area of other Stump pullers. Has more modern improvements, does more work and more easily than with any other.

MONARCH STEEL STUMP PULLER

The Oldest STEEL STUMP PULLER On Market

Been giving satisfaction for 20 years. They are not an experiment. Our modern can take up, solid coupling anchor cable, team hitch and other feature not found on any other, make the Mighty Monarch the leader of all. With these modern features, considering the quality, the construction, they really cost no more than the ordinary untried machine. Do not buy with your eyes shut. Get our free catalog first.

Pacific Coast Representative
PARLIN & ORENDORFF
Dept. BF Portland, Oregon

stant tendency, based upon actual experience, to increase the efficiency of their spray by putting more materials of various kinds in it and endeavoring to make a concoction that will kill everything present and prevent any other mischievous organism getting a hold in the immediate future.

The apple mildew is another disease that I would like to mention at this time because it has spread so rapidly during the last season in some parts of Washington, and I understand is also in some of our neighboring states. This disease was for a time thought to be of little importance. Ordinarily mildews disappear or their spread and development is checked by warm, dry weather. Some of us expected this to take place with the development of mildew this past season, but it seemed to develop and grow just as rapidly in dry weather as in moist. Bordeaux mixture did not control it; neither did lime-sulphur, although I found a few men who claimed that they were holding it in check by the use of lime-sulphur. The manager of one badly infested orchard which I visited claimed to be holding the disease in check by lime-sulphur. It did not seem to me that his efforts were successful, although one visit to the orchard could not be used as a basis for judgment, especially when that judgment was contradicted by an intelligent man who was working in the orchard every day. This disease has been a pest in some of the apple orchards of California for several years and has only recently done enough damage in Washington to attract much attention. The results secured in the experimental work in California indicate that free, or what is more commonly called pure sulphur, is the best known material to use in spraying to control apple mildew. All of the common standard fungicides were tested with many new preparations, and what is called precipitated sulphur gave best results. In the experimental work this was prepared by dissolving two pounds of iron sulphate in about ten gallons of water and slowly adding concentrated lime-sulphur until no more black precipitate is formed. This is allowed to settle and the clear liquid poured off. Water is added again and the material vigorously stirred, and the same operation repeated two or three times. The black precipitate is then mixed with 100 gallons of water and used as a spray. The value of this mixture does not seem to be impaired by adding arsenate of lead and nicotine for the control of insects. The first application of this combined spray mixture is used as the calyx spray. The second application should be made about ten days or two weeks later. The third application is made about three weeks after the second. The fourth application is made about three weeks after the third. Some fruitgrowers in Hood River last summer added the iron-sulphate solution to the lime-sulphur and arsenate solution after the latter had been diluted in the spray tanks.

A Wet Day?

Go out on the job wearing



TOWER'S FISH BRAND REFLEX SLICKER

Work in it all day; it's made big all over for comfort, strong enough to stand the strain of hard service, and waterproof throughout. Note this big feature: water cannot run in where the joints overlap and button. Our patented Reflex Edges stop every drop.

\$3.00 Everywhere Satisfaction Guaranteed
Catalog free
A. J. TOWER CO., Boston

GET THE STUMPS OUT

Make ALL Your Land Earn Money For You

"K" HAND-POWER STUMP PULLER

Makes stump pulling a one-man job. This powerful machine weighs only 171 lbs., but it pulls 96,000 lbs. Two speeds, high speed for light work, power speed for heavy work. No chains. Pull more than horse machines. Complete equipment, including 200 feet Weatherproof English steel cable. Used by U.S. Gov't in Alaska, and by many states and countries.

Valuable Book on Land Clearing FREE—My new catalog tells costs of different methods of land clearing. Write for today, and get special direct-to-you price.

W. J. FITZPATRICK
Box 5, 1926 2nd Ave.
Seattle, Wash.



GREAT CROPS OF STRAWBERRIES

And How to Grow Them

IS the most beautifully illustrated and most complete strawberry book ever written. It teaches the Kellogg Way of doing things and tells the whole strawberry story from start to finish. It explains how the famous Kellogg pedigree plants are grown on the great Kellogg plant farms in Idaho, Oregon and Michigan, and pictures and describes all the best varieties, including the ever-bearing kind.

OUR FAMILY STRAWBERRY GARDEN

Whether you have a small garden or a big farm, you should grow your own strawberries. Kellogg's Big Red Strawberry garden will produce all the delicious strawberries your entire family can eat, summer and winter. You can have shortcake, strawberries and cream, preserves, jam and canned berries the year round for less than one cent per gallon. Our Book gives full information.

STRAWBERRIES

Yield more dollars per acre and give quicker returns than any other crop. Get our 64-page book and learn THE KELLOGG WAY, and make \$500 to \$1200 per acre. The Book is FREE.

R. M. KELLOGG CO. FREE BOOK
Box 355, Three Rivers, Mich.





Grasselli Arsenate of Lead Paste
Grasselli Arsenate of Lead Powdered

The quality which has been standard in all fruit growing sections of the United States during the past eight years.

Grasselli Brand Sulphate of Nicotine

Guaranteed to contain 40% Nicotine.

Thrips and other plant lice can be destroyed by spraying with Grasselli Brand Sulphate of Nicotine. May be combined with Arsenate of Lead or Lime-Sulphur Solution, or both, to give a combined treatment for Plant Lice, Leaf Eating Insects and Fungous Diseases.

The Grasselli Chemical Co.

Cleveland, Ohio

St. Paul, Minnesota

ESTABLISHED 1839

Distributors in All Leading Fruit Districts

Crown Gall, Black Knot, Etc.

Continued from last issue

Owing to the overlapping of the broods, individual scales in every stage of development can be found at any time of the summer. The winter, however, is passed only by those individuals that have not molted. These are blackish in color, small in size and are most abundant on the smaller branches, which therefore require the closest attention when spraying for this pest. A few of the old yellowish females remain alive into the spring, but they reproduce only a very small percentage of the future scales. Ordinarily severe winter weather destroys but few of the quarter-grown individuals. The condition of the host tree is a much more important factor in determining the winter mortality of the scale. A vigorous tree that is not poisoned by the injections of the insects is likely to over-winter as much as ninety-eight per cent of the individuals. On trees that are badly poisoned, however, as many as ninety per cent of the scales succumb. The individuals that survive the winter resume growth very early in the spring, so that by May they reach maturity, and from then on the young are continually born.

While many insects restrict their food to a few species of plants, the San Jose scale can exist on a wide range of hosts. Apple, pear, peach, cherry, plum and quince are all very readily infected. Of the orchard trees, the apricot, however, is much less susceptible to attack. Strawberry, raspberry, currant, gooseberry and grape are favorite hosts. The insect frequents the nut trees, such as almond, walnut and chestnut, and of the ornamental plants is frequently found on rose, spirea, honeysuckle, hawthorn, dogwood, willow, locust, maple and poplar, as well as on many other plants. When controlling the scale by spraying, attention should be given the shrubbery along the creeks and river bottoms, as these plants frequently become a reservoir of infection to supply the neighboring district. It is these neglected scales, as well as the few under buds or at the tips of branches, which are usually missed in spraying, that tide the species over to make spraying again necessary the next year.

Although now so widely spread over the United States, this insect does not thrive everywhere within Washington. Several times has it been introduced west of the Cascades, but has failed to gain a foothold. In the upland country of Eastern Washington the insect has never become established, but in all of the river valleys it is present in abundance. The San Jose scale can spread from tree to tree when blown by the wind during its first day of life. During this short period of activity it is able to crawl on insect or bird visitors, and in this way can be carried from orchard to orchard. Its presence in a new district has been brought about either by this method of distribution or more commonly by being introduced on nursery stock. As a very few indi-

LADD & TILTON BANK

Established 1859

Oldest Bank on the Pacific Coast

PORTLAND, OREGON

Capital \$1,000,000.00
 Surplus 1,000,000.00

Officers:

W. M. Ladd, *President*

Edward Cookingham, *Vice President*

W. H. Dunckley, *Cashier*

R. S. Howard, Jr., *Assistant Cashier*

J. W. Ladd, *Assistant Cashier*

Walter M. Cook, *Assistant Cashier*

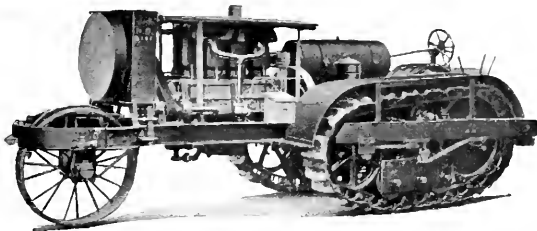
INTEREST PAID ON TIME DEPOSITS AND SAVINGS ACCOUNTS

Accounts of banks, firms, corporations and individuals solicited. Travelers' checks for sale, and drafts issued available in all countries of Europe.

viduals will readily suffice for populating a fruit district, various states have established stringent laws regulating the inspection of nursery stock. However, no matter how well nursery stock is inspected, it would be quite impossible to declare it absolutely free from scale, for the over-wintering young, in size like a pin point and in color harmonizing with the bark, would readily escape even the closest scrutiny. The presence of the scale on the leaves leads to the destruction of such individuals, for when the leaves drop at the close of the season, the scales inhabiting them are destined to perish. To a very large extent the same can be said of scales locating on fruit. It seems improbable that the minute over-wintering individuals on the fruit should be able to derive enough sustenance in the spring of the year to complete their development and arrive at sexual maturity. It has been experimentally shown that such fruit is not a menace, although for commercial purposes it may have but little value.

The disease is extremely common in the nursery. Peach and almond root stock are largely used, as the pits are easily and cheaply secured and the root is well adapted to the various stone fruits. The amount of the disease varies from year to year, being sometimes as great as 75 per cent. The Myrobalan plum is also a very popular stock on the Pacific Coast and is freer from gall than the peach or almond. There is no doubt that much of the disease among orchard trees has its origin in the nursery from which it is distributed far and wide over a wide range of territory. In California and other states, where there is rigid inspection of trees and plants, any showing these galls are rejected, but often the inspection has already taken place but the trouble is not sufficiently developed to show, and so passes inspection only to develop on the young, growing trees.

The injurious effects of the disease vary on the different kinds of trees, some readily succumbing to the disease, while others are more resistant and may live and be quite productive for years. Apple trees are quite subject to crown gall, especially at the point where they have been bench grafted. Here a gall often develops to considerable size in addition to the healing callus. The infection enters the injury from the soil. Budded or field grafted trees, although more expensive, are much superior for planting, as they are always more free from crown gall. The hard and soft forms of gall in apple have a similar cause. The hard form is of slower growth and probably not so injurious. Another form of apple disease supposed to have a similar cause to crown gall is the hairy root disease. This disease is characterized by an increased and abnormal production of fine roots that differ from the normal fibrous ones. These abnormal roots can usually be traced back to an irregular swelling or knot on the root. From these warty knots a rapid-growing, suc-



BETTER "BABIES"

We thought the Baby Caterpillar was pretty good last year. Got lots of heart-warming testimonials from orchardists and ranchers in the Northwest. But we still kept on figuring how we could improve the "Baby" for 1915.

So we strengthened up the frame; added the Ben Holt track used on the larger Caterpillars; put on a 3-bevel reverse, with cut steel gears; enclosed the transmission so it runs in an oil bath; and refined the Baby throughout. We didn't have to make any very big change, but just put in a few of the extra licks that make a tractor stand up longer, need less repair, and give 365 days' service out of a year.

It isn't as if we were a new concern in the tractor game. Holt's been building tractors for twenty years. Take a tractor that's just been on the market for a year or so, and its builders have to practically build a new one each year to meet their last year's customers' kicks. Caterpillars aren't built that way. They're built right—motor and all—by our own skilled workmen; and they've got ten years in the field behind them.

But we can't tell you all the good news here. Write for brand new Bulletin BE 174, and for information on our Tractoring School opening January 18th at Spokane, free to Caterpillar owners.

**BABY
CATERPILLAR**

Reg. U.S. Pat. Off.

Don't say Caterpillar unless you mean Holt!

THE HOLT MFG. CO.

(Incorporated)

Stockton, Cal. Peoria, Ill.
Spokane, Wash.

Consolidated Wagon & Machinery Co.
Salt Lake City, Utah, Sales Agents

Ridley, Houlding & Co.

COVENT GARDEN, LONDON

Points to remember when consigning
apples to the London Market

- 1.—We Specialize in Apples
- 2.—All Consignments Receive our
Personal Attention
- 3.—The Fruit is Sold by Private
Treaty on its Merits

CABLE ADDRESS: BOTANIZING, LONDON

Walnuts Are Dollars

They are now selling for the highest price ever known and have tripled in value in sixteen years. We sold our first crop of 1200 pounds of grafted Vrooman Franquettes, from our 10-acre 6-year-old orchard, for an average of 25 cents per pound. This grade was 98% of the crop, and we sold the 2% of culls for 15 cents. Do you know that these nuts sold for more apiece than average apples and weighed only one-fifteenth as much? We have trees for sale grown from scions cut from this orchard that have first-class roots as well as tops. Do you know that we have a 17-year-old walnut orchard here in the Northwest that netted \$500.00 an acre last year? Write for prices or booklet on walnut culture.

FERD GRONER & McCLURE, Hillsboro, Oregon

Apples Will Make You Independent

Many good orchards in Virginia and North Carolina are worth \$1000 an acre. You can buy good apple lands for as low as \$15 an acre. Secure a few acres and plant in apples. In a few years time you will be rich. The climate here is delightful and living conditions are ideal. Good schools and churches. Short winters. No blizzards or cyclones. Abundant rainfall—average 4 inches monthly in 1913. Write today for list of small and large farms that can be bought for \$10 an acre up on easy terms, also for our illustrated magazine, maps, etc. Prices of good lands are rapidly advancing. Write at once.

F. H. LaBeune, Agricultural and Industrial Agent, NORFOLK & WESTERN RAILWAY
Room 228, N. & W. Railway Building, ROANOKE, VA.



Keep the Great Northwest the Land of Perpetual Crops

The Northwest is noted for its abundant yields. Our land's natural richness in plant food is agricultural history. Yet, once upon a time New England was noted for its record fruit shipments. Now it is known for its worn-out lands. Farms now covered with "For Sale" signs mark the penalty of taking away the land's ability to produce.

The land is the great Northwest's backbone. Take away its strength, and its functions will soon become paralyzed—weakened—worn-out—"New Englandized."

Beaver Brand Animal Fertilizers

"a fertilizer for every soil"

are MADE and SOLD by us. Essentially a Northwest product—a product of our packing house—the PIONEER animal fertilizer plant of the Northwest. Made in the process of killing cattle—Northwest cattle—cattle fed on Northwest crops.

Beaver Brand Animal Fertilizers

revive strength—give new life—enable the next crop to feed upon the sustenance necessary for a good harvest. Avoid the worn-out land danger! Insure against poor crops—increase your land's producing ability by ordering this famous fertilizer NOW.

Fertilizer booklet F-37 Free. Tells about fertilizers, their application and results they produce.



culent root develops that by an intricate branching develops into a great mass of fine roots. Sometimes there is a broom-like formation of fine roots that occurs at the end of a side root that otherwise seems to be healthy. In general, the hairy roots are more fleshy and numerous than normal roots. Some stages of the disease are not accompanied by typical galls on the roots, but have small enlargements of the tissue at the base of the clustered hairy roots. While this form of gall differs manifestly from the other one described, yet it has been found to be caused by a bacterial organism closely allied to if not identical with the one causing the spherical galls. There is some difference of opinion as to the seriousness of crown gall on apple, some authorities claiming it does not injure the bearing properties, while others claim it makes a stunted and short-lived tree.

Pears are occasionally diseased with crown gall, and the pear stock in common use, Prunus communis, as well as the varieties so far tested, readily take to the disease. Not much is known as to how common or serious the disease is in pears.

Cherry stock is somewhat more resistant than peach or roots of the other stone fruits. The Mazzard and Mahaleb roots when tested can be infected, yet the former variety shows considerable resistance. The disease only rarely causes serious trouble in the cherry orchards, although a few cases have been observed where the disease was especially virulent.

Plums, peaches, almonds and apricots are often severely diseased. Different varieties of peaches, Muir, Salway and Lovell, have been artificially infected with gall, as well as the different varieties of almond that are used as rootstocks. Much more resistance is shown among plums, especially those of the German prune and Damson, while the Myrobalan, which is a popular rootstock, is more readily infected. Orchards of peach and almond often show a high percentage of diseased trees, and there is little chance of a badly infected tree outgrowing the disease.

The English walnut is susceptible to the disease when on English roots, as much as 50 per cent of nursery trees being sometimes affected. Galls are not so often found on the black root, Juglans californica, which is now used as a rootstock for the grafted varieties of English walnut. The disease on the walnut first causes a gall formation, which later decays and leaves the tree with the appearance of being eaten off at or below the surface of the ground. Black walnuts and English walnuts have been artificially inoculated.

The pecan has been found having the crown gall and has been artificially inoculated from pure cultures. Just how serious the disease may be in the pecan is not known, as the tree is not commercially grown in California.

Quinces as grown in California have an aerial form of the gall called black knot. This has been proven by Dr. Erwin F. Smith to be caused by a

bacterial organism that is probably identical with that of crown gall as found on other trees. The disease in most cases does not seriously affect the tree, although hardly a quince tree in California is free from it.

Grapes are often diseased, the gall being found on cuttings at the cut end or in grafted vines at the place where scion and stock unite. The European varieties are more susceptible than the American species. It has been demonstrated that varieties of grape resistant to the phylloxera are also resistant to crown gall, and these varieties or other varieties grafted on this stock are in all ways to be preferred.

For the control of crown gall disease the following is suggested: Grow the seedling in soil that is supposed to be free from the disease germs. Grow, if possible, stock having some natural resistance to the disease. Certain kinds of plums, as the German and Italian prune (Fellenberg), appear to have strong resistance to crown gall. Grape stock of the Rupestris St. George variety, according to experiments of Dr. George G. Hedgecock, show strong resistance to crown gall as well as to phylloxera. He also shows certain varieties of apples, such as Northern Spy, Ben Davis and Bellflower, to be very resistant. A large number of native species of plums are to be found in the United States, many of which are suitable for stock of the stone fruits. Among these are several types of hybrids that are vigorous and are used in certain sections as stock. There are Chinese and Siberian species that may be excellent for stone fruits. In California there are three or four wild species of Prunus that may be adapted for certain sections and certain fruits. One of these is the California wild plum, *Prunus subcordata*, var. Kelloggii or Sisson plum, found growing near Mount Shasta. Then there is the desert apricot, *P. eriogyna*, growing on the very edge of the desert. This is a bush, rarely a tree, from six to twelve feet high. The seedlings resemble the cultivated apricot somewhat in appearance of leaf. The pits germinate quickly, in ten to fifteen days, and if sown early in the spring they would not require layering. In general appearance and size the pits are quite similar to those of *Myrobalan*. A strong growing tap root is quickly developed. It is not known whether this species will easily transplant or how well it is adapted to the stone fruits. It is closely related botanically to the apricot. The desert almond, *P. fasciculata*, is native over a considerable area of Southern California. It is a small, slightly thorny shrub, about four to six feet high. Pits small, irregular in shape, thin walled, smooth, with sharp ridges. The Texas almond, *P. minutiflora*, maximum growth about twelve feet. It is found entirely in Texas and is often badly infected with crown gall. Then there is a Mexican almond, *P. microphylla*, which closely resembles the Texas almond. These would doubtless be adapted to the peach and almond, but might not show



Even should you own a big, engine-driven, power sprayer, there is an almost constant need for a light, powerful, hand sprayer. This

ACME Compressed Air SPRAYER

\$5.00 East of the Rockies

is the machine for small orchards and vineyards and for places where a power machine can't go. It handles perfectly any spray material.

This sprayer throws a spiral, mist-like spray, driven by an air pressure of up to 60 pounds.

The heavily galvanized, riveted, iron tank holds 3½ gallons of spray and empties itself on one charge of air.

The seamless brass air pump can be in or outside the tank, as you prefer. A positive-acting valve keeps all spray material out of the pump.

The nozzle with its spiral plunger—a patented, exclusive Acme feature—is non-corroding and non-clogging. The plunger cleans the nozzle at every operation.

Brass extension rod for tree spraying, and crooked nozzle for low-lying vines, can be furnished if desired. Heavy 3-foot hose and adjustable shoulder-strap are part of the regular equipment.

Write for ACME Catalog

There's a big line of Acme goods—sprayers (liquid or dust), corn and potato planters, fruit-picking sacks, etc. Your dealer probably carries Acme goods. If he doesn't, he will gladly order what you need from one of our Western distributors. They are:

WASHINGTON	OREGON
Marshall-Wells Hdw. Co., Spokane	Marshall-Wells Hdw. Co., Portland
Holley & Mason Co., Spokane	Portland Seed Company, Portland
Jensen-Kind-Byrd Co., Spokane	Polson Implement Co., Portland
The Chas. H. Lilly Co., Seattle	Mitchell, Lewis & Staver Co., Portland
Mitchell, Lewis & Staver Co., Spokane	
Polson Implement Co., Seattle	

But send for the Acme catalog today. Pick out your sprayer or planter and then see your dealer. If not near a dealer, send your order to us and we will supply you.

POTATO IMPLEMENT CO.
327 Front Street Traverse City, Michigan



The Acme trade-mark is on 400,000 planters and sprayers in use today on American farms

GREAT REDUCTION IN PRICES

Apples, Pears, Peaches, Prunes, Plums, Cherries, Apricots, Nut Trees, etc. Also Gooseberries, Currants, Strawberries, Grapes, Berry Bushes, Rhubarb, etc.

ALL OF THIS STOCK MUST BE SOLD

Write today submitting your want list for quotations; also ask about our premium offers, which are worthy of your consideration.

LAFAYETTE NURSERY CO., Desk A, Lafayette, Oregon

HOOD RIVER VALLEY NURSERY COMPANY

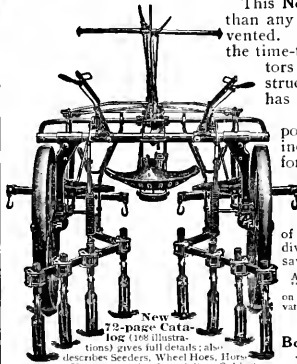
Phone 5634 Route No. 3, Box 227 HOOD RIVER, OREGON
Plantation four miles southwest of station, Belmont Road

We will be pleased to show you trees, apple trees that have a heritage, a quality that should be considered by everyone who plants a tree. Our trees are grown in clean hillside virgin red shot soil with clay subsoil, producing the most vigorous root system. Our buds are selected from the best bearing healthy Hood River trees that make the Hood River apple famous throughout the world. Our trees will give you satisfactory results in vigor, fruit and quality. Ask for catalog. We guarantee our products. Apples, pears, peaches, apricots, almonds and walnuts. A complete line of the best varieties of all kinds of fruits.

H. S. BUTTERFIELD, President

W. J. ENSCHEDE, Manager

Planet Jr. Cultivator



This No. 76 gives bigger, better results than any other one-row cultivator ever invented. It is a combination of the best of the time-tested principles of earlier cultivators into one simple, strongly constructed, easily handled machine that has no equal anywhere.

It cultivates, plows, and hills corn, potatoes, or similar crops 28 to 48 inches apart. No wood used except for break pins.

Built for thorough work and real, lasting service. Its superior construction of finest materials, accurately fitting parts, spring lifting levers, and variety of cultivating attachments make it yield big dividends year after year in time and labor saved and increased production.

Andrew Glenn, Wheelersburg, Ohio, writes: "I think the No. 76 Planet Jr. is the finest cultivator on the market today. Especially for potatoes this cultivator is worth a half-dozen other makes."

S L ALLEN & CO
Box 1106U Philadelphia Pa

We carry stock in San Francisco and Los Angeles. Agencies in all principal Pacific Coast cities.

New 72-page Catalog (106 illustrations) gives full details; also describes Seeders, Wheel Hoes, Horse Hoes, Harrows, Orchards, and Root-Cultivators. It is free. Send postal now.

much advantage over those we already grow. They have strongly developed tap roots.

Carefully discard all diseased trees, even if some have to be sacrificed that have only small galls. If the inspector does not throw out the diseased trees the grower should do so. The following spring the young trees should be carefully examined by digging away the earth about the crown down to the roots. If the trunk shows any evidence of gall formation the tree should be marked, either to be replanted or treated. A tree after the end of the first year is not so likely ever to contract gall, although it would be well to again inspect the trees at the end of the second season. When a tree is replanted where a diseased one has been grown care should be taken to use fresh earth in filling in around the tree.

If the galls are just beginning to develop tree surgery may be employed. This consists in cutting out the affected tissue with a sharp knife and painting over with some disinfectant. The best preparation to use is a bordeaux paste, which lasts a long time and is easily prepared as follows: One pound of bluestone (copper sulphate) dissolved in one gallon of water in a wooden or earthen vessel. This can best be done by hanging it in a sack in the top of the water. Two pounds of unslaked lime, slaked in about half a gallon of water. Some variation from these proportions may be made without greatly changing the value of the paste. Stir together when cool, making a light blue mixture about the consistency of whitewash. If the mixture turns to some other color before being applied it is an indication that something is wrong. Mix up fresh each day or two, as the mixed paste tends to deteriorate with age. It may be applied with a large brush in the same manner as whitewash.

The treated tree should be marked and examined again, for often the first treatment is not entirely effective and the galls may again begin to appear at the treated margins. If such is the case the tree should be again treated. The individual judgment of the operator must be used as to whether the small tree had best be replanted to treated. If one begins with the small orchard and is willing to give careful attention to this trouble there should be no difficulty in keeping the crown of the tree free from gall. The root one cannot expect to treat. It would be better not to take too much risk in treating badly galled trees of one year's growth in the orchard, as it is very questionable if such will ever become profitable commercial trees.

D. Crossley & Son, apple dealers of New York, never forget their friends and customers at New Year. This year they mailed out an exceedingly handsome and attractive calendar, which is meeting with much appreciation. D. Crossley & Son are large apple dealers in England, maintaining a branch house in New York City.

CHICAGO ST. LOUIS NEW YORK and the

main centers of population in the Middle West and the

EAST

Quickly and Pleasantly Reached

VIA

UNION PACIFIC SYSTEM

OREGON-WASHINGTON RAILROAD & NAVIGATION CO.
OREGON SHORT LINE—UNION PACIFIC

STOPOVER ALLOWED AT
HOT LAKE
OREGON
HOTTEST, MOST CURATIVE
SPRING IN THE WORLD

Dining, Sleeping and Observation Car Service up to the Highest Standard; Comfortable Appointments; Convenient Schedules; Direct Connections.

Steel Coaches — Block Signals

Any representative of this system will be delighted to assist you with information, tickets and travel service according to your needs. Call upon or phone the

CITY TICKET OFFICE
Third and Washington Streets
Portland, Oregon

Ask about Low Round Trip Fares to Sunny Florida



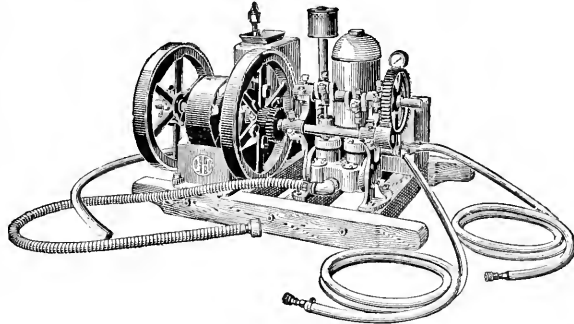
The San Jose Scale Insect, Etc.,

Continued from last issue

The San Jose scale differs from other scale insects in being many-brooded during the summer. Other scales with which it would be confused have but a single generation each year. In the Northwest a common scale insect is the oyster-shell bark louse. This long and narrow insect, several times larger than the San Jose scale, over-winters in the egg condition to hatch in early summer. The oyster-shell scale is mainly abundant in Western Washington and in those orchards of Eastern Washington at an elevation above 1,800 feet. Cottonwood trees are often afflicted with a scale known as *Aspidiotus aneylus*, which is almost indistinguishable from the San Jose scale. Oranges are sometimes received infested with another similar scale known as *Aspidiotus aurantii*, but as the scales of the citrus fruits cannot thrive on the deciduous fruits of the North, they need not be a cause for alarm.

Fortunately the San Jose scale can be quite easily controlled. It readily succumbs to applications either of oil sprays or of sulphur-lime. Normally, a great many individuals die through the agency of internal parasites or of such carnivorous insects as the Lady Bird beetles; some die of inclement weather or through inability to obtain a foothold when first born; many die from the poison they themselves develop in their food plant; but such deaths can be considered in no wise as reducing the danger from this pest. Summer spraying has never proved adequate, for a spray strong enough to destroy the old, heavy-shelled females will injure the foliage. During the dormant season trees will withstand a relatively strong application of spray, and for this reason, as well as for the fact that most of the individuals to be destroyed are the scarcely protected young, winter spraying has come into general custom. Since the insects occur so largely at the ends of branches and hide beneath bud scales, or even within the shell scale of their parents, it becomes necessary to drive the spray with force over every side of every limb, following the branches from the tips toward the trunk. The spraying should be done from a raised platform, using none but the Bordeaux type of nozzle attached to a crook-joint to direct the spray into the tree. For small trees the Bordeaux nozzle may be partly closed to avoid waste of the spray, but the solid, flat, driving stream from this kind of nozzle is essential for thoroughness. To quicken the application as well as to assure the penetration necessary for good results, a high pressure should obviously be maintained. Spraying should not be done in mid-winter, when the scales are frozen, nor should it be timed too late. After the buds have swollen it is much more difficult to force spray beneath them, and, moreover, it seems that when the scale insect has awak-

One Season's Work Repays You



AMONG your fruit-raising problems, if you are a really painstaking grower, seeking to gain your just profits at shipping time, is the spraying problem. Many a veteran fruit grower and truck gardener will assure you that you are not yet doing your best against the insect and fungous pests if you are not using

An I H C Spraying Outfit

This is because in all International Harvester spraying equipment you find the Titan engine—a long lived, most satisfactory engine; and thoroughly well built pumps, completely brass fitted and made for high pressure spray work.

I H C outfits are made for small and for large orchards, in several types—on skids, on portable truck, and complete with tank. You can detach the engine easily for any power work.

Let us direct you to the nearest I H C dealer who sells these outfits. Send for our interesting catalogue.

International Harvester Company of America

(INCORPORATED)

Crawford, Neb. Denver, Col. Helena, Mont. Portland, Ore.
San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah



Arcadia Irrigated Orchards

THE LARGEST AND MOST SUCCESSFUL ORCHARD PROJECT
IN THE ENTIRE WEST

7,000 acres planted to winter apples. Gravity irrigation. Located 22 miles north of Spokane, Washington, directly on the railroad. We plant and give four years' care to every orchard tract sold. \$125, first payment, secures 5 acres; \$250, first payment, secures 10 acres; balance monthly.

SEND FOR BOOKLET

Arcadia Orchards Company

Deer Park, Washington

FLOORS

"Clean Enough to Eat From" are Made so by



Large Sifter Can, with Full Directions, 10c



Old Dutch Cleanser

Chases Dirt

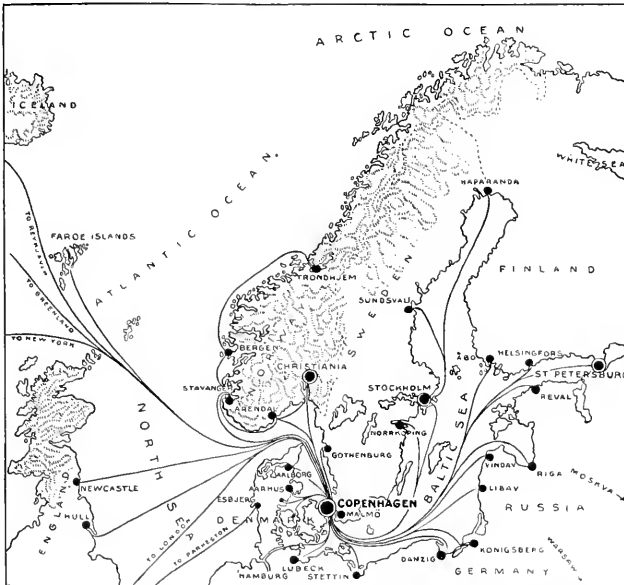
MAKES EVERYTHING 'SPICK AND SHAN'

ened and has resumed its feeding, it becomes more resistant to the sprays. As far as the San Jose scale is concerned fall spraying is as effective as the spring application; but custom decrees that the spraying should be done in March. A single application of 3-degree sulphur-lime, if given with the utmost thoroughness, will usually suffice to kill all the San Jose scale. However, it appears that quite lately certain strains of this insect have developed more or less resistance to the action of this spray. Sulphur-lime destroys mainly by extracting oxygen from the insect, and so kills by a sort of chemical suffocation. This process, rapid at first, is continued over some time. A few weeks after the spraying, the action of the sulphur obtained from the disintegrating sulphur-lime adds to the destruction. Thus it is that insects sprayed with sulphur-lime may linger for weeks before dying. Usually this spray will kill all of the scale within a few weeks or even days, but in some districts of the Northwest, as well as probably elsewhere, some few individuals retain a remarkable tenacity of life and commence their growth in the spring even though coated with spray. It appears that oil sprays are quicker in action and even more destructive than sulphur-lime. For this reason they are to be recommended, especially in those districts where sulphur-lime has failed to give satisfaction. The living San Jose scale is provided with a yellowish body juice. Shortly after death this juice becomes oily in character and of a deeper yellow color. After the oily sludge the insects dry out and darken. A few weeks after spraying, therefore, the effectiveness of the treatment can be readily ascertained by rubbing a knife blade flatwise over an infested twig. The character of the scrapings, whether juicy, or scurfy, will indicate the condition of the insect.

By way of a direct prescription, under Washington conditions, the following treatment may be summarized: (1) Spray in February or early March, just as the buds begin to swell. (2) Use preferably an eight-per-cent emulsion of crude petroleum oil, or sulphur-lime, testing 3 degrees Beume, i. e., containing one pound of sulphur and one-half pound of lime to every five gallons of completed spray, which is equivalent to a dilution of one to thirteen of standard (33 degree) factory-made concentrated sulphur-lime. (3) Use the penetration system of spraying; keep the pressure high; spray downward from a raised platform; use only the Bordeaux nozzle attached by a crook-joint, and then wet every speck of surface of the tree. If thoroughness were practiced as well as it is preached, spraying would cease to be a continual costly drudgery.

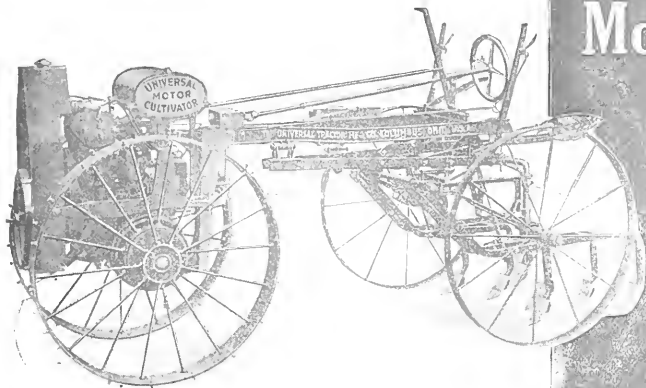
Harrison Nurseries, of Berlin, Maryland, are mailing out a very handsome catalog illustrated in colors, with some beautiful pictures of different varieties of fruits.

Scandinavia and the Baltic Market



We have a good outlet in the markets shown on above map. We handle apples only on a consignment basis. All consignments have our personal attention. Have you anything to offer? Do not fail to write or cable us.

ERNST C. LOHSE & CO.S EFT., Copenhagen
 Cable Address: ERNST LOUHE Fruit and Produce Agents



The UNIVERSAL Motor Cultivator

For the Orchard

—The Farm

—The Vineyard

—The Garden

The Only Tractor
Suitable to Perfect
Orchard Cultivation
—A Power Plant for
Your Stationary Work

TO THE Orchardist the Universal is almost indispensable. It will enable him to get the quick dust mulch, for the preservation of moisture, and stir the soil at low cost, to keep the weeds out. And besides all this, if the orchardist is also a farmer, the Universal will help him in a hundred ways.

IT CULTIVATES corn, cotton, potatoes, kaffir, sorghum, sugar cane, federita, tobacco, tomatoes, garden truck, orchards, vineyards, etc.

IT PULLS mower, rake, spike tooth harrow, drag, rollers, small disk harrow, cultivators of various kinds, weeders, etc.

IT PLANTS corn, cotton, sorghum, clover, alfalfa, potatoes, garden truck, etc.

IT OPERATES pump, wood saw, feed grinder, corn sheller, washing machine, churn, electric light plant, or any other light appliance of the modern farm.

Toughest heat treated drop forgings of alloy steel. Steel and malleable iron castings. All crank and cam shaft bearings made of special bearing bronze. All working parts enclosed in oil-tight housings. All parts machined to the finest limits.

The "V" type, two cylinder, water cooled motor has 3½ in. bore and 5 in. stroke, automatic plunger pump lubrication, thermosiphon radiator, Holley carburetor, Atwater-Kent ignition, automatic governor, controlled from the seat while machine is in motion, worm drive running in oil bath, expanding ring clutch, one speed forward and reverse, gear ratio 55 to 1, weight 1,000 lbs., speed 1 to 4 miles per hour, motor develops 10 h. p. on brake test, pulling horsepower equal to team medium sized horses.

Get This Book Let it tell you the complete story of this wonderful tool, the test to which it has been put and its development into the modern, practical motor of the fields. When you consider that this tool costs you less than a good team and that it does more work, more hours for less money, you will want to read the full story. The book gives full specifications and much valuable information. Why not drop a card or a letter and get it at once, prepaid? Address



The World — Our Orchard

STEINHARDT & KELLY
101 PARK PLACE
NEW YORK

Unquestionably the most
important factors in
the fruit industry
of the
United States

Our Market — The World

BETTER FRUIT

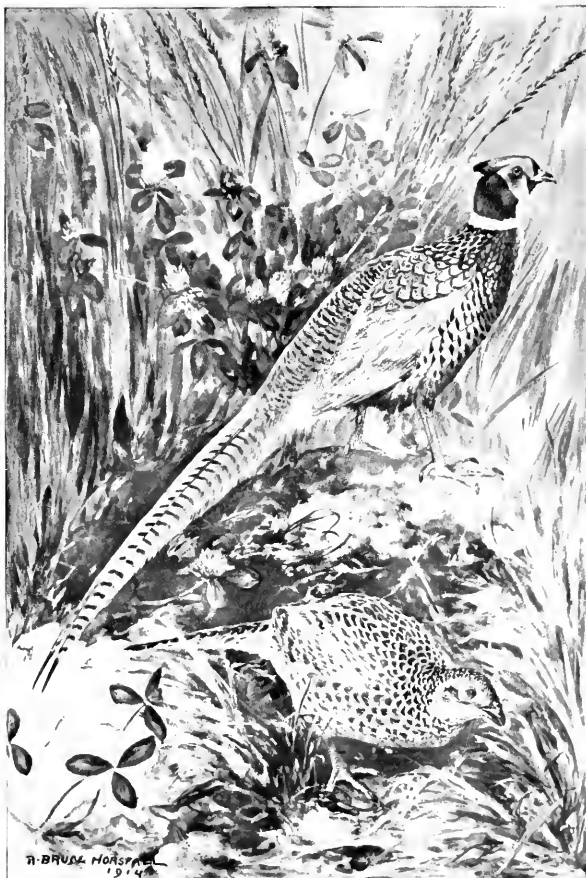
VOLUME IX

MARCH, 1915

NUMBER 9

GROWERS' COUNCIL OF 107

AND THE PLAN OF CONTROLLING MARKETING CONCERNS AND
OBTAINING FULL MARKET VALUES FOR OUR FRUIT



The China pheasant was introduced into Oregon by the late Judge Denny, and has increased rapidly. It is the most beautiful game bird in the world and the most fascinating for the sportsman, adding much to the attractiveness of the Northwest. Eastern visitors to the Panama-Pacific Exposition will see from the car windows large flocks of pheasants throughout the entire Willamette Valley, feeding in the orchards and farms.

BETTER FRUIT PUBLISHING COMPANY, PUBLISHERS, HOOD RIVER, OREGON

Subscription \$1.00 per Year in the United States; Canada and Foreign, Including Postage, \$1.50.

Single Copy 10 Cents

Effective February 1

Making Total Reductions 45 Per Cent in Two Years To Give Always the Most for the Money

We are glad again—for the third time in two years—to announce a big reduction on Goodyear tires, effective February 1st.

Goodyear policy on price is to give the utmost in a tire at the lowest possible profit. Our reductions are made to that end, without ever reducing the quality.

That always means, with our matchless output, more for the money than any other maker can give.

As rubber came down our prices came down. As our output multiplied, reducing factory cost, our prices came down with it. In two years our reductions—including the present—have totaled 45 per cent.

Last year we increased our output 25.6 per cent. A few days ago the embargo on rubber was modified so that supplies seem assured. The market price for rubber seems for a time established. Fabric costs less than last year. So, under our minimum profit policy, we announce this new reduction.

Only Fair Basis

We consider profit margin on a tire the only fair price basis. We keep that margin just as low as our line allows.

While we do that, Goodyear tires will always undersell any tires that compare with them. That is because we have the largest output. We have a new factory, modernly equipped. And we have world-wide facilities for buying rubber, of our extra grade, at the lowest market price.

For a long, long time most tires have sold much above Goodyear prices. Some have sold one-third higher. A few have sold lower, as some always will, because of less rubber, less quality. But we can and do, under all conditions, give more for the money than any rival tire can offer.

The Best We Know

Goodyear Fortified Tires offer the best we know. They are built to give you the lowest cost per mile. They minimize tire trouble in five costly ways employed by no other maker. And they are always the same, regardless of price reductions.

Most tires will always sell higher, because of smaller output. Some tires will always sell lower because of lower standards. But we promise you that none will ever give better than Goodyear value.

This policy has made Goodyears the largest-selling tires in the world. It will make them more so as more men find them out.

Ask your Goodyear dealer for our new price on the size you buy.

Makers of Goodyear Tire Saver Accessories and Goodyear Wing Carriage Tires and Other Types.



LILLY'S SOLUBLE SULPHUR COMPOUND SPRAY

The Sulphur Spray in Dry Form

A Marvelous Success—East, West and Everywhere

Manufactured on Pacific Coast under Niagara Patents
Advertised and sold in the East as

NIAGARA SOLUBLE SULPHUR COMPOUND

This powdered spray material dissolves instantly in hot or cold water and, in the long run, there is no better or cheaper spray material

For the Control of San Jose Scale

READ THESE TWELVE REASONS

Why Lilly's Soluble Sulphur Compound is the economical, practical, efficient and convenient spray material for the practical fruit grower:

1. 100 pounds of LILLY'S SOLUBLE SULPHUR COMPOUND is equivalent to 600 pounds of commercial lime-sulphur solution. Why pay freight on water?

2. A 100-pound drum of LILLY'S SOLUBLE SULPHUR COMPOUND makes more diluted spray material than a barrel of lime-sulphur solution; reducing the actual cost of material.

3. LILLY'S SOLUBLE SULPHUR COMPOUND is neat and convenient to handle.

4. LILLY'S SOLUBLE SULPHUR COMPOUND comes in inexpensive metal drum, which when empty may be thrown away; no money paid out for barrels; no bother returning empty packages.

5. Its powdered form makes leakage impossible.

6. LILLY'S SOLUBLE SULPHUR COMPOUND keeps indefinitely anywhere, and can be held over from one season to another without loss.

7. LILLY'S SOLUBLE SULPHUR COMPOUND is equal to and has proven many times to be superior to lime-sulphur solution in insecticidal and fungicidal value.

8. A drum of LILLY'S SOLUBLE SULPHUR COMPOUND may be carried in buggy or automobile, making hauling convenient and inexpensive. One man handles it easily.

9. LILLY'S SOLUBLE SULPHUR COMPOUND may easily be obtained in small packages. It is put up in 100, 10 and 1-pound cans.

10. LILLY'S SOLUBLE SULPHUR COMPOUND is cheaper to use than lime and sulphur solution; less expense in hauling and handling; no loss from leakage and crystallization; keeps indefinitely, and no empty barrel to return.

11. Will not wash off the trees.

12. Leaves a fine, waxy finish on fruit.

LILLY'S SPRAY BULLETIN No. 30 tells more about this wonderful spray. It also tells HOW TO SPRAY FOR SUCCESS. It deals with spray problems in a masterly way. It is worth money to you. You can have it for the asking.

Go to your dealer NOW and tell him you want LILLY'S SOLUBLE SULPHUR, or send to us direct at Seattle or Portland and we will ship from the nearest distributing point.

\$7.50 per 100-lb. drum
1.25 per 10-lb. can
.20 per 1-lb. can

f.o.b. Seattle, Portland, San Francisco, Los Angeles, Spokane, North Yakima, Hood River and Medford.

If you are interested in Farming, Gardening, Fruit Growing, Poultry Keeping, Bee Keeping, Fertilizing, Spraying, or any branch of agriculture, you cannot afford to be without a copy of LILLY'S ANNUAL. We will be glad to mail it to you, free.

THE CHAS. H. LILLY CO.
SEATTLE PORTLAND

SEEDS

Six packages of our dependable Northern grown seeds sent absolutely Free to those who send for our handsomely illustrated and descriptive seed catalogue. All we ask is that you

Send 10 Cents

to cover cost of packing and mailing. Highest quality seeds; prices reasonable; the collection follows:

- RADISH, Scarlet Beauty . . . Value 10 cts.
- TURNIP, Purple Top White . . . " 5 cts.
- ONION, Large Red . . . " 10 cts.
- SPINACH, Broad Leaf . . . " 10 cts.
- LETTUCE, Dew Drop . . . " 10 cts.
- MIGNONETTE, Colonial Mixture " 10 cts.

Write today and receive one of the 10,000 fifty-five cent collections, which we are giving away to get our catalogues into new territory.

CHAS. J. CHERRY & CO.
149 Vine Street Rockford, Ill.

The Paris Fair

Hood River's Largest and Best Store

RETAILERS OF

EVERYTHING TO WEAR

AGENTS FOR

HAMILTON & BROWN AND
THE BROWN SHOES

HART, SCHAFFNER & MARX
CLOTHES

MANHATTAN SHIRTS

JOHN B. STETSON HATS

NEMO CORSETS

Strictly Cash—One Price to All

Things We Are Agents For

Knox Hats

Alfred Benjamin & Co.'s Clothing

Dr. Jaeger Underwear

Dr. Deimel Linen Mesh Underwear

Dent's and Fownes' Gloves

Buffum & Pendleton

311 Morrison Street

PORTLAND, OREGON

IF YOU WANT TO MARKET
YOUR

FRUIT

RIGHT

ALWAYS SHIP TO

W. B. Glafke Co.

**WHOLESALE FRUITS
AND PRODUCE**

108-110 Front Street
PORTLAND, OREGON

W. H. DRYER

W. W. BOLLAM

DRYER, BOLLAM & CO.

GENERAL

COMMISSION MERCHANTS

128 FRONT STREET

PHONES: MAIN 2348
A 2348

PORTLAND, OREGON

LEVY & SPIEGL

WHOLESALE

FRUITS AND PRODUCE
Commission Merchants

SOLICIT YOUR CONSIGNMENTS
Top Prices and Prompt Returns
PORTLAND, OREGON

STORAGE

Ship your Furniture
to us to be stored
until you are located

TRANSFER & LIVERY CO.
Hood River, Oregon

The Old Reliable

BELL & CO.

Incorporated

WHOLESALE

Fruits and Produce

112-114 Front Street
PORTLAND, OREGON

Richey & Gilbert Co.

H. M. GILBERT, President and Manager

Growers and Shippers of

**YAKIMA VALLEY FRUITS
AND PRODUCE**

Specialties: Apples, Peaches,
Pears and Cantaloupes

TOPPENISH, WASHINGTON

Established 1898

W.P. KRANER & CO.

Importers and Tailors

2nd Floor Couch Bldg.

109 Fourth Street

Portland, Ore.

GEO. E. KRAMER C. W. STOSE

Mark Levy & Co.

COMMISSION
MERCHANTS

Wholesale Fruits

121-123 FRONT AND
200 WASHINGTON ST.
PORTLAND, OREGON

A PANORAMIC VIEW

of the

Famous Hood River Valley
showing

13,000 acres of apple orchards,
Mount Hood, Mount Adams and
the Columbia River Gorge.

40 inches long Price \$1.00

SLOCUM & CANFIELD'S BOOK AND ART STORE
Hood River, Oregon

W. F. LARAWAY

DOCTOR OF OPHTHALMOLOGY

EYES TESTED  LENSES GRIND

Over 30 Years' Experience

Telescopes, Field Glasses
Magnifiers to examine scale

Hood River Oregon and Glenwood Iowa

BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

Call for Organization Northwest Fruit Growers' Council

In pursuance of the authority conferred by the Fruit Growers' Convention at Seattle, January 22-23, the Northwest By-Products Board issues the following call, for the conducting of such proceedings as will enable all the growers in all the districts to be adequately represented at the meeting to be held in the Commercial Club at Tacoma, Wash., at 9:30 a. m. Monday, February 15:

The purpose of this meeting shall be to create a growers' council, which shall have general control of the marketing of the fruit of the States of Oregon, Washington, Idaho and Montana. This control shall be exercised through a governing board of three or five, or such number as shall be determined, but the number of such board should be, in the interest of efficiency and expense, made as small as possible; the members of such governing board to be selected by the growers' council as a whole. The particular functions of this governing board shall be to exercise a supervision over the marketing of the fruit crop in the manner outlined by the attached memorandum signed by organizations and agencies now handling in excess of 80 per cent of the total tonnage of this territory.

The growers' council and the governing board shall exercise such other and additional powers as may be necessary to establish a firm market price for fruit, and to do such things as shall be required to prevent the demoralization of the market, and also render such further service and assume such functions as may be deemed advisable to protect the best interests of the growers. Among these special functions that have been suggested for later consideration are the following: Reducing the cost of marketing; establishing a uniform grade and pack in effect throughout the Northwest; adopting such methods of marketing and advertising as may greatly expand the outlet for our Northwest fruits. The growers' council, as a whole, shall exercise general supervision of all the work of the governing board, but to gain efficiency and save expense, the members of the growers' council in each district should organize and elect district officers, and the various chairmen should make up a general supervisory board to be called into consultation by the governing board when necessary.

The first growers' council shall be composed of three members at large and one additional member for each 250 cars or fraction thereof marketed from each of the following districts:

(1) Hood River, White Salmon and adjacent shipping points; (2) Walla Walla, Milton, Dayton, Waitsburg and adjacent points; (3) all of Southern Idaho and Southeastern Oregon; (4) Spokane, Moscow, Garfield, Lewiston and adjacent points; (5) Wenatchee, Cashmere and all up-river points; (6) the entire Yakima Valley from Kennewick up; (7) Rogue River and Western Oregon; (8) the State of Montana.

For the purpose of establishing the number of such members, each district is asked to file with its credentials, certificates, signed by the railways serving that territory, or by the horticultural inspector in charge of

fruit for shipment in a commercial way.

It is the judgment of your committee that the growers of each individual district should determine the method to be followed in selecting representation in this first fruit growers' council, but we would strongly recommend that a thoroughly representative method of selection be prepared in order that all of the growers in every part of each district may be interested, and may feel that they are represented in the membership of the council as selected. With that thought in mind, we suggest the following plan of procedure in each district: That a meeting of those in attendance at the Seattle convention be held immediately for the purpose of discussing the actions of that convention and to go over the terms of this call. That such meeting should select an organization committee for the purpose of issuing the call and supervising the proceedings to choose the district members of the growers' council.

On a day sufficiently far in the future to permit of the circulation of full notice, a caucus should be called at each shipping point in the district to be participated in by all owners of orchards shipping through, or living tributary to that point. These growers in caucus assembled should select such number of delegates as they will be entitled to name on a basis of one delegate to each 20 or 25 cars shipped, or such other basis as may be established. On the date named by the organization committee a general district convention of all such local delegates should be held as some central point in the district for the purpose of electing the number of members in the growers' council to which that district is entitled. In holding such caucuses, or such conventions, it is important that every interest among the growers be given a full opportunity to be heard and to be represented. This movement can be a success only as a movement of all the growers.

The memorandum adopted at the Seattle convention especially provides that representation be given to the minority among the growers. In our judgment, this is superficial, as this is a movement for all of the growers to participate in, and the interest of every grower must be equitably represented, large as well as small. Every important group or association of growers must feel satisfied with their representation. No organization or group of men can gain any personal advantage by controlling the growers' council. To succeed in doing so would

Features of this Issue

CALL FOR FRUIT GROWERS' COUNCIL

PLAN PROPOSED BY NORTH PACIFIC FRUIT DISTRIBUTORS

PLAN PROPOSED BY NORTHWEST FRUIT EXCHANGE

PLAN AS UNANIMOUSLY ADOPTED BY FRUIT GROWERS' COUNCIL OF PACIFIC NORTHWEST

HARMONY AMONG MARKETING CONCERNS

REPORT OF HORTICULTURAL INSPECTOR RHODES OF THE STATE OF WASHINGTON

that district, or by such other authority, or authorities, as shall be generally recognized, setting forth the exact number of cars of commercial fruit produced in that district in the season of 1914. This arbitrary establishing of districts, and of the basis of representation, was made by the convention for the purpose of starting the organization, and changes will have to be made as found necessary. The powers of the growers' council, and the term of office of those elected at this time, will be determined in the permanent organization as perfected at the Tacoma meeting, but the members of the growers' council as now elected should serve for a term of approximately one year, and through the season of 1915.

Any person owning and operating a commercial orchard in the district from which he is chosen shall be entitled to a seat in the growers' council. Commercial orchard shall be construed to mean an orchard now producing or that soon will be producing

be to defeat the entire purpose of this movement to bring about a protective community of all the growers. The attention of each district is called to the importance of putting this movement before every one engaged in marketing fruit. The individual selling his own crop and the commission man selling the crops of others are just as vitally interested in the protection of the price as is the grower in any present organization. The preliminary agreement has been signed, but the books are still open, and every shipper of fruit should be brought in line.

The entire purpose of this movement for the organization of a growers' council is to provide a way in which the growers can completely control the price of their fruit and all marketing, and to put in effect the plan agreed to by the marketing agencies at Seattle. It is therefore important that the initial plan as adopted by the growers' council shall be a simple proposition carrying into effect the Central Board of Control. The functions and duties of this board will develop under investigation and experience, but the immediate need is some direct way of protecting the market from demoralization. Marketing the fruit at a profit is the essential thing, and this cannot be accomplished with by-laws, but must be the result of successful control of the market. The members of the committee will be glad to endeavor to explain any points that may arise, but the movement is in the hands of the growers themselves and the representation that they elect to send to Tacoma.

The following resolution was adopted by the Seattle convention:

"This convention wishes to declare its belief as follows: That there should be created a small board for the purpose of supervising all agencies handling and selling the fruit of the growers of the four Northwestern States. The purpose of this board to be put into effect such plans as shall be found necessary for the establishment of a firm market price for the Northwestern fruit and for the carrying through of such work as shall be found advisable to prevent the demoralization of the market. This central board shall be chosen by and shall operate under the direction of a growers' council representing all of the Northwestern fruit districts, composed of three members at large and one additional member for each 250 cars or fraction thereof marketed from that district.

"For the purpose of setting in motion the machinery that shall create this council, we declare it the belief of this meeting that Hood River and adjacent shipping points shall constitute one district; that Walla Walla, Milton, Dayton and adjacent points shall constitute another district; that all of Southern Idaho shall constitute another district; that Spokane, Moscow, Garfield and adjacent points shall constitute another district; that Wenatchee, Cashmere and all up-river points shall constitute another district; that the entire Yakima Valley

from Kennewick up shall constitute another district; that Western Oregon shall constitute another district; that the State of Montana shall constitute another district.

"In creating these arbitrary districts this convention realizes that it is merely providing a framework, but it would recommend in the selection of the first growers' council under the provisions of this call that the members of the council from each district be as nearly as possible from the principal shipping points in that district in proportion to the tonnage of each in order that every part of every district may be represented in the growers' council.

"This convention would make it a condition of the initial formation of the growers' council that the members of the council be selected to thoroughly represent the growers, without regard to the marketing organizations with which they may now be affiliated. The selection in each case being made in duly and properly called conventions in which all the growers shall be entitled to participate, provided that in those districts where there exists such factional feeling between the members of the different associations, that it is not advisable to make such blanket appointments that the growers marketing their fruit through each marketing association shall be entitled to name at least one of the members of the council. Under no circumstances, however, shall any salaried employes of the existing marketing agencies be entitled to membership in this growers' council. We regard this provision as superfluous, because we are convinced that the growers in each district will see the wisdom of giving the fullest possible representation to all growers of fruit affiliated with any organization, including the independents.

"In adopting this program, this convention realizes that it cannot attempt to dictate what shall be the final program of the growers' council that is created in this way, but expresses this opinion for the purpose of crystallizing thought in all of the fruit growing districts in order that there may be brought into existence a growers' council that will thoroughly so represent the growers and that can create an organization that will so represent the growers that the marketing of all fruit can be controlled. We appreciate the good work that the by-products committee has done. We also appreciate the importance of taking the fullest advantage of the fine representation present at this meeting. In order, therefore, that we may go back to our homes with as near a practical plan in prospect as possible, we recommend that the by-products committee discuss every feature of this plan with the heads of existing marketing organizations, and that a joint meeting of the heads of these marketing organizations with this convention be held in this room at 1:30 Saturday afternoon, January 23, for the purpose of endeavoring to add to this expression of opinion. We would further recommend that the ex-

isting by-products committee be asked to supervise and assist in the questions that will arise in the naming of the initial fruit growers' council, in order that there may be some responsible agency that will create the necessary machinery to bring this organization about."

Following is the agreement signed by the marketing agencies:

"Wishing to express their complete accord with any movement designed to promote the marketing of the North Pacific fruits, the undersigned selling agencies or distributors do hereby agree that in case the growers of the four Northwestern States representing in districts and through the affiliated agencies seventy-five per cent of the total tonnage, form a central governing board for the purpose of regulating the marketing of their products in order to get the best distribution and to prevent the demoralization of prices, that we will, should we be so requested, join with the said governing board in studying the crop and marketing conditions with a view to helping the growers to estimate the marketing value of their products, and will furnish to said governing board at the close of each day's business, and sooner in special cases, copies of all quotations, sales reports, sales records, sales returns, inspector's reports, and all letters, telegrams and conversations that have a direct bearing on the selling of the fruit. We further agree that, if requested by the growers so to do, we will remit to such central governing board not to exceed one-half ($\frac{1}{2}$) cent per box on all apples and pears, and one-quarter ($\frac{1}{4}$) cent per box on all of the small fruit, that we may market, when the returns are received and made, this amount being deducted as a charge in making settlement for the fruit.

"This agreement is signed with the express understanding that it is merely a declaration of policy, and that changes and additions will have to be made as found necessary in evolving a full working agreement so as to insure success among the parties at interest. Yakima County Horticulture Association, by W. M. Nelson; Richey & Gilbert Co., by H. M. Gilbert, Pres.; Wenatchee Produce Co., by Conrad Rose; Wenatchee Fruit Growers' Association, by W. T. Clark; J. Macphree Ferguson; J. E. Shannon; Spokane Valley Growers' Union, by Edward Pierce; North Pacific Fruit Dist., by H. F. Davidson, Pres., by J. H. Robbins, Genl. Mgr.; Northwestern Fruit Exchange, by Reginald H. Parsons, Pres., by W. F. Gwin, Genl. Mgr. (according to reservations made in minutes of this meeting); Wright Fruit Company, by J. Howard Wright; Pomona Ranch, by J. L. Dumas; Arcadia Valley Growers' Association, by A. G. Craig, Pres."

The Fruit Growers' Council met as per the call at Tacoma. Permanent officers and committees were elected, names and addresses of whom will be found elsewhere in this issue.

Present Definite Plan of North Pacific Fruit Distributors

THE following is a plan presented by the North Pacific Fruit Distributors at the Seattle conference of growers held January 22, which was referred to the Tacoma meeting held February 15, for further consideration:

"Whereas, the fruit industry of the Northwest is in a serious position and threatened with disaster because of a lack of proper distribution and because of uncontrolled competition between the different shippers, arising from the larger number of agencies engaged in marketing the fruit, each one operating independently, and each one competing with the other in the same markets; and, whereas, there are constant charges and counter-charges of price cutting and improper and disastrous competition between these various agencies which result in prices to the producer below the cost of production, and yet do not result in a proper distribution so as to increase consumption; and, whereas, there is at the present time but a small percentage of the acreage planted to tree fruit in the Northwest now in bearing, and there will be a very rapid increase from year to year in the tonnage and shipments until a total output will undoubtedly be reached amounting to at least 50,000 cars annually, and such a large crop cannot be profitably marketed except by some harmonious and united plan of co-operation between growers and shipping agencies;

"Now, therefore, for the purpose of securing, so far as possible, a proper and legitimate co-operation which will lead to the securing, for the benefit of the grower, of the full amount to which he is entitled for his fruit in the markets of the world, and for the purpose of investigating the charges of unfair business methods between the various shippers, and to keep records relating to the shipments and sales of Northwestern fruit, be it resolved, that there be established and maintained a board of three to be known and designated as the Fruit Growers' Advisory Bureau; that this board shall be appointed in such manner as those concerned may determine, and that its members shall be appointed to serve, one for one year, one for two years, and one for three years, any vacancy occurring by expiration of term, or otherwise, to be filled by the remaining members of the board, such appointment, however, not to become effective until confirmed by seventy-five per cent of the affiliated tonnage; any member of the board or other officer may be recalled and any order made by said board reconsidered or vacated by the vote of those affiliated with the bureau controlling seventy-five per cent of the affiliated tonnage; that the members of this board shall not be fruit growers nor connected in any way with any organization engaged in the business of producing or selling fruits, either fresh or processed; that one member of said board, who shall be the chairman thereof, shall devote all

of his time to the business thereof and shall receive such salary as may be from time to time determined; that the other two members of the board shall be entitled to expenses and per diem whenever engaged in the business of the board; that said board shall establish and maintain an office in Walla Walla, Wash., as the most central and convenient city which is not the headquarters of any large marketing agency. The board shall employ such clerks and assistants as may be found necessary to carry on the work contemplated; the expenses to be paid from a fund to be raised by such minimum assessments upon the tonnage handled by the affiliated members as the board shall from time to time determine to be necessary therefor, any surplus which may remain in such fund at the end of the season to be prorated back to the contributing members.

"Be it further resolved, that all shippers of tree fruit in the four Northwestern States be invited to affiliate with said board and to sign a contract to that effect, in which they agree to submit to said board daily copies of all telegrams and letters passing through their offices relating to the sale or disposition of fruit; to file with said board invoices and account sales showing the true record of each and every sale made by them, together with a full and true statement of any allowances or rebates made thereon, and to furnish such other data relating to the sale and disposition of fruits as may be from time to time required by the board; that such reports, letters, telegrams and other information shall be verified as to accuracy and completeness by affidavits when so required; that they will, at the beginning of each season, file with said board a copy of the grades and grade rules which they are advertising to their customers and in accordance with which they propose to sell during the current season, and will, from time to time, file with said board a full and complete price list of the commodities offered by them to the trade. They shall agree also that they will not dispose of their fruit by open consignment to any dealer, broker, factor, agent or commission man, except in cases of damaged or rejected cars or under other peculiar circumstances which make it impossible or difficult to dispose of the car otherwise. Auction sales to be permitted only under such rules and regulations as said board may establish. Each affiliated member shall agree to pay the assessment aforesaid or such other assessment as may from time to time be agreed upon by a tonnage vote.

"Be it further resolved, that said board shall receive, file and make proper records of such reports, information, letters and telegrams, but all such records shall be for their own information only, shall be kept by them secret and shall not under any

circumstances be turned over to rival organizations for their inspection. This rule shall apply except so far as it may be necessary to determine and substantiate the decisions of the board in questions of price cutting and improper business methods referred to them for decision. Said board shall be authorized to entertain, investigate and determine charges of price cutting and improper business methods, and shall be authorized at the close of each season to publish a detailed statement of prices obtained in each fruit growing district by each of the affiliated organizations or shippers. Said board shall have power and authority to make any examinations which it deems necessary to determine any facts in relation to prices received, brokerages paid, allowances, rebates or refunds granted or other matters necessary to be determined to carry out and fulfill the ends and purposes sought in the establishment and maintenance of said bureau, and in connection therewith may employ experts to audit and expert the books and accounts of any affiliated shipper. In the event that such examinations or audit shall show that the returns and reports made by said shipper are not correct and true or that his books are not accurate, or there has been any effort to conceal or misrepresent any fact properly the subject of inquiry by said board, then the cost of making such audit shall be paid by the shipper to whom said books and records belong.

"Be it further resolved, that said board shall, from information filed with it as aforesaid, and from other data and information which it may be able to obtain, determine from time to time what is the fair market value of the various tree fruits being marketed by the associations and shippers affiliated with it, and shall endeavor to prevent them, in so far as practicable, from selling below these prices; that the prices so established shall also be used as a basis to determine whether or not any affiliated shipper is cutting prices or selling or offering to sell fruits below the prices which they are reasonably worth upon the market; that the prices so fixed and determined by said board shall be used only for such purpose and shall not be given out to the public.

"Be it further resolved, that this resolution shall become effective and said board shall be instituted and vested with the authority herein provided, only when the shippers of eighty-five (85) per cent of the tree fruits in the four Northwestern States have affiliated and entered into the agreement aforesaid; and shall continue thereafter only so long as such a percentage shall continue in such affiliation. Said board shall have power to adopt such rules and regulations as shall be necessary to carry out the purposes for which it is created, as above outlined."

The First Canal Shipment Gets to New York O. K.

ACCORDING to a letter received recently by H. F. Davidson from Wilmer Sieg, the steamship Ohioan, which carried the first Hood River apples to New York by way of the Panama Canal, had arrived with fruit in the best of condition. "The shipment included 23 carloads," said Mr. Davidson, "and Mr. Sieg writes me that the total freight saving amounted to about \$2500. The North Pacific Fruit Distributors took all available space on the ships plying between North Pacific ports and New York, the whole lot amounting to some 60 carloads."

The Packer gives the following detailed facts relative to the Ohioan shipment: There is indeed some glad news for the apple grower of the Northwest and it comes just at the time when things look blue and when some authorities are predicting a future enormous production of box fruit with a subsequent disaster of large financial proportions. The first test of bringing fine box apples from Northwestern producing sections through the Panama Canal to the Northeastern ports has proven a wonderful success. When the difference between the cost of transportation by boat is compared with that by rail is considered, the man interested can only look forward to a sort of a revolution, in the way of increased profits, for producing the fruit. The Ohioan, the first boat to come from the Pacific Coast ports through the canal to New York with box apples, arrived January 22. The fruit was unloaded in the pink of condition and most of it was exported.

The Ohioan left Portland, Oregon, December 12, with 13 cars of box apples. She went to Seattle and picked up ten cars more. Altogether, her perishable cargo was 23 cars of apples for the North Pacific Fruit Distributors; 10 cars of Newtown Pippins, for Simon, Snuttleworth & French Co., New York; one car of box apples for Steinhardt & Kelly, New York, and five cars of celery for the California Vegetable Union. All of this stock showed up in prime condition upon arrival. The boat sailed from Portland without refrigeration. Cold air was turned on December 19, seven days after leaving Portland, and on which date the boat sailed for New York. From the time she left Portland until she arrived in New York, making the stop at Seattle, she was out 40 days. The freight on the 23 cars shipped by the Distributors, including the cost of transportation from inland points to Pacific tidewater and thence to New York by boat, including refrigeration, was \$5300. The freight direct to New York from shipping points on the 23 cars, coming by rail, would have been \$8,500. The saving in transportation charges on the 23 cars, according to the figures of Wilmer Sieg, was \$3200. Mr. Sieg figured out the difference between the boat rate and the rail rate from two of the largest apple shipping points

in the Northwest to New York. By shipping from Hood River to the Pacific Coast, then by boat through the canal, the shipper is saved 16 cents per box on ventilated service and 27 cents per box on refrigerated service. The saving on fruit from Yakima is 10 cents and 21 cents per box, respectively. There are now three boats on the way through the canal to New York. The Santa Clara, of the Grace line, has 10 cars of apples; the Montanan, 15 cars, and the Panaman, 20 cars. The last two boats belong to the American-Hawaiian line. Most all of the fruit that came on the Ohioan was exported.

It is to the large European markets that the growers of fine Northwestern apples will in the future look for a profitable outlet. At the present time, the ocean freight rate is almost prohibitive; in fact, it is a difficult mat-

ter to get space. A great many of the boats have been taken off. So far as can be learned, there is not a German flag on the high seas. The English have taken a great many of their boats to use as transports. But the enormous amount of apples which the English and neutral countries have taken from this country so far this season is indicative of what the demand will be for our fruit over there under normal conditions. Up to Saturday of last week, we had exported to these countries about 1,879,864 barrels and boxes against 1,463,841 barrels and boxes for the same time a year ago. This is about 400,000 packages more taken by England and one or two neutral countries as compared with all of Europe last year. At the present time, the freight rate, both rail and ocean, from the Northwest to these countries, via New York, is \$1.08 per box to London and 78 cents per box at Liverpool. A rate of \$1.05 per box would apply to Hamburg.

Report of F. N. Rhodes, District Horticultural Inspector State of Washington

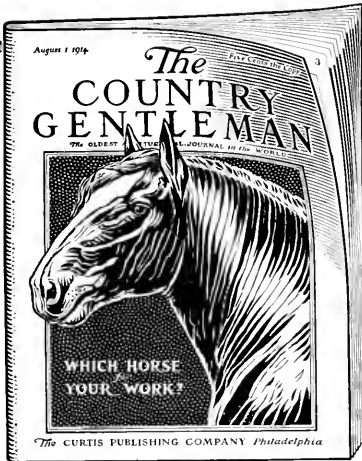
STATEMENT OF VEGETABLES SHIPPED TO SEATTLE DURING THE YEAR 1914

	Washington	Outside Points	Total	Equal to Cars
Potatoes	521,422	50,557	572,979	2,292
Onions	17,384	51,911	69,295	275
Cabbage	7,398	22,629	30,027	170
Lettuce	9,792	31,320	41,082	176
Caulliflower	148	940	1,088	52
Mixed vegetables	19,687	20,273	39,960	155
Sweet potatoes	.....	21,011	21,011	117
Celery	1,035	10,196	11,231	60
Asparagus	13,377	16,041	31,381	38
Bhubarb	12,115	1,455	14,070	27
Cucumbers	11,307	703	12,010	25
Peppers	3,814	13,600	17,414	20
Fennels	2,942	1,537	4,479	15
Egg plant	2,874	2,570	5,444	13
Carrots	1,975	1,191	3,166	12
Peas	31	2,072	2,103	12
Corn	3,011	246	3,257	6
Spinach	4,164	15	4,179	6
Beets	900	80	980	3
Rutabagas	387	.....	387	2
Beans	.....	503	503	2
Parsnips	1,024	850	1,874	8
Garlic	204	150	350	1
Artichokes	483	.....	483	.....
Brussels sprouts	.....	882	882	.....
	.....	352	352	.....
Total vegetables	610,018	261,169	901,187	3,518

STATEMENT OF FRUIT SHIPPED TO SEATTLE DURING THE YEAR 1914

	Washington	Outside Points	Total	Equal to Cars
Apples	41,801	15,436	57,237	727
Oranges	.....	248,766	248,766	570
Lemons	.....	38,131	38,131	100
Panamas	.....	130,325	130,325	392
Peaches	215,814	52,479	268,293	266
Cantaloupes	73,445	60,826	134,271	327
Strawberries	135,255	79,398	214,653	312
Watermelons	7,692	19,500	27,192	217
Grapes	65,636	140,005	205,641	197
Potatoes	40,154	112,062	152,216	157
Pears	18,663	1,706	20,369	76
Grape Fruit	.....	25,013	25,013	71
Cherries	51,539	7,177	58,716	44
Jap Oranges	.....	38,471	38,471	38
Apricots	21,017	5,869	26,886	33
Plums and Prunes	16,662	20,392	37,054	36
Raspberries	18,206	199	18,705	29
Cranberries	263	2,244	2,507	11
Cassabas	.....	2,340	2,340	13
Blackberries	190	6,508	6,698	10
Currants	3,294	70	3,464	6
Crabapples	4,825	.....	4,825	6
Quinces	2,917	.....	2,917	6
Goscherries	2,451	481	2,932	6
Huckleberries	4,213	.....	4,213	5
Pineapples	.....	964	964	1
Onions	483	105	588	1
Pomegranates	.....	113	113	1
Jap pears	.....	371	371	.....
Tangerines	.....	140	140	.....
Persimmons	.....	397	397	.....
Mexican times	.....	138	138	.....
Total fruit	1,168,678	978,958	2,147,636	3,689
Total vegetables	610,018	261,169	901,187	3,518
Grand total	1,808,696	1,243,327	3,051,823	7,207

The above are all standard packages. This report does not cover fruits or vegetables grown in the outskirts of Seattle and which are hauled to the public markets and stores by wagon, and of which there is a large quantity.



25¢
for
**THREE
MONTHS**

To put the big \$1.50 national farm weekly at once into half a million farm homes, the next 13 issues of *THE COUNTRY GENTLEMAN* will be mailed to your address for 25 cents—less than two cents a copy!

60% of the Apple Crop Never Reaches Market. Are You Wasting Half Your Fruit?

Bad selling methods and poor quality are the causes of this enormous waste. The 1914 apple crop was the largest ever produced, 259,000,000 bushels, and less than 40 per cent of the crop will be sold. Yet thousands of consumers would like to get good apples. That is why quality and packing are paramount questions discussed in every issue of our journal.

The Biggest Poultry Profits Are Made In Three Ways:

1, breeding high layers; 2, hatching baby chicks, and 3, fattening dual-purpose breeds. We sent the most expert poultryman we could find on a long trip through the great poultry states to visit practical plants and discover how the profit-paying plants are run. He got the facts. His observations and advice will appear in a number of special articles.

Do you know when the market is best for your class of stock? To the dairyman, hog raiser, horseman, sheepman, feeder and breeder there is no more important question. It will be thoroughly discussed by a competent man and illustrated by charts. It may save you \$100—possibly more. The war made some feeds cheap. Are you using them? Read the opinions of leading breeders on the prospects for the breeds.

Ask Us Your Hard Questions

Our expert advisers will answer any question you send us. They will plan your orchard; suggest varieties, cover crops, fertilizers, spraying mixtures, methods of cultivation; tell you how to harvest, select, pack, ship, store and sell profitably. All inquiries will be answered promptly by mail.

You will also be helped by the scores of articles on general farming, gardening, beekeeping, livestock, poultry, etc., by making immediate use of this coupon.

The **COUNTRY
GENTLEMAN**

THE CURTIS PUBLISHING COMPANY, Box 537, Philadelphia
R. F. D. Route

NAME _____
P. O. Address _____
Mail to us now

PASTE
**25¢
HERE**
and start
at
once
(In Canada
50c.)

Northwest Fruit Exchange Submits Selling Plan

THE following is a plan submitted by the Northwestern Fruit Exchange to the Growers' Meeting in Seattle January 22, which was referred to the Tacoma Meeting, held February 15, for further consideration:

"Resolved, That this convention go on record as favoring the following definite constructive program: That an advisory board shall be created, broadly representative of the fruit growers of the four Northwestern States, and that the functions of this advisory board shall be as follows:

"(1) To call the heads of the various marketing agencies into joint conference from time to time, as occasion may require, with a view of consultation as to market conditions.

"(2) General standardization of all methods from tree to car, including picking, grading, packing, hauling, assembling, loading and shipping, with a view of eliminating many wasteful extravagances and errors, which are costing the growers heavily at the present time.

"(3) Uniform, efficient and impartial official inspection, with a view of creating confidence in the minds of absent buyers, and attaching to the products of the Northwest staple value which will not only induce the freest trading but will make said products bankable security for loans.

"(4) Industrial advertising of Northwestern fruits, without reference to brand, which will supplement, rather than interfere, with the promotion of

special brands; this campaign to comprehend not only the creation of consumptive demand for our products, but also the education of consumer, retailer and wholesaler, as to varieties, uses and handling of our products in proper manner to insure highest satisfaction. Through this advertising and educational campaign, a definite effort to be made to render the handling of our products so safe as naturally to establish a more reasonable margin of profits by the trade—especially the retail trade—than are now in many cases exacted, by reason of the dangerous, unregulated and unprotected character of the business.

"(5) A transportation bureau, representing the combined tonnage of the Northwest, with a view of presenting a solid industrial front to common carriers in transportation matters.

"(6) A first class crop statistical bureau, under professional management; this bureau to gather data concerning crops, not only of apples, but all other deciduous fruits, and also in a general way, of citrus fruits, bananas and all others that affect the Northwestern fruit market position, directly or indirectly. The functions of this bureau could be extended in certain directions with high advantage. To illustrate: It is generally known that last year there were shipped out of the Northwest around 8000 cars of apples, and this year between 12,000 and 13,000, but nobody knows how many cars of Jonathan apples were shipped in any season. It is quite conceivable that, whereas, general apple crops may be abundant, there may well be, at the same time, an important variety shortage, and full knowledge of this would enable sellers to exact a higher price for the short variety than the general price position of the market would otherwise indicate.

"(7) Adoption of an official, uniform classification of average returns made by the various marketing agencies to their principals, to which shall be given by the advisory board general and widespread publicity. It is a well known fact that, owing to the radical difference in these classifications at the present time fruit growers are unable intelligently to compare

the results of one with the other, and without this ability it is impossible for them to be certain whether or not the service received is the best service available. This one thing has caused severe losses to thousands of fruit growers, and is an evil easy of correction.

"(8) The appointment of a firm of chartered accountants, of national reputation, acceptable to all concerned, including the marketing agencies, who shall, in behalf of the advisory board, and representing the fruit growers of the entire Northwest, audit the accounting of the various marketing agencies, and certify to the advisory board as to the exact correctness of the published averages.

"The adoption of these two provisions alone would result in the automatic elimination of incompetent agencies, and afford fruit growers at large an absolutely dependable basis of judgment in the selection of their sales representatives. These two things alone, taken together, would establish a bond of confidence between growers and their servants which is now generally lacking, and would result in the saving to the industrial community of hundreds of thousands of dollars in any given season, after its operations had become effective. No marketing agency can legitimately object to these provisions. Successful co-operation between growers and their agencies must be based on confidence, and cannot be based on suspicion and distrust. There must be a reason for confidence.

"(9) The working out, in conjunction with the heads of marketing agencies of a practical plan for the regulation and restriction of the tramp car evil, so far as it is an evil; the general idea being largely to abolish the shipment of car to intermediate gateway destinations, and rather, to bill practically all cars unsold at time of shipment directly from shipping point to destination markets. In this manner the unsold surplus may be distributed over the whole market in correct relation to the consumptive or distributing capacity of each, thereby avoiding congestion, oversupply, demoralization, and the resultant injustice to that section of the trade which has already invested its money in our products, and who are entitled to protection. In this manner small markets, now not consumers of our fruits, can be developed, and large central markets, having a wide influence over the whole situation, can be regulated and kept healthy—a most vital consideration. The one feature of organized protection of the trade who have invested their money in our fruits and thereby become copartners with ourselves in the business would result enormously in the creation of a solid foundation of confidence between buyers and sellers, that could and would be capitalized by us. This confidence would displace the general misunderstanding and distrust which exists now between producers and buyers, which is a deterrent factor in the development of our industry."

Store Your Apples in Spokane

The Natural Storage Center

Take advantage of storage in transit rate and the better market later. Write us for our dry and cold storage rate and information.

**Ryan & Newton
Company**

SPOKANE, WASHINGTON

FOR BEST RESULTS USE OUR

Filtered Lime-Sulphur Solution

(EVERY DROP USABLE)

AND

Neutral Lead Arsenate

MADE IN OREGON

WRITE US FOR PRICES

Oregon Arsenical Spray Co.

J. C. BUTCHER, Proprietor

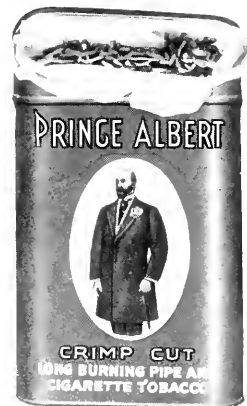
CLACKAMAS, OREGON



**You'll
Freeze
Fast
to P. A.**

Copyrighted 1915
R. J. Reynolds
Tobacco Co.

Load up that old jimmy pipe or roll a cigarette with P. A., strike a match and let 'er flicker. P. A. won't miss fire or flare back, men! One puff, you've got steam up and you've got the full fragrance and flavor of



PRINCE ALBERT

the national joy smoke

You'll vote it the one *real* tobacco. And when you find out you've smoked all day and all night and that your tongue and mouth and throat are just as unruffled and peaceful as a Sunday morning in the country, you'll freeze fast to P. A. for life.

It used to be that pipe and cigarette tobacco without a saw edge was harder to find than hitching posts in the subway or a currycomb in a garage. But now that P. A., made by a patented process which takes out the bite, has rung down the curtain on tongue terror, pipe and cigarette peeve, you hear a lot of chin music about no-bite tobacco.

But there never was another tobacco just like P. A. and there never will be, because the P. A. patented process is controlled exclusively by us. That's stiff-as-a-boiled-shirt-talk, but it only takes a ten-cent tidy red tin or a five-cent tippy red bag to sit in with a right to call.

Stake yourself to a try-out size package of P. A. and it's the doughnut against the hole that it will be you for P. A. for pipe and cigarettes. Buy it in pound crystal-glass humidors for home and for office. It's the real joy jar. Also in pound and half-pound tin humidors at stores where they sell tobacco.

R. J. REYNOLDS TOBACCO COMPANY, Winston-Salem, N. C.

Plan of Fruit Growers' Council of the Pacific Northwest

Unanimously adopted by the 107 delegates at Tacoma, Washington, February 15, 16 and 17, 1915.

PLAN of Fruit Growers' Council of Oregon, Washington, Idaho and Montana for improving marketing conditions and bettering prices, unanimously adopted by the 107 delegates at Tacoma, Wash., Feb. 15-16-17:

"For the purpose of securing, so far as possible, proper and legitimate cooperation which will lead to the obtaining for the benefit of the fruit growers of the Pacific Northwest the full amount to which they are entitled for their fruits in the markets of the world; and for the purpose of preventing unfair business methods by the various shippers and handlers of fruits, which will adversely affect the interests of the growers of such fruit, and for the purpose of further advancing the welfare of the fruit growers of the Northwest; be it hereby resolved:

"1. That the Growers' Council, now in session, be made a permanent organization; that the members elected thereto serve for the ensuing year and until their successors are elected. Subsequent representation in said Council to be determined at each annual meeting of the Council upon the tonnage of each district for the preceding year, provided, that representation in the Growers' Council to be held in January, 1916, shall be on the same basis as the representation in the Council now in session. The annual meeting of the Growers' Council shall be held on the third Monday in January of each year, and the members thereof shall be elected by the fruit growers of their respective districts on the first Saturday after January 1st of each year. Special meetings of the Growers' Council shall be called by the President and Secretary thereof on the written demand of the members of the Growers' Council of any one or more districts and as otherwise provided herein.

"2. That a Board of Control shall be formed consisting of one member from each of the fruit growing districts designated and described below, and for any additional district that may hereafter be formed. Members of this Board shall be elected at the annual meeting of the Growers' Council upon the nomination and recommendation of their respective districts. Members of the Board of Control shall serve for one year or until their successors are elected. Vacancies in the membership of the Board of Control shall be filled by the Board of Control upon nomination by a majority of the members of the Growers' Council from the district unrepresented by reason of such vacancy.

"3. The qualifications for membership in the Growers' Council or the Board of Control shall be as follows: Such member shall be a bona fide fruit grower in and from the district that he represents, and no member of the Board of Control shall be a salaried official of any fruit sales agency or one whose principal business con-

sists in buying, assembling, or selling for his own profit, fruit that is not grown by himself. Members of the Board of Control shall receive \$5.00 per day, and shall be paid their necessary traveling expenses while attending to duties of their office.

"4. The Board of Control shall be authorized and empowered to elect an Executive Committee of three, provided, that the Board of Control is hereby instructed to elect as such Executive Committee the three men nominated by the Growers' Council, who shall be acceptable to the delegation from the respective district from which said person comes. Each member of said Executive Committee shall receive such compensation for his services as shall be fixed by the Growers' Council. The powers conferred by the Growers' Council upon the Executive Committee are hereby declared and defined as follows: It shall be the duty of the Executive Committee to enter into negotiations with the Shippers' League, or other duly authorized representatives of the shippers of Northwestern fruits, or any considerable numbers of them, for the following purposes: (a) To obtain for fruit growers the maximum amount of service in return for the compensation paid the shipper by the grower. (b) To secure the adoption of such uniform methods for the transaction of

business between shipper and grower as will furnish a fair basis of comparison. (c) To establish such practices with regard to the selling and marketing of fruit as will tend to eliminate consignment and auction sales, prevent unwise and unfair competition, and in every possible manner stabilize the market and secure for the grower the greatest possible net return for his product. (d) In conjunction and cooperation with the shippers, to proceed, as occasion offers, by conservative and well-considered measures to improve the conditions affecting the production and marketing of fruit, and especially to promote the interests of the boxed apple industry of the Northwest. (e) To arrange for the collection through the shippers of a tax, to be paid by the grower, not to exceed $\frac{1}{4}$ cent per box on apples and pears, $\frac{1}{4}$ cent per crate on strawberries and $\frac{1}{6}$ cent per package upon other small fruits, \$2.00 per carload of fruit shipped, to provide for the cost and expense of this organization, all such funds to be subject to disbursement by the Executive Committee, who shall make periodic reports to the Board of Control. (f) To make agreements with the shippers for the carrying out of the purposes herein outlined, and for other purposes as the same may appear to be mutually advantageous, and to en-

Always
Specify



Then BE SURE this brand is on the kegs you get

Honest Quality and Full Count have made them the
World's Standard, which is why you should insist on

"PEARSON'S"

And Accept No Substitute

Pacific Coast Agents

UNITED STATES STEEL PRODUCTS CO.
San Francisco—Los Angeles—Portland—Seattle

J. C. PEARSON COMPANY, Inc., Old South Building, Boston, Mass., Sole Manufacturers

force the same; and to that end they are authorized to establish headquarters and engage such employees and assistants as may be necessary.

"5. The Executive Committee shall have charge of all the details of carrying into execution the purposes of this organization; but its acts shall be under the general supervision and direction of the Board of Control. Any member of the Executive Committee may be removed on a three-fourths vote of the membership of the Board of Control, but such member of the Executive Committee may appeal such removal to the Growers' Council, whose majority vote shall be the final decision. The Board of Control shall have power to make and adopt such by-laws, rules and regulations for its own government as it shall deem necessary, not to conflict with the provisions hereof. Nothing herein contained shall be construed to require the Executive Committee to give to the Board of Control or any member thereof confidential information given to them by any sales or assembling agency of fruits unless an investigation has been made or is in progress by the said Board of Control of unfair business methods, upon written complaint, made in good faith, or upon the initiative of the Executive Committee.

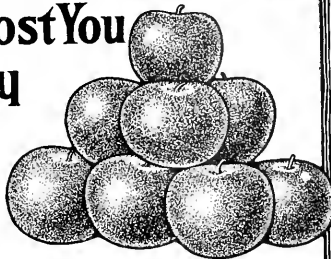
"6. Whenever the Executive Committee and the Board of Control herein provided for shall be unable to agree upon any matter which they or either of them, deem of vital importance, they or either of them may direct the President and Secretary of the Growers' Council to convene said Council, and it shall be the duty of those officers to immediately issue a call for the Council to convene at such time and place as those officers may designate in the call; provided, however, that each member of the Council shall have five days' notice of the time and place of the meeting.

"7. The fruit growing sections of the four Northwest states, for the purpose of representation, shall be divided into the following districts: Wenatchee District, comprising the Counties of Chelan, Okanogan, Douglas and Grant in the State of Washington. Yakima District, comprising the Counties of Yakima, Kittitas, Benton and Franklin in the State of Washington. Western Oregon District, comprising all the Counties of Oregon west of the Cascade Mountains, north of Josephine County. Hood River District, comprising the Counties of Hood River and Wasco in the State of Oregon; Klickitat and Skamania Counties in the State of Washington. Southern Idaho District, comprising the Counties of Southern Idaho and Malheur County in the State of Oregon. Lewiston - Clarkston District, comprising the Counties of Asotin and Garfield and the Snake River points in Whitman County in the State of Washington; Counties of Nez Perce, Idaho and Lewis, with portions of Latah County south of American Ridge in the State of Idaho. Montana District, comprising the State of Montana. Walla Walla District, comprising the

What will it cost You Not to spray For Aphis?



APHIS INJURED



PERFECT

The U. S. Dep't of Agric. Says \$30,000,000

is the annual damage done to the American fruit crop by insects. Aphis causes a considerable part of this loss and the standard insecticide recommended by experiment stations and spraying experts for this and many other orchard pests is

"BLACK LEAF 40"

Guaranteed to contain 40% Nicotine

THIS IS THE TIME TO SPRAY for Apple Aphis—just as the leaf buds show green. Don't delay till the foliage gives the Aphis protection. Use "BLACK LEAF 40" when buds are like the one shown in this picture. Write us for Apple Aphis Bulletin.

"BLACK LEAF 40" is not recommended for all insects; but for Aphis, Pear Psylla, Hop Louse, and many other soft-bodied sucking insects it has proven to be a highly effective and a very economical insecticide.

LET US HELP YOU PROTECT YOUR ORCHARD

If your dealer will not supply you with "Black Leaf 40", send us P. O. Money Order for \$2.50 and we will send you, express prepaid, a 2 pound can that will make 200 gallons of effective spraying solution. If you are in doubt about the insecticide you need, write us, send specimens or give descriptions of your insect enemies and we will help you to find the proper insecticide.

KENTUCKY TOBACCO PRODUCT CO. Dept. C Louisville, Ky.

SPECIAL—"Black Leaf 40" is Duty Free in Canada



Counties of Walla Walla and Columbia in the State of Washington; Umatilla, Union, Baker and Wallowa, in the State of Oregon. Spokane district, comprising the remaining territory in Eastern Washington and Northern Idaho. Rogue River District, comprising the Counties of Josephine and Jackson in the State of Oregon. In unorganized districts a petition signed by not less than twenty-five fruit growers will be sufficient to call a meeting for the election of members of the Growers' Council."

UNIVERSITY OF OREGON
SCHOOL OF COMMERCE

Portland, Oregon, January 6, 1915.
Editor Better Fruit:

I am sending you today, under separate cover, a copy of *The Timberman* for December, in which you will find a portion of the survey which the School of Commerce of the University of Oregon is making in the matter of markets for box shooks. We have almost completed a world's survey on this line and the remainder of the survey will be published later in *The Timberman*.

We have discovered a very extensive market for this class of material throughout the world, and now that the Panama Canal is open there is no doubt but that the Northwest will be able to secure a very large proportion of this trade. You will observe that we have also discovered in this survey an excellent opportunity for markets for barrel stock in a great variety of uses. The publication in *The Timberman* does not include every feature of the reports which we have gathered. We are handing all of this material over to the Northwest Association of Box Manufacturers for their use. The method of our investigation, by which we are ascertaining the complete quantity of box shooks imported into each consular district, the uses to which the boxes are applied, the character of the material out of which they are made, the countries from which they are imported, the details of sizes, material and cost, is of such a practical and

useful nature that the manufacturers here will be able to see at a glance whether or not the field is inviting to them. This survey, when complete, will be of value to the box manufacturers for several years to come. We are also making a survey of the markets for other products, especially in South American countries, that Oregon is prepared to export in large quantities. I hope to be able soon to place before the producers of the Northwest a lot of detailed information concerning the possibilities of trade in Oregon products with these South American countries.

In a communication received this morning from the consul at Venezuela he says:

"On the list forwarded with your letter of November 20th there are some articles of Pacific Coast production now imported from New York, others now produced in other parts of the United States which might be better furnished from the Pacific Coast if direct steamer service existed, and others now imported from Europe which might be replaced by American goods were transportation and other costs lessened and terms as favorable. In this class are canned salmon and fresh fruits. A can of good salmon now retails here at forty-five cents, and fresh Oregon apples from 10 to 15 cents each. Any reduction in the cost to the consumer would immensely increase the consumption of these articles. Lumber, print paper, flour, biscuit, lard and smoked meats from the Pacific Coast are likely to find a good market here. Preserves, canned fruits, vinegar and pickles, dried prunes, condensed milk, butter, cheese, tallow and hops also could be marketed here to advantage. Prunes, however, are imported here now in glass jars or screw-top tins, butler in one, two and five-pound tins."

The consul also says that merchants in Venezuela dealing in coffee and cocoa are anxious to have direct connections with the Pacific Coast in the matter of trade. So we have every reason to feel very much encouraged as to the development of trade with foreign countries as the result of the commercial and industrial survey. Very truly yours,

H. B. MILLER,
Director of the School of Commerce, University of Oregon.



"WOOD-LARK"

TRADE MARK

SQUIRREL AND GOPHER POISON

QUICK, CERTAIN,
→ DEADLY. ←

Mr. Fruitraiser, Grain-grower, Stockman, not thousands but millions of dollars are lost every year by the depredations of gophers and squirrels, in the growing grain and corn which they destroy, in the injury to irrigation ditches, alfalfa fields and fruit trees. Poisonous vaccines are of little avail. There is just one safe, sure and certain destructive agent, "**Wood-Lark**" Squirrel & Gopher Poison, a strychnine coated wheat, which we originated 25 years ago and have sold in steadily increasing quantities every year. We have hundreds of fine testimonials from those who have applied this Poison, attesting its value.

"Wood-Lark" Poison is coated by a process of our own, contains a uniform and sufficient amount of poisonous alkaloid. Its formula has never been changed nor cheapened with the increased cost of ingredients. Now is the time to apply it. Warm Spring days are here, the pests are awakening from their Winter's sleep and are ravenous for food. A few kernels sprinkled in their burrows will prevent thousands of dollars of loss in your prospective crops, whether grain, alfalfa, fruit or roots. If your local dealer does not carry "Wood-Lark," take no inefficient substitute, but write us direct.

CLARKE, WOODWARD DRUG CO.

Wood-Lark Building

PORTLAND, OREGON

Alder at West Park

Harmony Among Marketing Concerns

By E. H. Shepard, Editor of "Better Fruit."

APPLES in the Northwest during the past few years have usually brought good prices and paid a good profit on the investment, consequently the grower has devoted practically all of his time to the growing end of the business without giving the marketing end very much serious consideration. But the unusually low prices this year have set the Northwestern growers thinking and they have given the matter serious consideration and are doing a great deal of investigation work. They realize that something must be done and they believe something can be accomplished. Many salesmen and men connected with marketing organizations state that in their opinion the crop could have been handled this year so it would have realized from 25 to 50 cents more per box. In addition to the general business depression the war and the unusually large crop, which it must be conceded affected prices very materially, it seems to be the consensus of opinion that there was an unnecessary cutting of prices in the desire to get business and a lack of proper distri-

butions. Apple growers of the Northwest believe that if unnecessary competition can be eliminated and an understanding be affected and an intelligent distribution made that they can secure from 25 to 50 cents per box more. The old idea that the law of supply and demand governs prices in a measure is true, but it is not entirely true. By that I mean in connection with the apple business. If the crop of apples was sufficient to meet the demand for a six months' period it is very evident that if the entire crop were thrown on the market in 30 or 60 days low prices would result. And again, although the supply may be equal to the demand for six months, much depends on the distribution. To illustrate this in a forceful way—if the supply of apples was 30,000,000 barrels, much lower prices would be obtained if all of the crop was shipped to Chicago, New York or Boston, than if the crop was distributed evenly all over the United States.

Growers have come to the conclusion if a plan can be devised that will be acceptable to the marketing insti-

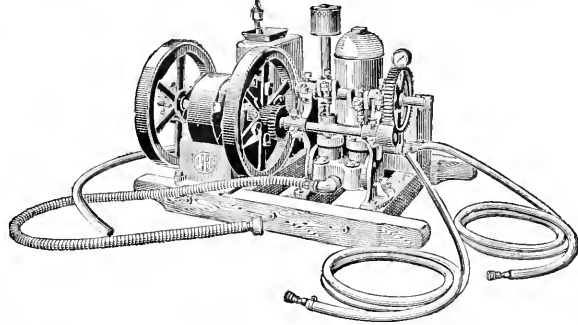
tutions, and they believe it can, that an orderly control of the entire crop of the Northwest can be maintained, an even distribution secured, an unnecessary cutting of prices eliminated and much better prices obtained.

The By-products Committee realizing that the apple industry depended primarily upon the profit made in fresh fruit decided to call a meeting of the growers and also a meeting of the heads of the different marketing concerns with a view of seeing if some plan could be devised that would better marketing conditions of the Northwest. Consequently they notified all of the different districts to send delegates of apple growers to meet in Seattle, January 22-23. They also requested each of the marketing concerns to send representatives to take part in these deliberations. The delegates were the most serious minded representative body of men connected with the fruit industry that has ever met in the Northwest. Harmony prevailed throughout the meeting. At the beginning of the session the chairman ruled no discussion of the past would be tolerated that cast any reflection on the marketing institutions, saying further that the sole object of the meeting as to devise a plan to better

present marketing methods. Everybody met with this spirit of friendliness, consequently the meeting was harmonious throughout resulting in an agreement which all of the different marketing concerns present signed, agreeing to be governed by a board of control of three to be selected by the growers. It is believed that this board of control can meet with the officials of the different marketing organizations from time to time determining the actual marketing value which can be realized and through their power and influence can prevent any of the marketing concerns unnecessarily cutting these prices. Each marketing concern would be expected and required to furnish daily a complete record of the number of cars sold and various grades, prices, sizes and the markets to which they are shipped. With such information in possession of the board of control it would be an easy matter for the board to ascertain daily how many cars were being shipped to any one city and by furnishing this information to the different marketing concerns a glutting of any particular market could be prevented. Furthermore it is the general understanding that this board should be directed to follow the marketing clear to the consumer preventing the retailer from charging the consumer any exorbitant prices in so far as they were able, it being a well known fact that exorbitant retail prices have been asked for Northwestern box apples in the past, which prevented consumption and a lack of consumption means a lack of demand.

It is the purpose of the districts to call a meeting of the growers in the near future to select delegates for the purpose of choosing a board of control. This board of control must be composed of men who are absolutely square, broad minded, experienced, of good judgment and diplomatic. In short they must be men who will give a square deal and favor no particular marketing concern and discriminate against none. The growers are very much in earnest and undoubtedly will exercise good judgment in the selection of delegates which is sufficient assurance in advance that none of the marketing concerns could be successful in the endeavor to secure a board of their own selection. Growers realize fully that if the right kind of board is selected the plan will be a success. On the other hand they realize fully that if the right kind of board is not selected the plan will be a failure. In fact this feeling is so strong on the part of the growers that it is generally believed that no grower could be persuaded through loyalty to his marketing concern to vote for any man who would not stand for the square deal. It seems pretty well assured at the present time that this plan will be carried out and become effective.

One Season's Work Repays You



AMONG your fruit-raising problems, if you are a really painstaking grower, seeking to gain your just profits at shipping time, is the spraying problem. Many a veteran fruit grower and truck gardener will assure you that you are not yet doing your best against the insect and fungous pests if you are not using

An I H C Spraying Outfit

This is because in all International Harvester spraying equipment you find the Titan engine—a long lived, most satisfactory engine; and thoroughly well built pumps, completely brass fitted and made for high pressure spray work.

I H C outfits are made for small and for large orchards, in several types—on skids, on portable truck, and complete with tank. You can detach the engine easily for any power work.

Let us direct you to the nearest I H C dealer who sells these outfits. Send for our interesting catalogue.

International Harvester Company of America

(INCORPORATED)

Crawford, Neb. Denver, Col. Helena, Mont. Portland, Ore.
San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah



"BLUE RIBBON"

(EXTRA FANCY)

"RED RIBBON"

(FANCY)

Famous Brands of Yakima Apples

Packed under our personal supervision
Get in touch with us by wire or letter

Yakima County Horticultural Union

E. E. SAMSON, Manager

NORTH YAKIMA, WASHINGTON

How to Use the **KIMBALL CULTIVATOR**

to keep your Orchard
in Perfect Condition



THE first thing in the spring, as soon as the ground is dry enough, it should be well plowed or disced both ways, or diagonally if the trees are planted in that manner.

The rest of the season nothing is needed but the **KIMBALL**, which should be run over the ground at least twice each month during the summer, or as soon as the ground is dry enough after a hard rain, or after irrigation.

This will break up the crust and stop evaporation, for when the soil bakes and opens in cracks is the time of the greatest evaporation.

More cultivation and less irrigation will produce better fruit, and it will keep longer than where too much water is used.

It is now for fruit growers to be thinking of how they can keep their orchards in good shape at the least possible expense.

For this work there is nothing that will equal the Kimball Cultivator.

While we know the fruit market is bad, we also know it will not always be in this condition, and the grower who neglects to cultivate his orchard at this time will lose the years of labor he has already put in on it, for an orchard that is not cultivated is soon a total loss.

Therefore get a Kimball and continue the good work.

MANUFACTURED BY

W. A. JOHNSTON, The Dalles, Oregon

Dow Arsenate of Lead

has during the past six years of successful use throughout the United States demonstrated itself a superior product. It is used generally by large and particular growers the country over. It is the finest product we can produce after our years of experience. Contains the maximum amount of arsenic oxide, 15 per cent, which is all that any absolutely safe Lead can contain on the basis of 50 per cent moisture, without danger of foliage injury.

Insist on the Dow Brand. It is different.

The Dow Chemical Company

MIDLAND, MICHIGAN

THIS 2 UNIT PLANT "Did Wonders"

Last Summer

Built in Various Sizes



It is the MOST EFFICIENT EVAPORATOR

It dries "Fancy" Dried Fruit of all kinds in record time, which brings "Fancy" prices, with low production cost. "None" just like it. "None" just as good.

It makes Apples at 8c dry pound worth \$15 per green ton.

PERFECT CONTROL OF TEMPERATURE, HUMIDITY AND CIRCULATION.

Inquire

1005 CHAMBER OF COMMERCE, PORTLAND, OREGON.

A New Oregon Booklet

"Oregon for the Settler" is the name of a very handsome booklet issued by the Southern Pacific Railway. It is beautifully printed and handsomely illustrated and contains a wonderful amount of interesting reading matter about the possibilities of Oregon as a state for the diversified farmer. On the front page is a paragraph as follows: "One of the big things about the 1915 Panama-Pacific International Exposition at San Francisco is the opportunity to visit Oregon." The distribution of this book ought to be a big factor in persuading many Easterners who will visit the Exposition to make the trip through the Northwest and visit the State of Oregon, and we might add, the Northwest in general needs more dairymen, more men to raise hogs, poultry—more general farmers. At the present time Oregon produces less than 50 per cent of the butter, eggs and meats that are consumed by the people in the state. A man who becomes a farmer can profit by this splendid opportunity of securing home markets for his products at splendid prices. If you want to investigate Oregon opportunities, to find out where to establish a good home and make a good living, write Mr. John M. Scott, general passenger agent, Portland, Oregon, or Mr. Chas. S. Fee, traffic manager, San Francisco, California.

Time and experience have fully demonstrated the futility of virus as a rodent exterminator, particularly squirrels, gophers and mice pests. Nearly all forms of poison have given way to strychnine, and for this purpose there is nothing better than a strychnine-coated wheat. The cupidity of manufacturers has, in many cases, led them to diminish the amount of poison below the safety point, with the result that it has proven worthless in use. Disappointment has also arisen through improper coating. Farmers today are depending more and more on the well-tried, tested brands of coated wheat for the destruction of squirrels and gophers. No stock, fruit, grain or alfalfa grower should jeopardize his crop by failure to act promptly this season. These rodents are now asleep; soon, with the warm sun's rays, their whistle will be heard, and this is the psychological moment to sprinkle the poisoned wheat. A few grains in the early morning, dropped down each burrow, will turn the trick. The long fast makes the creatures ravenous and the poison is immediately effective. Fields have been shown where thousands of these rodents have been destroyed in twenty-four hours by this method. (Adv.)

You Can Increase Your Crop Yields

Regardless of conditions your yields will be larger if you use a

Cutaway D. A. Harrow

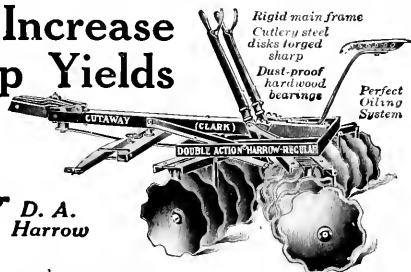
No other disk harrow of any make or style approaches the CUTAWAY (CLARK) Double Action for pulverizing the soil, for saving time or for saving horses. The rear disks *always* cut just midway between where the fore disks cut. Every inch of the soil is pulverized and aerated. With the CUTAWAY (CLARK) Double Action Harrow you can save

25 to 33% in time. Compared with any single harrow it does 50% more work with the same horse power. It is made in sizes to meet the needs of every farmer. The disks are of a special steel rolled to our own analysis and forged sharp. The bearings are *dust-proof* oil-soaked hardwood, perfectly lubricated.

Ask your dealer to show you the CUTAWAY (CLARK) Double Action Harrow. If he doesn't handle CUTAWAY (CLARK) tools, write us at once. We ship direct where we have no agent. Send for new catalog.

THE CUTAWAY HARROW COMPANY, 940 Main St., HIGGANSON, CONN.

Maker of the original CLARK disk harrows and plows.



Arcadia Irrigated Orchards

THE LARGEST AND MOST SUCCESSFUL ORCHARD PROJECT IN THE ENTIRE WEST

7,000 acres planted to winter apples. Gravity irrigation. Located 22 miles north of Spokane, Washington, directly on the railroad. We plant and give four years' care to every orchard tract sold. \$125, first payment, secures 5 acres; \$250, first payment, secures 10 acres; balance monthly.

SEND FOR BOOKLET

Arcadia Orchards Company

Deer Park, Washington

YOU CAN PULL ANY STUMP BY HAND

WITH A "K" HAND-POWER STUMP PULLER

absolutely without horses, powder or digging. Weighs only 171 lbs. and one man easily handles it.

The "K" is simple, compact, developing a straight pull of 96,000 lbs.



with one man on lever. It is guaranteed to do anything any other puller will do—better, quicker and cheaper.

I have used it myself on Pacific Coast stumps, the toughest stumps in the world, and I KNOW WHAT IT WILL DO. Used by U.S. Gov't in Alaska and by States and Countries.

I Have Sold Hundreds Without a Single Complaint or even a Request for Repairs!

The "K" can't break or get out of order; made of forged Krupp steel, as simple to operate as rowing a boat. Works on side hills, marshy land, any grade or soil. If you have idle stump land YOU NEED A "K"!

No Extras to Buy

200 feet weather-proof steel cable and all equipment included. Write today for new free hook on land clearing showing actual photographs of the "K" at work, and special Direct-to-You Offer.

W. J. FITZPATRICK
Box S 1926 2nd Ave
SEATTLE, WASH.



FEATHERWEIGHT Spray Nozzle and Rod

Best, Lightest, Cheapest



Size of Nozzle

Invented by a fruit grower of 15 years experience in spraying. No tired arms from handling it; a pleasure instead of a burden to carry. You will like it and praise it to your neighbors. Nozzle from 2 to 20 times lighter than other nozzles; rod from 2 to 4 times lighter than other rods.

\$1.00 for Nozzle and Elbow
\$1.75 for Rod

Your money back if it is not satisfactory.

F. P. FRIDAY
HOOD RIVER, OREGON

What the American Farmer Gets Out of the European Struggle

While none of the other nations of the earth would have the heart to deliberately take advantage of the plight of suffering Europe, there are undeniable benefits that come to the neutrals in their very efforts to relieve the suf-

ferers. The devastating of their own lands by the strugglers and the call to arms of the vast army of toilers (who were the suppliers of the daily sustenance of those countries) has cut off their ready supply of food, and the result has long since been portrayed in the graphic accounts of the helpless families facing actual starvation. This condition has spelled opportunity for the American farmer—opportunity not only to help these unfortunate people stave off the pangs of hunger, but the opportunity for the farmer to market an enlarged output by increasing the acreage of crops here to meet these unusual conditions. With many the problem of increased acreage has not been so much the want of additional land on which to raise bigger crops as it has been the scarcity of labor—another condition which the war has directly brought about through practically cutting off immigration, and thus depriving this country of its main supply of agricultural workers. But, happily, progressive farmers are not dismayed, for they are turning stronger than ever to improved farming implements, and laying larger plans because of efficient helpers in many tools.

Use of Crop Remnants as Organic Soil Matter

While such crop remnants as stubble, corn stover and spoiled hay should be returned to the soil when not otherwise used on the farm, there are other forms of these remnants that should never be put to this use. Screenings from seed cleanings, as well as potato, celery and onion tops, should be burned in order to prevent the spread of weed, insect and disease pests, according to authorities of the Oregon Agricultural College.

The problem of utilizing to best advantage the unused portions of crops in maintaining soil fertility without at the same time scattering weeds, insects and plant diseases, was presented to



"We are delighted with our new home"

So H. C. Graff, of Hover, Wash., writes us. He says further: "I know I saved at least \$500 on the house."

Mr. Graff bought one of our "knock down" houses and put it up himself.

You, anyone can build your home. Houses as low as \$195 complete in every detail. Material numbered to correspond with the plans—plans so explicit and simple that a child can do the building.

Satisfaction guaranteed you by the pioneer "knock down" house company of the Pacific Coast. Send today for our catalog

Ready Built House Co.
978 Broadway Portland, Oregon

Professor W. L. Powers, assistant agronomist, who proposes rotation as a solution. Clover, vetch or peas may be grown on a plot one year, followed by a grain crop the next. Then corn, potatoes or other cultivated crops can be grown, and at the last cultivation clover or vetch sowed. This may be turned under the next year, adding soil fertility to the value of \$8.40 for each ton of clover and \$9.00 for each ton of vetch. All unused portions of the crops with the exception of potatoes can be turned under with no danger of spreading disease, since no disease will live in so many kinds of crops.

"So far as spreading disease is concerned," said Professor Bailey, of the Plant Pathology Department, "straw and corn stover are harmless, but po-



Now is the Time to Select Your Plants to Beautify Your Home Grounds

I have just received a carload of new

Ornamental Shrubs and Roses

from Holland. Send for list and prices.

If you will give me the measurements of your lot and location of buildings I will give you the benefit of my experience in selecting the right plants for the right place.

I carry a full line of **Fruit Trees and Berry Stock**, wholesale and retail.

245 Fourth St. Portland, Oregon

GET THE HADIT
Call
MAIN 8135
A3302

**Nurseryman
and
Landscape**



lato tops, celery lops and onion tops should be removed from the field and burned when long-period rotation is practiced. Diseases such as blight and leaf spot may be spread in the remnants, and their fertility value is not great enough to warrant their use as fertilizers with all the danger involved."

Kinds of Apples Mostly Grown

The Bureau of Crop Estimates of the United States Department of Agriculture, as a result of a recent inquiry to ascertain the relative importance of the principal varieties of apples in the United States, found that the four principal apples in the United States are the Baldwin, Ben Davis, Northern Spy and Winesap. An estimated approximate average annual production of the leading varieties of apples in the United States, 1909-1913, is given by the Bureau as follows:

	Bushels
Baldwin	23,583,000
Ben Davis	23,499,000
Northern Spy	10,714,000
Winesap	9,036,000
Rhode Island Greening	8,300,000
Jonathan	6,405,000
Rome Beauty	5,439,000
Wealthy	3,967,000
York Imperial	3,786,000
Oldenburg	3,290,000
Red Astrachan	3,359,000
Yellow Newtown and Albemarle	2,901,000
Pippin	2,800,000
Gano	2,780,000
Limbertwig	2,745,000
Yellow Bellflower	2,536,000



Every Month in the Year you can use
Conkey's POULTRY TONIC
 for
Young Chicks Growing Stock Molting Hens and Laying Hens and Every Bird Will Be The Better for it

Vigorous birds grow rapidly, feather up fast, and pay a profit, while the weak ones drag along and are only an expense.

CONKEY'S gives them health and stamina and keeps the organs keyed up to their best without overtaxing them.

Don't just say "Poultry Tonic" to your dealer. Say "CONKEY'S" and know you are getting pure tonic, absolutely free from filler or cayenne. Buy it by the **Pail**, and use every day.

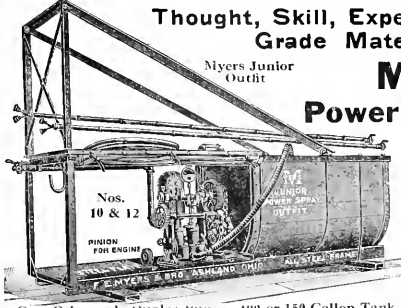
CONKEY'S WHITE DIARRHEA REMEDY in the drinking water from the start, may save many of your chicks—a splendid preventive of White Diarrhea—25c. and 50c.

Send 4c in stamps for Conkey's Poultry Book. It tells facts you want to know. Worth dollars to any poultry owner.

THE G. E. CONKEY CO.
 111 Conkey Bldg., Cleveland, O.



HAVE A CONKEY CORNER In your Poultry House



Thought, Skill, Experience and High Grade Material Make

Myers Junior Outfit

MYERS Power Spray Outfits

LEADERS in the Spraying World

Are you thinking of purchasing a power spray rig? If so, it will be a good time to consider MYERS. Here is a line of Power Outfits you want to investigate—It covers the entire field of power spraying including large, medium and smaller capacity outfits, for high pressure work.

MYERS POWER SPRAY OUTFITS are built in three styles and five sizes. They have been developed to meet the demand of those who spray for profit and watch results closely. Each outfit is complete within itself ready for engine and trucks, and guaranteed by us for reliability, efficiency, ease of operation, capacity and economy in handling mixtures.

Here is one reason they have proved so popular among fruitmen—we do not equip them with engine or wagon trucks but build each outfit so that it is an easy matter for anyone to do this, and in case you already own an engine and trucks it will not be necessary to purchase new ones when buying a Myers Outfit—the old ones will probably do.

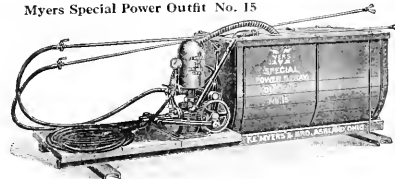
We could name feature after feature found on Myers Power Spray Outfits that enter into their construction and make them Leaders, but prefer to have you request a copy of our complete Spray Catalog illustrating and describing all styles including our extended line of smaller capacity Bucket and Barrel Hand Sprayers, Nozzles, Hose and Accessories.

Write Dept. S, and your letter will receive prompt attention.

Gear Driven—2 Duplex Pump—100 or 150 Gallon Tank.

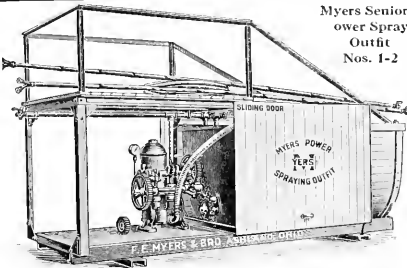
High Pressure Power Outfits

Myers Special Power Outfit No. 15



Belt Driven—2" Horizontal Pump—100 Gallon Tank.

Completely Equipped With All Accessories



Myers Senior Power Spray Outfit Nos. 1-2

Gear Driven—3 or 2 1/2" Duplex Pump—200 Gallon Tank.

F. E. MYERS & BRO. ORANGE STREET ASHLAND, OHIO ASHLAND PUMP AND HAY TOOL WORKS.

TIE UP

TRAUNG LABELS ATTRACT ATTENTION

We are especially qualified to design and execute attention compelling LABELS that are necessary to give the proper selling power to your goods.

HIGHEST QUALITY—PROMPT SERVICE—LOWEST PRICES
SAMPLES AND PRICES UPON APPLICATION

"SATISFY THE CUSTOMER" In Our Slogan

TRAUNG LABEL & LITHOGRAPH CO.
SAN FRANCISCO, CAL. PORTLAND, ORE.
 BATTERY & GREEN STS. PARK AND STARK STS.

Send for our 1915 Art Calendar. Free on Application

BETTER FRUIT

HOOD RIVER, OREGON

Official Organ of The Northwest Fruit Growers' Association
A Monthly Illustrated Magazine Published in the
Interest of Modern Fruit Growing and Marketing
All Communications Should Be Addressed and Remittances
Made Payable to

Better Fruit Publishing Company

E. H. SHEPARD, Editor and Publisher
H. E. VAN DEMAN, Contributing Editor
STATE ASSOCIATE EDITORS

OREGON	
C. J. Lewis, Horticulturist.....	Corvallis
H. S. Jackson, Pathologist.....	Corvallis
H. F. Wilson, Entomologist.....	Corvallis
WASHINGTON	
Dr. A. L. Melander, Director.....	Pullman
O. M. Morris, Horticulturist.....	Pullman
COLORADO	
C. P. Gillette, Director and Entomologist.....	Fort Collins
E. B. Haus, Chief of Department of Civil and Irrigation Engineering, State Agricultural College.....	Fort Collins
E. P. Taylor, Horticulturist.....	Grand Junction
IDAHO	
W. H. Wicks, Horticulturist.....	Moscow
W. S. Thornber, Horticulturist.....	Lewiston
UTAH	
Dr. E. D. Ball, Director and Entomologist.....	Logan
MONTANA	
O. B. Whipple, Horticulturist.....	Bozeman
CALIFORNIA	
C. W. Woodworth, Entomologist.....	Berkeley
W. H. Volk, Entomologist.....	Watsonville
Leon D. Batchelor, Horticulturist.....	Riverside
BRITISH COLUMBIA	
R. M. Winslow, Provincial Horticulturist.....	Victoria
SUBSCRIPTION PRICE:	
In the United States, \$1.00 per year in advance	
Canada and foreign, including postage, \$1.50	
ADVERTISING RATES ON APPLICATION	
Entered as second-class matter December 27, 1906, at the Postoffice at Hood River, Oregon, under Act of Congress of March 3, 1879.	

The Growers' Council, the Board of Control and the Executive Committee. —The proceedings of the Seattle Convention and the Growers' Council at Tacoma, with the plans and general information pertaining to their action, is so extensive that one edition of "Better Fruit" does not contain sufficient space to cover the field and plan of future operations completely. The Growers' Council was held so late in the month that it was impossible to prepare all of the information "Better Fruit" desires to give its readers about the Growers' Council in time for the March edition. Therefore "Better Fruit" desires to announce that the April edition will endeavor to complete the plan of giving the fruit growers of the Northwest a full and comprehensive

SEEDS

Your
Copy of Our
New 196-Page
CATALOG B
NOW READY

Barter's
Tested
Seeds
Inc.

Those famous
English seeds—
tested and reselected

DEAN D. BALLARD, MGR.
3000 ARCADE BLDG.
SEATTLE

SEEDS

idea of the present movement on the part of the fruit growers for regulating and controlling a marketing agency with a view to securing better prices and wider distribution. In addition to this the April edition will contain personal opinions and many news items in reference to this action that will be very interesting and valuable to every fruit grower in the Northwest.

The Fruit Growers' Council and Marketing Control.—The apple industry of the Northwest began to assume commercial proportions in a very small way about the year 1900. It progressed comfortably and satisfactory prices were realized until the year 1912. A number of marketing organizations had sprung up, which apparently were getting along in a comfortable way without self-competition, consequently satisfactory prices were being realized. In the year 1912 there was a large crop in the United States, with a heavy crop in the Northwest. The returns were low and apple growers for the first time realized that they had an immense output without proper arrangements for marketing.

The following firms were operating more or less locally in the different districts: In the Wenatchee Valley, The Wenatchee Produce Association, the Wenatchee Fruit Growers' Association, in the Yakima Valley, Bichey & Gilbert, Yakima County Horticultural Union, Perry & Thompson. In Southern Idaho, the Pioneer Fruit Company and a number of shipping concerns doing a small business. In addition there were many commission men and fruit dealers operating in the various districts, either doing business on the f.o.b. basis, advances, or on consignment. In addition there were hundreds of independent shippers doing business, either on f.o.b. basis, advances, or consignment. Competition was keen. There was no co-operation among any of the marketing concerns, each and every one acting for himself.

We all remember the prices of 1912. In the year 1913 an effort was made to improve the condition. The North Pacific Fruit Distributors was created, which handled somewhere in the neighborhood of 50 per cent of the crop, however lacking control. All of the existing marketing agencies continued in the business. The crop of apples being much lighter, better prices were realized, and many thought the marketing problem had been solved by the creation of the North Pacific Fruit Distributors. The fact of the matter is that while due credit is due them for the good work they did in 1913, competition still remained among the different marketing agencies without co-operation, consequently when 1914 came along with another good sized crop, apple prices went to the level of 1912. The apple growers had had a second lesson. They had given all of their time to production and quality of fruit and had been successful. They had trusted to the marketing concerns to get prices and had been unsuccessful. There was

THE joy of having things grow and multiply is largely a matter of soil culture and good seed.



are good seeds always. We make them so by our elaborate methods of seed testing, by our strict field supervision and by our careful selection of strain. Surely such efforts on our part to produce good seeds is your best guarantee. Catalog mailed free

The Chas. H. Lilly Co.
Seattle and Portland

"WE STARTED RIGHT
AND WE ARE RIGHT"

6458 Acres

IN OUR ENTERPRISE

4178 Acres

ALL IN APPLES

Nine miles continuous rows of trees, the largest apple orchard ever planted. All are one, two and three years old; the two and three year old all sold, amounting to over 3,000 acres.

We are now offering our one year trees to suit you.

We give five years' from date of planting, free care. Our company is unlike others in the feature of staying with our purchasers after the free care period. Our plans make our interests mutual; we all work together for the interest of all.

Our Booklet will give you a simple statement of our dealings and methods. Write us for information.

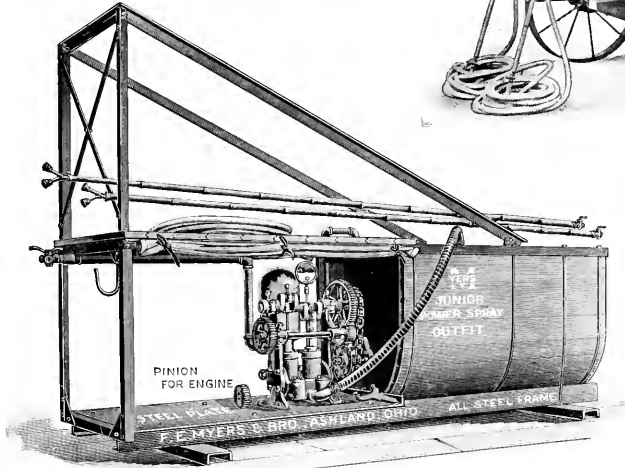
DUFUR ORCHARD COMPANY

Northwestern Bank Building
Portland, Oregon

YOU CAN BUY
**The MYERS
 SPRAYER**

AS YOU WANT IT

IF YOU have your own Engine and Truck we can furnish you the Myers Power Sprayer as shown below



or complete with Stover
 Special Spray Engine
 and mounted on our Low
 Steel Wheel Trucks—



Four Sizes—Nos. 1, 2, 10 and 12

Write us for prices

Mitchell
 LEWIS & STAYER CO.

Portland, Oregon
 Spokane and Boise

no indication that the marketing concerns would co-operate. Fruit growers realized that it was up to them to devote their attention to the selling end of the business.

In the year 1904 the editor said, "Growing fruit is one business, selling fruit is another business." This expression has been copied in almost every publication throughout the country and is becoming a slogan adopted by nearly all of the marketing agencies. It still holds true, but it is also true that the selling concerns have not got the returns that fruit growers felt justified in expecting, consequently it was up to the fruit growers to give the matter attention with a view to improving and bettering the selling conditions in order that they might receive the full market value of their product. Consequently a big conference was held at the National Apple Show in Spokane, which seems to be the headquarters in promoting many good movements for the benefit of the fruit industry. It resulted in the forming of a by-products committee, created however for another purpose, but big and broad enough to grasp the situation. This by-products committee called the apple growers of the Northwest together in Seattle January 22 and 23. The heads of the marketing agencies were called in and a general discussion followed. An amicable understanding was reached and sufficient

progress made to justify calling a convention in Tacoma February 15, which lasted three full days. This conference was called for the purpose of getting down to business and formulating some definite plan of action. The meeting

Healthy
 Trees
 Perfect Apples

when you spray with

"SCALECIDE"

—the spray that's endorsed the country over as "The one great dormant spray." Mixed 1 to 15, it kills every scale it reaches; no get your money back. Guarantee with every package. It's easily prepared, non-corrosive and non-clogging. 1bbl. equals 3bbls. lime sulphur. Destroys eggs, larvae and fungi in dormant state. Simple, safe, economical. Send for free booklet, "Scalecide, the Tree Saver." Write today, to Dept. D

B. G. PRATT CO.
 59 Church St., New York City

PORTLAND SEED COMPANY
 PORTLAND, OREGON
 Northwestern Agents

Pratt's "Scalecide"

Orders and inquiries will have prompt attention.

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

Position as Superintendent

of a large orchard by a thoroughly competent orchardist, familiar with Northwestern conditions. College man. Best of references. Address "L," care "Better Fruit."

Apple Seed

We have to offer a nice stock of fresh Vermont apple seed. Write for samples and prices.

F. H. McFARLAND
 Waterville, Vermont


**Portland Wholesale
 Nursery Company**

Rooms 301-302 Stock Exchange Building

Corner Third and Yamhill Streets

PORTLAND, OREGON

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT



ORCHARD SPRAY MATERIALS

Best in Quality, Uniform in Price, Successful in Results

Distributing warehouses in principal fruit growing sections of Northwest for—
ARSENATE OF LEAD, Paste and Powder;
ATOMIC SULPHUR; BORDEAUX MIXTURE; LIME-SULPHUR SOLUTION;
OIL SPRAYS and SOAP

Descriptive Catalogue and Bulletins Nos. 3 and 5 tell plainly how to control orchard troubles. Mailed free on application.

GENERAL CHEMICAL COMPANY
 Royal Insurance Building SAN FRANCISCO

Automatic Anti-Frost Alarm

Infalible; accurate; better and ten times cheaper than an alarm thermometer. Will give the fruit-grower a timely warning of approaching frost. Can be set to ring bell at any temperature desired.

Price \$4.00 complete.


THE ANTI-FROST STOVE CO.
 621 Main Street, CINCINNATI, OHIO

Orchard Yarn

Progressive orchardists, those right down to the minute in methods of protecting heavy laden fruit trees, are agreed that tying branches with Orchard Yarn is the modern way of supporting orchard trees. It is not expensive, is easily done, and the time to tie is when trimming. The spurs are firm together, less easily broken off than later, leaves are not in the way and all parts of the tree can be seen. Saving but a small percentage of trees from being broken down will pay for the expense of tying an entire orchard. One-ply Tared Manila Yarn will run about 200 feet per pound. Two-ply will run from 90 to 100 feet per pound. Put up in 5-pound balls or on 10-pound spools. In 5-pound balls the yarn pulls from the inside and is more easily handled.

Sold by all merchants handling orchard supplies.

Manufactured by
The Portland Cordage Company
 PORTLAND, OREGON



To STRAWBERRY GROWERS

Strawberries are a quick fruit. While they are on the market they bring good prices. It is up to you to grow as many and as big ones as you can.

Beaver Brand Animal Fertilizers
 "A Fertilizer for Every Crop"

will help you do it. Our **Beaver Brand "D" Animal Fertilizer** possesses the necessary food elements to feed your strawberry plants, and other fruit plants and trees. Fertilizer Booklet F37 is yours for the asking. Full of valuable information.

UNION MEAT COMPANY
 North Portland, Oregon

continued for three days, and never before in the history of the Northwest has a more serious-minded and earnest-minded gathering of able men taken place. The sessions lasted until midnight, and on the third day the session was continued without adjournment for lunch until 3 p. m., when the meeting adjourned. At this convention a plan was adopted which was approved unanimously, section by section, by every one of the one hundred and seven delegates present. This plan is given in full elsewhere in this edition. While there was considerable discussion and open contention, it was evident that every delegate had come for the purpose of getting together, and it was generally believed throughout the entire meeting that harmony would prevail in the end. Fruit growers who had seen many a battle in conventions and associations were sober minded, conservative and deliberate, giving wise counsel and continuously standing for harmony and agreement. The younger members, eager, earnest, were quick to feel the influence and yielded gracefully, meeting the opposition cheerfully with half-way concession and where necessary conceding even more. The general achievement being as already stated, a unanimous adoption of the entire platform, section by section.

It is the opinion of all the delegates present that the convention accomplished all that could be reasonably expected, and at the same time it is the opinion of all the delegates present that



Why not give your boy and girl an opportunity to make their *home study easy and effective?* Give them the same chances to win promotion and success as the lad having the advantage of

WEBSTER'S NEW INTERNATIONAL

Dictionary in his home. This new creation answers with final authority all kinds of puzzling questions in history, geography, biography, spelling, pronunciation, sports, arts, and sciences.

400,000 Vocabulary Terms. 2700 Pages. Over 6000 Illustrations. Colored Plates. The only dictionary with the Divided Page. The type matter is equivalent to that of a 15-volume encyclopedia.

More Scholarly, Accurate, Convenient, and Authoritative than any other English Dictionary.

REGULAR AND INDIA-PAPER EDITIONS.

WRITE for specimen pages, illustrations, etc. FREE, a set of Pocket Maps if you name this paper.

G. & C. MERRIAM CO.,
 SPRINGFIELD, MASS.



A One-Man Power Sprayer

This is the first season that you have been offered BEAN QUALITY in a power rig at a low price. The grower who feels that he has hardly enough trees to warrant the purchase of a large outfit—and who is unwilling to bother with a hand pump—will find this just the outfit he wants.

It's a real one-man rig. Just start the engine, open up the nozzle and go to work. The sturdy little Novo engine needs no watching—and the Bean Midget Duplex Pump is so simple and substantial in construction that it is practically trouble-proof.

Equipped with Patented Pressure Regulator, 100-gallon Redwood Tank, Steel Truck, Canvas Cover and Curtains, Bean High Pressure Spray Hose, Aluminum Rod and Complete set of Accessories—all ready for business. Nothing on the market to compare with the

Bean Eureka

If you want a bigger outfit—something that will supply two, three, or four lines of hose—get a BEAN GIANT. It's the King of Power Sprayers—a real marvel of power—of large capacity and built as true as a high-grade automobile from end to end.

We manufacture all kinds of Sprayers—from our massive Giant right down to the Bean Magic—the only hand pump on the market that can be continuously operated at high pressure by one man without exhaustive labor.

If you're interested in any kind of a Sprayer

Send for Free Bean Catalog 28-A.

It illustrates and describes the entire Bean line of Hand and Power Pumps. Tells you how they're made, what they'll do, and just why they're better. The Bean was the first spray pump offered to fruit growers in the United States. There are years, and years, and years of experience back of it—and experience counts. SEND A POSTAL FOR THE CATALOG NOW.

BEAN SPRAY PUMP CO.

213 West Julian Street, SAN JOSE, CALIFORNIA

12 Hosmer Street, LANSING, MICHIGAN

the convention attempted nothing that is either impossible or unreasonable of accomplishment. On the final day the convention developed itself into a perfectly organized body and formulated a plan that would enable the conference to act quickly by concentrating the power in the hands of committees smaller than the entire delegation, for the purpose of enabling the fruit growers to secure quicker action in carrying out their desires in reference to marketing during the present and future seasons.

The representatives present consisted of one hundred and seven delegates for the year 1915. The Northwest is divided into ten sections, according to the geographical location. Each section is entitled to three delegates at large and one delegate for every two hundred and fifty cars or fraction

thereof. In addition to this, two new districts were created, Western Oregon and the Lewiston-Clarkston districts. (A description of these districts appears elsewhere in another article in this issue, also the names and addresses of the delegates present.)

The entire body of delegates will be known as the "Growers' Council." Each district selected one man, who is chairman of his own delegation, who is a member of the Board of Control of Ten. The Growers' Council elected an executive committee of three, consisting of Mr. W. H. Paulhamus, a berry grower and manager of the Puyallup-Summer Fruit Growers' Association; Mr. Truman Butler, vice-president of the Butler Banking Company, Hood River, and Mr. C. T. Haskell of Wenatchee, secretary of the High-Line Water Users' Association, and fruitgrower.

Mr. Paulhamus was elected general manager at a salary of \$300 per month. Each member of the Executive Committee, when in session, will receive \$10.00 per day and expenses, and each member of the Board of Control, when in session, will receive \$5.00 per day and expenses. The management is placed in the hands of the general manager, Mr. W. H. Paulhamus, who will maintain an office in Puyallup, Washington, for the purpose of conducting the business. His power, authority and policy will be regulated by the Executive Committee. The power, authority and policy of the Executive Committee will be regulated by the Board of Control. In other words, after the Executive Committee and Board of Control have determined the general plan of operation the manager will have power to execute it. Whenever any difficult problem arises the manager will call in the Executive Committee for advice. If the problem is difficult and serious the Board of Control will be called in for consultation and advice before definite action is taken. The manager will employ bookkeeper, auditors and stenographers and such assistants as may be necessary to maintain a proper office, competent and properly equipped for carrying out the desires of the Fruit Growers' Council. The plan is simple, the scope limited, practical and workable.

At Seattle the delegates planned to have each marketing concern submit full reports of each day's sales. At

No Matter What Crop You Grow, Your Soil Must be Right Always

The universal soil need is Phosphorous.

The most economical and logical source of Phosphorous is

Finely Ground SHIELD BRAND High Grade

Phosphate Rock

The Phosphate of Lime

EFFICIENCY AND ECONOMY ARE INSEPARABLE EVERYWHERE

UNITED STATES PHOSPHATE CO.

405 Marsh-Strong Building, Los Angeles, California



Fruit Growers' Council—One Hundred and Seven Accredited Delegates Representing All Fruit Sections in Oregon, Washington and Idaho.
Names of Members of the Executive Committee of the Fruit Growers' Council for Season 1915-16:

Names and Addresses of the Members of the Board of Control of Ten of the Fruit Growers' Council of the Northwest, for the Season 1915-16:
 Washington; No. 3, Western Oregon District; No. 4, Hood River District, A. D. Moe, Hood River, Oregon; No. 5, Southern Oregon District, J. W. Remy, Medford, Oregon; No. 6, Walla Walla District, A. W. Simmons, Freewater, Oregon; No. 7, Spokane District, J. W. Remy, Spokane, Washington; No. 8, Corvallis, Montana; No. 8, Walla Walla District, A. W. Simmons, Freewater, Oregon; No. 9, Spokane District, J. W. Remy, Spokane, Washington.

Adams, J. B., Leavenworth, Washington.
 Allender, E., Okanogan, Washington.
 Anvil, L., Entiat, Washington.
 Atkinson, T. H., Entiat, Washington.
 Austin, N. D., Winesap, Washington.
 Baldwin, A. J., Opportunity, Washington.
 Bieh, George, Selah, Washington.
 Bourgaize, J. A., Zillah, Washington.
 Brainard, E. P. G., Payette, Idaho.
 Burlengame, E. C., Walla Walla, Washington.
 Chase, C. E., Brewster, Washington.
 Cline, A. B., North Yakima, Washington.
 Congdon, Albert S., North Yakima, Washington.
 Conant, O. K., North Yakima, Washington.
 Conway, Joseph R., Twin Falls, Idaho.
 Corbaley, Gordon C., Spokane, Washington.
 Cormue, P. W., Selah, Washington.
 Craig, A. G., Deer Park, Washington.
 Davis, John F., Opportunity, Washington.
 DeBow, C. E., Prosser, Washington.

Name of Accredited Delegates to Fruit Growers' Council:
 Karr, Arthur, North Yakima, Washington.
 King, D. W., Wenatchee, Washington.
 Kinyon, L. B., Naches, Washington.
 Loderhose, J. H., Entiat, Washington.
 Loyell, R. T., Wenatchee, Washington.
 MacLean, Lanchlin, Walla Walla, Washington.
 Maerum, C. A., Moses Lake, Washington.
 Maxwell, J. L., Dryden, Washington.
 Moe, A. D., Hood River, Oregon.
 Nelson, W. M., North Yakima, Washington.
 Nye, O. B., Hood River, Oregon.
 Pate, Frank, Malaga, Washington.
 Pearee, R. E., Grand Coulee, Washington.
 Porter, Edgar L., Deer Park, Washington.
 Porter, J. C., Hood River, Oregon.
 Porter, J. W., Sunnyvale, Washington.
 Powell, Francis P., Walla Walla, Washington.
 Ragsdale, R. M., Walla Walla, Washington.
 Reekers, C. W. J., Walla Walla, Washington.
 Remy, E., North Yakima, Washington.



Bean High Pressure Spray Hose

*Made to withstand the action of
 Oily and Corrosive Sprays*

This hose is constructed and treated especially for spraying use. High pressure doesn't weaken it. Oily materials and corrosive sprays don't rot it. You can depend on BEAN HIGH PRESSURE SPRAY HOSE—and do not need to work under the fear that at any moment it is liable to break through. Furnished in multiples of five feet, fitted with long shank female coupling and 1/2-inch hose connection. Fully guaranteed. With couplings attached, per foot, 23c, without couplings, 21c per foot. At your dealers or direct from us.

Bean Spray Pump Co.

213 W. Julian, San Jose, Cal.

12 Hosmer, Lansing, Mich.

Tacoma it was decided that this would create a heavy expense both for the marketing organization and the Fruit Growers' Council. Consequently a very simple plan was adopted instead. The Executive Committee and the Board of Control will confer with the managers of the different concerns for the purpose of ascertaining market values each year in accordance with existing conditions. The Growers' Council has the assurance of the marketing concerns that they are perfectly willing to follow a reasonable plan and such reasonable requests as the Growers' Council has adopted at Tacoma convention. Whenever any marketing concern is found deviating from this policy the Executive Committee will authorize an investigation. The result of such investigation will be reported to the fruitgrowers, who are expected to govern themselves accordingly. Marketing



Idaho and Montana, in Session at Tacoma, February 15-17, for the Purpose of Bettering Marketing Conditions and Prices.

Paulhaumus, Puyallup, Wash.; Truman Butler, Hood River, Ore.; C. T. Haskell, Wenatchee, Wash.

1915: No. 1, Wenatchee District, Clifford E. Chase, Brewster, Washington; No. 2, Yakima District, Harry Jones, Wapato, Washington; No. 3, Wenatchee District, E. P. G. Brainerd, Payette, Idaho; No. 4, Wenatchee District, E. P. G. Brainerd, Payette, Idaho; No. 5, Wenatchee District, E. P. G. Brainerd, Payette, Idaho; No. 6, Lewiston-Clarkston District; No. 7, Montana District, N. M. Sackett, Lewiston, Idaho; No. 8, Lewiston-Clarkston District, E. P. G. Brainerd, Payette, Idaho; No. 9, Lewiston-Clarkston District, E. P. G. Brainerd, Payette, Idaho; No. 10, Rogue River District, J. A. Westerlund, Medford, Oregon.

Session at Tacoma, Washington, February 16 and 17, 1915:

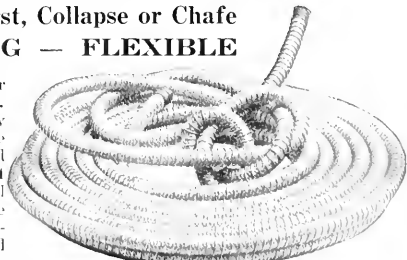
Washington. Roddy, T. F., Wenatchee, Washington.
Washington. Roderick, D. W., Wenatchee, Washington.
Washington. Rodwell, W. W., Hood River, Oregon.
Washington. Ross, E. W., North Yakima, Washington.
Washington. Rudkin, John J., Kennewick, Washington.
Washington. Sams, M. A., Zillah, Washington.
Washington. Sackett, N. M., Corvallis, Montana.
Washington. Sanderson, C. E., North Yakima, Washington.
Washington. Sawyer, C. B., Spokane, Washington.
Washington. Sugrue, Fred F., Cashmere, Washington.
Washington. Shannon, J. E., North Yakima, Washington.
Washington. Shadbolt, Fred A., Zillah, Washington.
Washington. Shearer, A. J., Payette, Idaho.
Washington. Shepard, E. H., Hood River, Oregon.
Washington. Simmons, A. W., Freewater, Oregon.
Washington. Sinsell, C. J., Boise, Idaho.
Washington. Slagle, Frank M., Pullman, Washington.
Washington. Slover, J. F., Milton, Washington.
Washington. Smith, Ben P., Chelan, Washington.
Washington. Snyder, Dr. J. F., Granger, Washington.

Sproat, C. H., Hood River, Oregon.
Stanton, E. E., Hood River, Oregon.
Starr, W. S., Twin Falls, Idaho.
Stone, William E., Wenatchee, Washington.
Taggard, J. D., Weitsburg, Washington.
Taylor, E. F., Kettle Falls, Washington.
Thompson, Chris, Moxee Valley, Washington.
Thompson, N. H., Grandview, Washington.
Twohy, C. L., North Yakima, Washington.
Vanderbilt, Oscar, Hood River, Oregon.
Waggoner, I. E., Zillah, Washington.
Warman, J. A., Peshastin, Washington.
Webb, R. R., Wenatchee, Washington.
Weed, H. B., North Yakima, Washington.
Westerlund, J. A., Medford, Oregon.
Williams, F. E., Opportunity, Washington.
Woodyard, Austin, Sunnyside, Washington.
Wright, J. Howard, North Yakima, Washington.
Wright, Miss Harriet E., Pateros, Washington.

concerns are dependent for their business, upon their very existence, upon the tonnage they receive to be sold by them for the growers. If they do not conduct themselves in such a manner as to secure the best possible returns for the fruitgrowers, of the growers remaining loyal to the Growers' Council, and it is the unanimous opinion of every delegate present that they will, the tonnage of any marketing concern can be automatically stopped. The Growers' Council do not expect anything unreasonable of the marketing concerns, but they do expect that the full market value will be obtained; that the fruit will be sold with ability, good judgment and proper distribution. This plan will prevent fruit being slaughtered on the auction market; it will prevent random consignment and glutted markets; it will prevent fruit being sold on an advance where power of

Mulconroy Flexible Metallic Spray Hose

Can't Kink, Twist, Burst, Collapse or Chafe
LIGHT — STRONG — FLEXIBLE



Answers all requirements for all kinds of spraying. 1000 lbs. pressure will not burst it. Easily coiled in a three-inch circle. Tube specially compounded to stand spraying solutions. Hose cannot kink, and therefore delivers full capacity at all times. Outside protected against knocks, dragging over rough surfaces, and sharp turns.

Trial order will show satisfaction and economy.

Manufactured solely by **MULCONROY COMPANY, Inc.**
PHILADELPHIA (Agents Wanted) NEW YORK

Established 1887



getting to market

The Yuba Ball Tread Tractor cuts the time and cost of getting to market.

It takes up but little more road space than a two-horse team, yet has the power of twelve or of eighteen horses — real live animals with head down and shoulder straining against the collar.

No matter what condition the roads may be in or how steep the grades may be, it never stops to rest. No balking — no shying — no shirking with it. It is easier to control than one horse.

THE YUBA BALL TREAD TRACTOR

Rough rutty roads will not damage the machine nor will the machine damage an asphalt-paved street. Its rugged, powerful construction and the low pressure per square inch on the bearing area of the treads prevent this.

The cost of this form of hauling power as compared with horses is surprisingly low. It helps solve the labor problem, too.

There is a booklet telling more about it.

THE YUBA CONSTRUCTION CO.

433 California Street, San Francisco

Dept. G-21

Works, Marysville, California

fixing the price is passed to the firm making the advances; it will prevent fruit being sold in competition at lower prices; it will prevent cutting of prices.

The marketing concerns have very generally signified their willingness to act in harmony. When any transgressions occur immediate investigation will follow by the Executive Committee and a fair, unbiased report will be rendered. If the marketing concern in error gives a satisfactory explanation and a definite assurance of good faith for the future the same will be

given proper consideration. If, however, any marketing concern refuses access to the records in reference to any such transactions or refuses to comply with the plan of the Fruit Growers' Council, such information will be communicated to the growers, who will be required to use their power, which is a cancellation of tonnage. The successful operation of the plan depends upon the loyalty of the growers to the Growers' Council, the Board of Control and the Executive Committee. Every delegate present be-

lieves in the loyalty of the fruitgrowers. It is the consensus of opinion of all delegates that the fruitgrower's success, his existence, his home and future depend on his loyalty to this plan, its Executive Committee and Board of Control.

The Luther Burbank Company, San Francisco, sole distributors of the Burbank creations, sent this office its attractive seed and nursery catalog for 1915, containing a good description of their many specialties.

Business Thinking On the Farm

Business thinking, which always precedes business methods, is entering the fruit growing industry more rapidly than ever before. Necessity is the mother of invention and while there may be no spectacular discoveries in the growing of apples and other fruit there is a rediscovery of certain basic principles which underlie all industrial prosperity. For instance the February number of Better Fruit opens with an article by the editor, E. H. Shepard, on "How Can We Make More Money on Apples?"

The first point made is to reduce the cost of production. "If we can save 5 or 10 cents per box in the growing and 10 cents per box in the harvesting it is worth saving." Mr. Shepard finds few growers keeping a record of the actual expenses of pruning, cultivation, spraying, irrigation, etc., on orchards. When growers begin to keep these records intelligently and persistently and compare these expenses with other growers' accounts "then they will ascertain where their own costs are too high and use such knowledge that certainly ought to be able to reduce each cost to a reasonable minimum."



SHERWIN-WILLIAMS
Dry Powdered
Arsenate of Lead

It's all poison. You pay for no water. Will not freeze. Light in weight. Easy to handle. Sure death to insect pests. Longest adhesion.

Won't injure fruit or foliage.



SHERWIN-WILLIAMS
Dry Powdered
Fungi-Bordo

Why take chances on home-made, guesswork Bordeaux Mixtures when it costs no more to use this scientific spray prepared by experts? A sure cure for all fungus growths.



SHERWIN-WILLIAMS
Dry Powdered
Tuber-Tonic

Kills as quick as Paris Green. Sticks like Arsenate of Lead. Checks fungus as effectively as Bordeaux Mixture. A three-in-one combination spray that keeps foliage growing to the end of season.



Send for our Spraying Literature
THE SHERWIN-WILLIAMS CO.

Insecticide and Fungicide Makers
707 Canal Road, Cleveland, Ohio



The ACME Pulverizing Harrow

Prepares A Perfect Seed Bed on Fall or Spring Plowing

THE COULTERS cut, crush and pulverize lumps and clods, leaving a leveled surface finely mulched to seeding depth with a compact under-soil. The air spaces are eliminated, insuring plant roots a proper medium for healthy and vigorous growth. Manure and stubble plowed under are left underneath to nourish plant roots.

Sizes from 3 to 17½ ft. cutting width. For one to four horses.

All Steel—Light Draft

Write for free catalog and name of nearest dealer.

DUANE H. NASH, Inc.
347 Division Ave., Millington, N. J.

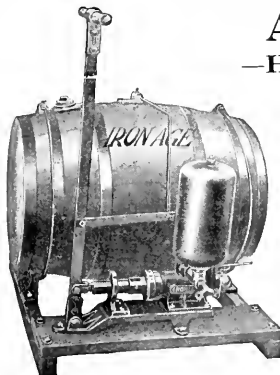
No. 23 6½ Ft. Wide

IRON AGE SPRAYERS

—The Big Favorite with Northwest Fruit Growers

Thousands of fruit men know that "Iron Age" means the best sprayer on the market. If you are interested in sprayers this spring, you should write now for the Special "Iron Age" Catalogs and name of the nearest dealer.

All Sizes
—Hand or Power



"Iron Age" is the largest line of Spraying Machinery made. Hand Sprayers, Bucket Sprayers, Vertical and Horizontal Barrel Sprayers, and Power Sprayers in all sizes.

"Iron Age" Sprayers are equipped with all attachments for trees and small fruit. Prices range from \$3.50 to \$300.00.

Fill out the coupon or send a postal today for the Special Spraying Catalogs and name of your "Iron Age" dealer.

"Iron Age" Goods are Distributed in the Northwest by

R. M. WADE & CO.
SINCE 1885
PORTLAND, ORE.

Oldest and Largest Independent Wholesalers of Farm Machinery in the Pacific Northwest

Delivered to you FREE

1915 Model

A sample 1915 model "Rider" bicycle, on approval and 30 DAYS TRIAL. Write at once for large illustrated catalog showing complete line of bicycles, tires and supplies, and particulars of most marvelous offer ever made on a bicycle. You will be satisfied at our low prices and remarkable terms.

RIDER AGENTS WANTED—Boys, make money taking orders for Bicycles, Tires and Sundries from our big catalog. Do Business direct with the leading bicycle house in America. Do not buy until you know what we can do for you. WRITE TO US

MEAD CYCLE CO., DEPT. S-269, CHICAGO

MAIL THIS COUPON
R. M. Wade & Co.
Send me Special "Iron Age" Spraying Catalogs.
Name _____
Address _____



HURST SPRAYERS

The Famous Quality Line

The result of 28 years' practical experience in building sprayers. Hurst Sprayers have stood the test of time and stand today head and shoulders above all competition. The big success of the Hurst line can be summed up in one word "Simplicity." Every Hurst Sprayer is a marvel of simplicity. No unnecessary parts to cause trouble and annoyance. Combined with simplicity they have the greatest convenience and utility.

32 Different Styles

A quality sprayer for every known need. Man, horse and gasoline engine power. Various sizes and styles of power sprayers, with and without engines. The Acme, shown below, is an exceedingly popular machine with the Western grower.

Get Our Big FREE Book

This book should be in the hands of every fruit grower and farmer. Used as a class book in many of the Agricultural Schools. Contains 74 illustrations and descriptions of insect and fungus pests and gives the remedy for each. Shows our complete line of sprayers.

Write the Royer Implement Company, of Portland, Oregon, or us for a copy of this free book at once.

Live dealers wanted everywhere

The H. L. Hurst Mfg. Co. 8230 North St. Canton, Ohio





This Book FREE

Mr. Shepard finds that vinegar factories and cider mills paid last year \$7 and \$8 per ton and this year they paid \$6 per ton for cull apples which constitute from 10 to 20 per cent of the entire crop and which cost the grower just the same amount of money to grow and to pick and to grade as the merchantable fruit. Selling these culls at \$6 per ton would amount to about \$20 per acre, which by-product no reputable business man would neglect.

Those who know E. H. Shepard will forgive him for using the following words, as the pressing need of pointing a moral would justify him in using this figurative language: "For nearly 40 years I have tried to find a way which would enable me to earn a living by working half of the time and loafing the other half, but I have not found it." Mr. Shepard adds:

"You know and I know that the average orchardist does not actually put in much more than six or seven months' work on his place during the entire season outside of his chores. By that I mean that after the first of November, when a crop is harvested, and during the months of December,

	BOOK ON
	DOG DISEASES
	And How to Feed
	Mailed free to any address by the Author
America's Pioneer Dog Remedies	H. CLAY GLOVER, V. S. 118 West 31st Street, New York

Kirstin One Man Stump Pullers Cost Less



Get my special low prices and free catalogue before buying a puller. Six models from \$37 up. Write at once to

A. J. KIRSTIN CO.
230 Commercial St., Salem, Or.

LIVE AGENTS WANTED EVERYWHERE. APPLY NOW.

There's \$Dollars \$Under Your Stumps

Cronk's Pruning Shears



To introduce the best Pruning Shears ever put on the market, we are now offering direct, providing dealer does not have them, our Cronk 26-inch Extra Heavy Shear at \$2.50 per pair, via parcel post, prepaid, cash with order. **March, Only, \$2.25.**

CRONK & CARRIER MFG. COMPANY, Elmira, N. Y.

Encyclopedia of Horticulture

JUST OFF THE PRESS

The only complete, thorough manual of fruit growing published—covering every feature—planting, pruning, cultivating, spraying, diseases, harvesting, etc., as used and approved by Northwest fruit growers. Contains valuable statistics. All reading matter arranged conveniently for reference and indexed.

It tells how to do the things that every fruit grower must do who is growing fruit as a business.

Three Volumes Handsomely Bound

Write for circulars containing full descriptive matter and prices.

ENCYCLOPEDIA OF HORTICULTURE CORPORATION
407 Miller Bldg., North Yakima, Wash.

The First National Bank

Hood River, Oregon

Capital and Surplus
\$135,000

4% Interest Paid on Savings and Term Deposits

F. S. STANLEY, President
E. O. BLANCHAR, Cashier

January, February and March, the fruitgrower does not do much of anything except a little pruning. The other six months, outside of the harvesting season, the average fruitgrower is not a very hard worker, and a big lot of them spend from one-quarter to half their time fooling around town instead of being actually engaged in producing something on the ranch which would bring them in extra money. With few exceptions, there is not a single man engaged in the fruit-growing business in the Northwest who cannot do something to bring in some extra money."



Modern Dairy Supplies



Simplex Separators



Wire Baskets



Brushes

"Every fruit grower should keep two or three cows," is the advice of Mr. Shepard of Better Fruit. And to care for your cows and your dairy products properly, you need modern supplies.

We carry the largest line of Dairy Supplies in the Northwest.

Simplex Cream Separators, Babcock Testers, Cans, Brushes, Bottles, Etc.

Free Catalogs gladly sent upon request.

MONROE & CRISSELL

"The Simplex Line" DAIRY SUPPLIES
126 FRONT ST. PORTLAND, OREGON

F. A. BISHOP, Secretary
HOOD RIVER ABSTRACT COMPANY
HOOD RIVER, OREGON
ABSTRACTS INSURANCE
CONVEYANCING



Ideal Gopher Trap

Only Trap guaranteed to catch large or small gopher. Being round with thin edges gopher walks into trap before detecting anything in runway. Positive grip. Jaws always hold. 100 per cent efficient—catches gopher every time. Far safer and surer than poisons or gas. Farmers say it's worth dozen other traps. Price 50c. If your dealer can't supply you, will be sent post-paid on receipt of 60c. Two traps for \$1.00; six for \$3.00. Money back if not satisfied.

E. J. CHUBBUCK CO.
Dept. C

731 Market Street SAN FRANCISCO, CAL.

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

Let us furnish you estimates on your

Fruit Labels

DISTINCTIVE AND ARTISTIC DESIGNS FURNISHED
THE SIMPSON & OELLER COMPANY
NORTHWESTERN BANK BLDG.
E. SHELLEY MORGAN, N.W. MANAGER. PORTLAND, OREGON.

BETTER FERTILIZING BETTER FRUIT

BETTER FERTILIZING and the consequent better fruit crop go hand in hand. To the thoughtful business orchardist fertilizing is a profitable investment—a chance to turn his money over at a good profit.

For good fertilizer you cannot beat

DIAMOND MIXED FERTILIZERS

The base of DIAMOND FERTILIZERS is bone meal and tankage. No cheap filler is used and every pound is good fertilizer. DIAMOND FERTILIZERS contain an unexcelled high percentage of available fertilizer, and available fertilizer is all that is of any use.

In addition to our various prepared fertilizers for specific purposes, we carry large stocks of

POTASH
NITRATE OF SODA
PHOSPHORIC ACID
BONE MEAL

LIME
LAND PLASTER
BONE TANKAGE
BLOOD

Prompt deliveries are assured.

FREE FERTILIZER BOOK We publish a carefully prepared and authentic reference book—let which every grower should have. It contains a dependable analysis of the various fertilizers and tells how and when to apply. We also have for distribution the valuable booklets "Potash Pays" and "Plant Food," published by the German Kall Works. Ask for Booklet S.

PORTLAND SEED COMPANY

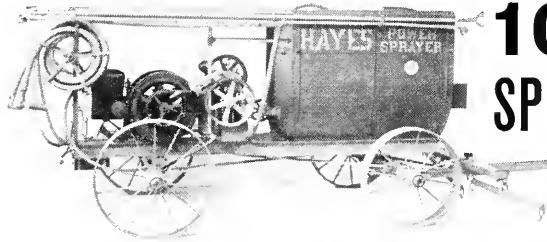
PORTLAND, OREGON

TRADE MARK

It is not so many years ago that the newly fledged fruitgrower in the Pacific Northwest would look with quiet scorn upon the man who should advocate any farming industry upon the fruit farm other than his specialized industry; just at this very moment it would be hazardous for any wise-acre to advocate any farming industry on the grain farm than that of growing wheat. With the soaring prices the wheat grower does not feel the pressure of the hand of necessity. That he, too, will come to see the light of basic business principles may be confidently expected.

Cost of marketing is another point taken up by Mr. Shepard. Home storage, consumption to follow the suppression of exorbitant retail prices, and the economy of motor power on the farm, are other features which will enable the fruitgrower "to make more money on apples."—Spokesman Review.

The Holt Mfg. Company, Incor., Stockton, Calif., are putting out a very attractive illustrated circular showing "the Littlest Caterpillar of All." The same can be obtained free on application.



**100%
SPRAYING**

**300 POUNDS
PRESSURE
GUARANTEED**

HIGH PRESSURE spraying is 100% efficient. The more thorough the spraying operation the greater is the **PROFIT** from the crop.

All **Hayes Power Sprayers** are guaranteed to maintain 300 lbs. pressure.

25 STYLES - Hand or Power Sprayers for Small or Large Orchards

Hayes SPRAYERS

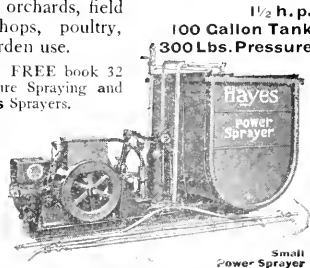
We make sprayers for orchards, field crops, shade trees, hops, poultry, painting, home and garden use.

WRITE Send postal for FREE book 32 on High Pressure Spraying and complete catalog of **Hayes Sprayers**.

HAYES PUMP & PLANTER COMPANY
GALVA, ILLINOIS



Large Hand Sprayer



Small Power Sprayer

W. Atlee Burpee Seed Company, Philadelphia, has just issued a very nice little booklet on flower and vegetable seeds, with a magnificent cover on one side of sweet peas in colors and Golden Bantam Corn on the other.

Hayes Pump & Planter Company, Galva, Ill., are mailing a very instructive circular, entitled "100 per cent Spraying," which is beautifully illustrated.

Sweet Peas—People who desire a nice bed of sweet peas should plant them just as soon as the soil is in proper condition.

Walnuts Are Dollars!

Plant a Walnut Grove that will grow into Dollars while you sleep. The Vrooman Franquette bears at three years and sells for 25 cents per pound—is smaller than an apple and sells for more money. Get in with the tide and get rich. At forty feet apart, it only takes 28 trees to the acre. Is cheaper than an apple orchard to plant, and makes your land more valuable. True Vrooman Franquette Walnut trees at bargain prices at

Mira Monte Nursery
San Jose, California

Burpee's Seeds Grow

THE truth of this famous slogan is proved by thousands of pleased and permanent customers. The Burpee Idea of Quality First—"to give rather than to get all that is possible"—combined with efficient service, has built the world's greatest mail order seed business. We deliver seeds free by parcel post, and have not advanced prices because of the war. Write today for **Burpee's Annual, the "Leading American Seed Catalog" for 1915.** It is mailed free. **W. ATLEE BURPEE & CO., Burpee Buildings, Philadelphia**

MORE, BETTER AND LARGER FRUIT

will be produced by your orchard the coming season, and a better market will be yours if you will spray your trees and fertilize your soil with

Nitrate of Soda, King of Fertilizers

which contains 15 per cent of nitrogen, the food which is the soil's "Staff of Life." It will produce tremendous results at small expense.

Write us for literature telling you what it will do and how to use it. Write Dept. B

NITRATE AGENCIES CO., Leary Building, Seattle

GREAT REDUCTION IN PRICES

Apples, Pears, Peaches, Prunes, Plums, Cherries, Apricots, Nut Trees, etc. Also Gooseberries, Currants, Strawberries, Grapes, Berry Bushes, Rhubarb, etc.

ALL OF THIS STOCK MUST BE SOLD

Write today submitting your want list for quotations; also ask about our premium offers, which are worthy of your consideration.

LAFAYETTE NURSERY CO., Desk A, Lafayette, Oregon

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

BUY AND TRY

White River Flour

MAKES

Whiter, Lighter Bread

Seeding and Harvesting Red Clover

Throughout the greater part of the clover belt clover is seeded in the spring on winter wheat or with spring grain. In the southern part of the clover belt seeding in corn at the last cultivation has been successful. When red clover is seeded on winter grain it is sown broadcast early in the spring when the ground is honeycombed by freezing and thawing. If sown later when the ground can be worked it is broadcasted and harrowed in or seeded as shallow as possible with a disk drill. In the spring grain sections red clover is sown at the same time the grain is drilled. It is the practice in some locations to attach a grass seeding attachment to the grain drill and drop the clover seed either in front or behind the grain hose. If dropped in front of the grain hose the drill will cover it, but if dropped behind it should be harrowed in. Care should be taken to see that the seed is covered about 1 inch in loam soils and one-half inch in clay soils. It is important that the seed be well covered so that the young plants will have sufficient moisture to become established. It is recommended on soils which are poor in humus to apply a dressing of straw or manure to the winter wheat. This will help to control washing and packing as well as the loss of moisture. It may be the means of establishing a stand which would otherwise fail. Eight to ten pounds of seed are usually sown to the acre.

Red clover should be cut for hay when just past full bloom. At this stage the maximum protein and dry matter is present, the leaves are still intact, and the stems green. The hay should be so handled that it will reach the barn or stack with the least possible exposure to the weather and loss of leaves. It should not be allowed to become too dry in the windrow and should be cured in the shock. The second crop of clover may be cut for hay, pastured, or allowed to mature for seed. If a seed crop is to be harvested it should be cut when nearly all of the heads have turned brown or black. The mower, self-rake reaper, or binder may be used to cut the crop. When the mower is used the hay should be raked and bunched while damp to prevent shattering. It should not be tied in bundles when the binder is used.

Observations indicate that failure to obtain a successful stand of clover is due to a number of different causes, any one or any combination of which may react very unfavorably to its growth. The primary causes of clover failure appear to be due to depletion of the humus content of the soil and soil "acidity." Clover will not succeed on poorly drained soil. Lack of fertility reduces the yield in some sections. In the spring grain sections the nurse crop should be seeded from one-half to two-thirds the usual rate.

When a full seeding of the nurse crop is made, and this is especially



The Name Behind the Goods

CASE "25"

Complete \$1350—5% Discount If Cash
If We Equipped and Priced as Others Do
\$1239⁷⁵

Of the 30 medium-priced cars—from \$1250 to \$1500—the CASE costs the least.

This is the only car that comes *completely* equipped with Extra Casing, Tire Cover and Extra Inner Tube On Rim, Weed Non-Skid Tire Chains, and Eight-Day Clock.

On any other car, men have to pay extra for all these necessary features. The farmer requires them even more than the man in town. Because you drive in the country six days to his one. You are much more remote from garages and service stations.

These features, with 5 per cent discount that we give if cash, amount to precisely \$110.25.

Add this to the price of any other car in this class, and it costs you more than the CASE "25" complete at \$1350.

Or deduct it from the \$1350 price of the CASE, and this car costs but \$1239.75, on their basis of equipment.

Hidden Values

CASE buyers count this low cost an extreme advantage. Yet these cars have never been sold on price. They are winning men everywhere because of the way they are made and the stuff that's in them.

These are the "unseen values" in the vitals of a car. And you must rely upon a maker's ability to build them right. Also his reputation for embodying them.

Your Safeguard

In both of these respects CASE stands, as you know, without a peer.

We have won, through more than 70 years, acknowledged leadership as makers of farm power machinery. And motive power is the basis of an automobile. So—when it comes to you, as it must, to rely on the name behind some car—

Remember that CASE means utmost security.

* * * * *

And remember that CASE cars are sold by our own organization. All over America, and beyond, it handles this car in connection with our other products. Hence we save thousands where other makers must spend—in selling. And so we spend in many ways for better materials and workmanship. *These are ways where others must save.*

Our new illustrated catalog tells you of many of the places where we spend to your advantage. Before you buy a car, have this book and learn the facts that save your repair bills.



NOTE—Ask us also for our 1915 catalog picturing and describing CASE Tractor, Farm Machinery, Tractors, CASE-Racing Tractor Game Flows, Corn Shellers, Hay Balers and Road Mowers. Sent free, postpaid.

CASE

The Car With the Famous Engine (282)

J. I. Case
T. M.
Company
Inc.

Founded 1842
Dept. 548
Racine, Wis.



POTASH

is food for thought
as well as for crops
this year.

When shipments were interrupted by the war, it was estimated that there was enough Potash on hand in the United States to provide two and three per cent Potash in mixed fertilizers for this spring's trade. Some manufacturers had more than enough for these percentages.

Since then minor sources of Potash have been fully utilized, and additional shipments from the usual source are still being received.

The supply is below normal, but this need not prevent farmers securing some Potash in their fertilizers, nor should it lead farmers to decide not to use fertilizers.

There is no reason to return to the out-of-date goods without Potash, although some authorities may try to "wish" them on us.

We have not used enough Potash in the past. The largest annual import of Potash was only one-seventieth of the Potash taken from the soil by our 1914 corn crop and only one-fifteenths of the Potash lost every year in drainage water.

Spring crops use from two to ten times as much Potash as Phosphoric Acid. Get as much Potash in the fertilizer as possible. A few firms are offering to furnish from four to ten per cent.

There is no substitute for Potash. It may be harder to get just now, but POTASH PAYS.

GERMAN KALI WORKS, Inc., 42 Broadway, New York
Chicago, McCormick Block
Atlanta, Empire Bldg.
San Francisco, 25 California St.
Savannah, Bank & Trust Bldg.
New Orleans, Whitney Central Bank Bldg.

true of oats, the greater portion of the soil moisture is used by the grain. The clover plants thus become weakened and when the grain is cut they are killed by the hot sun before they have time to recover. Alsike clover does well on soil which will no longer grow red clover, and where moisture is sufficient it is recommended that alsike be planted. Sweet clover or soy beans are very good soil renovators, and they may replace red clover in the rotations until the soil is in such condition that red clover will succeed.

The Encyclopedia of Horticulture

The Encyclopedia of Horticulture is a new work just off the press, edited by Dr. Granville Lowther and Mr. Worthington of North Yakima, Washington. It is a magnificent set of books, consisting of three large volumes of several hundred pages with hundreds of illustrations. It is a practical encyclopedia of horticulture. It is not only an encyclopedia of horticulture but practically a manual of horticulture for the fruitgrower. It deals in a practical way with every feature of horticulture,—varieties of plant, setting the orchard, cultivation, pruning, spraying, harvesting, etc. In addition to this it is a complete manual for all the different diseases and pests, telling how they can be recognized and giving treatment for eradication, control and prevention. It contains much information about marketing and harvesting, and also contains an immense amount of statistical matter which is of great value to the fruitgrower. While many books have been written about horticulture, this is the first set of books that covers the field of horticulture thoroughly in a practical way, and therefore is of inestimable value both as a guide and for reference to the fruitgrower. It is a set of books that should be in the possession of every fruitgrower. Full particulars can be secured by writing the Encyclopedia of Horticulture Company, North Yakima, Washington.

The Fruit Growers' Council, Board of Control and Executive Committee. —If the information in the March edition of Better Fruit interests you about this great movement on the part of the apple growers of the Northwest to secure better prices, don't fail to subscribe now so as to get the April edition because that will contain some very interesting features and descriptive matter in reference to this great movement which is not available for the March edition.

The Panama-Pacific International Exposition discontinued the sale of season tickets six weeks before the opening day, because the unprecedented advance sale of bulk admissions led the management to believe that it could obtain more money by suspending reduced rates. This sale of tickets indicates that the Exposition is going to be a wonderful success.

LESLIE BUTLER, President
TRUMAN BUTLER, Vice President
C. H. VAUGHAN, Cashier

Established 1900

Butler Banking Company

HOOD RIVER, OREGON

Capital \$100,000.00

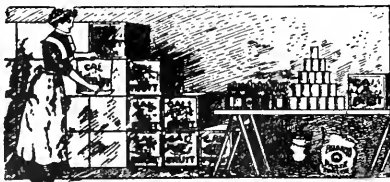
4% Interest Paid in our Savings Department

WE GIVE SPECIAL ATTENTION TO GOOD FARM LOANS

If you have money to loan we will find you good real estate security, or if you want to borrow we can place your application in good hands, and we make no charge for this service.

THE OLDEST BANK IN HOOD RIVER VALLEY

Paste for Labeling—"Palo Alto" Paste Powder



added to cold water, instantly makes a beautiful, smooth, white paste. Ready for immediate use at a cost of 10 cents a gallon. No labor. No muss. No spoiled paste.

PASTE SPECIALISTS

Robinson Chemical Works

349-351 Eighth Street

San Francisco, California

Built Like a Hand

There are many practical reasons why this "Dan Patch" is the perfect driving glove.

There is your size with snug fit and complete protection yet built to give bare-hand freedom.

Hansen's Gloves

have proved for thousands of farmers that work can be done best, easiest and fastest when hands are in healthy, happy condition—and for this you need Hansen's.

Our 500 styles include gloves for women and boys. All should know the joy and saving of a Hansen. At your dealer's or ask us.

O. C. Hansen Mfg. Co.
130 F Street
Milwaukee, Wis.

Write for Free Book of Gloves

All Sizes. Colors—tan, chamois and dove.



The Rumley Company advises us that all correspondence in future should be addressed to La Porte, Indiana. They state that under the management of a receivership their affairs are going along just the same as they ever did. We are also informed that their branches are being conducted in the interests of the company and its customers just as actively as usual. In fact they state they are giving their branches increased attention in their endeavor to render more efficient service in the way of prompt shipments of machinery and repairs. This office is in receipt of three very attractive catalogs on farm power machinery sent out by the M. Rumley Company.

Mahlon Terhune, freight broker, Produce Exchange, New York City, has just issued a very interesting circular giving the dates of all steamers sailing from New York City. The total export shipment of apples in barrels for the season to January 30th was 2,024,510. The total shipment last season to January 30th was 1,511,966 barrels, showing an increase in export shipment of apples for the year 1915 of about 33½ per cent.

Directors of the Northwestern Fruit Exchange held their annual meeting at the new headquarters, Seattle, January 26. Some changes were made in the list of officers, who are now as follows: President, Reginald H. Parsons; vice-president and general manager, W. F. Gwyn; secretary, Arthur A. Prince; treasurer, D. H. White; assistant secretary and assistant treasurer, H. H. King.

The Hardie Mfg. Company, Lansing, Mich., are putting on the market a spray outfit especially adapted for the small orchardist and steep side hills, called the "Hardie Jr." There has long been need for a small power outfit at a reasonable price and the Hardie Mfg. Company claim the Hardie Jr. fills the bill.

The Portland Seed Company have just issued their Complete Seed Annual for the year 1915, which is a very attractive and interesting catalogue, with a very handsome cover illustrating in colors half a dozen ears of Golden West sugar corn. The catalog is free and can be obtained on request.

The Northwestern Fruit Exchange desires to say to all correspondents and friends that it is in most cordial and hearty accord with the action taken by the Convention of Fruit Growers at Tacoma, and is exceedingly optimistic of the results which it confidently expects will issue therefrom.

Preliminary steps have been taken for the organization of the various marketing agencies of the Northwest into a Shippers' League for the purpose of co-operation amongst themselves in conjunction with the Executive Committee and Board of Control of the fruit growers for the adoption of constructive measures which shall be mutually beneficial to growers and shippers.

A meeting will be called of all shippers for the purpose of affecting a permanent organization of the Shippers' League. This meeting will be held in Seattle, at the earliest possible date.

Rubber Importations.—Reports issued by the Goodyear Tire & Rubber Company indicate that they will endeavor to make arrangements for their regular supply of rubber by the way of the Pacific Ocean, should Germany's blockade declaration seriously interfere with present traffic conditions.

Orengo Prune Trees Cheap

Myrle Creek, Oregon, November 26, 1914. I feel like saying a few words to you on paper in regard to my Italian Prune trees. I am more than pleased with them. Really they are better than I expected. I cannot speak too much in praise of your company for such good trees. They are of good size, good height and good roots. Everyone that I talked with that ordered from you is well pleased.

(Signed) J. A. Copeland.

"ORENGO TREES" are universally known for their high standard of quality, and particular planters prefer to buy where they can depend upon quality, reliability and satisfaction. When you want really good trees at right prices, you can't do better than with us. Try it.

Oregon Nursery Company
ORENGO, OREGON
SUCCESSFUL salesmen wanted.

HAMILTON MADE SPRAYING HOSE
WILL SPRAY YOUR TREES FOR SEVERAL YEARS FOR ONE COST

½-inch Perfect Spray Hose, 6 p.p.v. 50-foot pieces coupled, or ½-inch STELLINGWORTH Reel Spray Hose in 500-foot lengths. Either grade will stand 600 lbs. test and will be satisfactory for any power or hand sprayer. \$15.00 for 100 feet. Cash with order. Freight paid to your station. Shipped direct from factory the day the order is received.

HAMILTON RUBBER MFG. CO.
TRENTON, N. J.

YOU WANT THE BEST SPRAYER



also
Write for Catalogue 8c
REISER MANUFACTURING CO.
Manufacturers 182 Morrison St., Portland, Ore.

You want to save time, temper, trouble and trees. You want to raise fruit that brings the highest prices. You want to know all about our sprayer before you buy. There is more you ought to know. Do You Want To Know The Price?

BARGAINS
—IN—
Walnut Trees

- | | |
|--|-----------------------|
| Franquettes, 6 to 8 feet, on California Black Root . . . | Price Per 100 \$65.00 |
| Franquettes, 4 to 6 feet, on California Black Root . . . | 50.00 |
| Franquettes, 3 to 4 feet, on California Black Root . . . | 40.00 |
| Franquettes, 2 to 3 feet, on California Black Root . . . | 30.00 |

True Vrooman Strain of Franquettes

Dug with exceptionally good roots, at

Mira Monte Nursery
San Jose, California



Ask for Catalogue No. 5

Planet Jr. 12-tooth Harrow

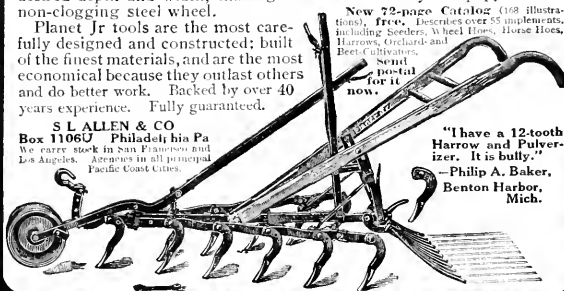
is stronger, steadier in action, does more thorough work, and lasts longer than any harrow made. Is invaluable to market-gardeners, truckers, tobacco and small-fruit growers. The twelve chisel-shaped teeth cut out all weeds, stir and mellow the soil without throwing dirt on plants, and the pulverizer leaves the ground in finest condition. Can be set to desired depth and width, making delicate work easy. Equipped with non-clogging steel wheel.

Planet Jr tools are the most carefully designed and constructed; built of the finest materials, and are the most economical because they outlast others and do better work. Backed by over 40 years experience. Fully guaranteed.

S L ALLEN & CO
Box 1106 Philadelphia Pa
We carry stock in San Francisco and
Los Angeles. Agents in all principal
Pacific Coast Cities.

New 72-page Catalog (68 illustrations). Free. Describes over 55 implements, including: Sowers, Wheel Hoes, Horse Hoes, Harrows, Orchard and Beet Cultivators. Send postal for it now.

"I have a 12-tooth Harrow and Pulverizer. It is bully."
—Philip A. Baker,
Benton Harbor, Mich.



MILTON NURSERY CO.

A. MILLER & SONS, Inc.—MILTON, OREGON

Pear, Cherry, Apple, Prune, Peach. Full line Shade & Ornamental Stock

Quality in Nursery Stock is a condition, not a theory. It is something we put into our trees. not say about them. Thirty-five years' experience enables us to do this.

SALESMEN WANTED

A Catalog and Special Prices on Request

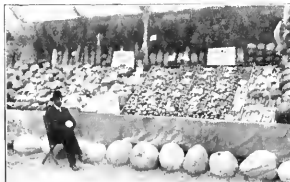
1866
to
1915

49 years
in the
North-
west



Prize-Winning Seed from the "House of Gurney"

Products of Gurney's seed won first premium at nine state fairs for best collection of vegetables in 1914:



Products of Gurney Seed, Oregon State Fair

The 160 page catalog and book of information free. Tells all about quality trees and seeds. It's free.

GURNEY SEED & NURSERY CO.
Box 5, YANKTON, SOUTH DAKOTA

- Oregon, Utah
- Maine
- Nebraska
- Michigan
- Wisconsin
- Illinois
- Tennessee
- Louisiana

By N-E-HANSEN

The Panama-Pacific International Exposition had an attendance of 298,000 the first day. It is estimated by railroad people that one million people will visit the Exposition from east of the Rockies. It is also estimated that each one will spend \$100 in real money on the Pacific Coast. That means the Panama-Pacific International Exposition will bring \$100,000,000 in real money from the East and leave it on the Coast. But more important than this—Eastern people will have an opportunity to become acquainted with our wonderful climate, the productivity of our soil and the splendid opportunities for business, which means that the Pacific Coast will grow faster in the future than ever before in the past. There is no place in the world where a living can be made as comfortable and easy as on the Pacific Coast, and no spot on the globe where the climate is so delightful the year round.

Buy It Now.—Reports generally indicate that the finances of the United States are in a splendid condition. On the first of March the deficit in trade balance had been completely absorbed that existed before the war and the last week in February the trade balance in United States was \$200,000,000 in our favor. The United States farming communities are prosperous. They had good crops and fair prices, and there is no reason for the present lack of activity in business. Everything is ready for the return of normal conditions. It only needs co-operation on the part of the public to move the wheels of commerce and when they once commence to run prosperity will return. If people will buy now what they actually need and what they will have to buy a little later they will help start business going that much quicker.

"Vertical Farming," Dr. Gilbert Ellis Bailey, Professor of Geology, University of Southern California, which is a reading course in soils, soil culture and the uses of explosives in agriculture, with series of practical questions prepared by Mr. J. H. Squires, Agronomist, is the title of a booklet which is free on request by writing the E. I. DuPont Powder Company, Wilmington, Del.

The Chamber of Commerce Bulletin, issued by the Chamber of Commerce, Portland, Oregon, issued a splendid number in February, called "Progress and Prosperity Number." This number should be read by every resident of the Northwest. It is a splendid publication for anyone to send to eastern friends if they want to give them some idea of the Northwest.

The Fancher Creek Nursery, Fresno, Calif., have just issued a booklet by the President, Mr. Geo. C. Roeding, entitled, "Results of Thirty Years' Experience in California Horticulture," which contains much valuable and interesting information for the fruit grower and florist.

For spraying vines and small fruits you need a light, easily handled but effective sprayer. Thousands of farmers and fruit growers find the answer to this question in the

ACME Compressed Air SPRAYER

This sprayer throws a mist-fine spiral spray with a pressure up to 60 pounds. You can use any spray, for the non-clogging nozzle cleans itself with every operation of the spiral plunger. The heavily galvanized riveted tank holds 3½ gallons of spray and empties on one charge of air. Seamless brass pump can be placed in or outside the tank as preferred. Brass-and-bronze nozzle is non-corroding. Every joint is air- and water-tight. Each sprayer has heavy 3-foot hose and adjustable shoulder strap. We can furnish extension rod for tree spraying and crook-necked nozzles for low-lying vines.

Send for ACME Catalog

Many other styles of ACME sprayers—liquid and dust—also the famous ACME Corn and Potato Planters, are shown in our big free catalog. Send for it. We will supply you with what you want if you are not near a dealer. If you are near a good dealer he can probably show you the ACME line. He at least will gladly order what you want from one of our distributors. Our Washington and Oregon distributors are:

WASHINGTON

Marshall-Wells Hardware Co., Spokane
Holley & Mason Co., Spokane
Jensen-Kind-Byrd Co., Spokane

Mitchell, Lewis & Slaver Co., Spokane
The Ohas. R. Lilly Co., Seattle
Poison Implement Co., Seattle

OREGON

Portland Seed Company, Portland
Poison Implement Company, Portland

Mitchell, Lewis & Slaver Co., Portland
Marshall-Wells Hardware Co., Portland

Ask your dealer to order through his jobber. For ACME catalog please address our home office.

POTATO IMPLEMENT CO.
327 Front St., Traverse City, Mich.



\$5.00 East of the Rockies

Experience of Oscar Vanderbilt, Hood River

DURING four months of the past apple marketing season Oscar Vanderbilt traveled through the middle west in the interest of the Apple Growers' Association. The experiences that he tells of point conclusively to the fact that attempts by individual growers to sell their apples lead to disaster, not only for themselves, but for the established selling machines in those markets demoralized by flooding of the independent shipper.

In the following interview Mr. Vanderbilt gives an account of his experiences: "The first four weeks I was out I found the towns of the middle west, where box fruit had never been used, ready to take good quantities of our fruit at prices asked by the associations. We sold from three to 10 carloads of fruit in many places. Dealers were putting the fruit into consumption on a small margin, and business was moving. But just as soon as rates were cut the box apple business ceased. We had more trouble in selling one carload of fruit than we formerly had in disposing of 10 cars. The reason for this was that each dealer was afraid that his competitor would buy at a lower price and undersell him in the local market. They immediately began to press

their barrel stuff, which had been laid aside for future business.

"In a number of places I found growers who had shipped their own crops of from one to three carloads and who had followed them up to sell them. They have no doubt by this time learned the error of their way and will never try the venture again. In no case did I find one of these independent shippers getting more than from 65 to 70 cents per box on the track at destination for their fruit. The highest returns I heard of were received by a grower who sold two carloads, composed of Jonathans, Rome Beauties, Ganos and Winesaps, to the Boston Store in Chicago. He received 70 cents a box on track. There was a charge of \$19 per car for demurrage. You can figure for yourself, after this demurrage and freight was taken out, the apples netted the grower about nine cents per box.



"In another instance I found two carloads of apples at Green Bay, Wis., on the tracks. The grower was trying to sell them to all buyers. But they had quickly gotten together, and when they refused the prices he asked, he put them in dry storage and in danger of loss by freezing. I visited the trade, but they told me that they did not want fruit at my price, since they

had two cars in their town already that they expected to get for 65 cents per box. You may be sure that I concluded to hunt other fields. Dealers as a rule frown on this class of business, and they handle it in the way they do to discourage it; for it demoralizes their business. I talked with a number of the growers who tried to sell their own apples this year, and I do not think they will ever try it again. I found in my experiences that the towns that had never handled box fruit were among the most liberal buyers, after they had discovered the qualities of the Northwestern product. "Along with the heavy crop one of the big reasons for poor prices this year was the heavy business done in bulk apples amounting to some 50,000 or 60,000 carloads that were sold all over the middle west. The weather in



MILK CANS

Freed of Clots
and Grime
Thoroughly
and
Quickly
by

Large
Sifter Can,
with Full
Directions, 10c

Old Dutch
Cleanser

Chases
Dirt

MAKES EVERYTHING 'SPICK AND SHAN'

October and November was mild and this fruit moved rapidly at for 40 to 75 cents per hundred pounds. Had the usual freezes in the fall of the year prevailed this competition would have been eliminated. Such a condition may not prevail again in years. Hood River has been particularly fortunate in the disposition her apples this year, all fruit having been sold for the most part, except some Newtowns, while hundreds of thousand of boxes of other Northwestern apples remain in storage. And Hood River's price has been more than 10 cents per box higher than that of other district. The district has been fortunate in having Wilmer Sieg to handle the fruit. When Mr. Sieg first came here I did not particularly take to him. But my four months' experience in the middle western markets have pointed out to me the benefits that he has brought to Hood River. I believe that a great bulk of our crop has been disposed of advantageously, on account of his broad acquaintance and friendship among the market men. When I would strike a town I would always find that they knew him and were friendly to him, and this thing helped me more than anything else to make my sales."

GIANT WINTER RHUBARB Now Best Time to Plant
Should return from \$1,000 to \$1,500 per acre first year. If interested in Rhubarb, Berries or Cactus, write J. B. WAGNER, Specialist, Pasadena, California.

Mr. Vanderbilt was present at the Seattle meeting and declares that he is for harmony. "Lots of the growers," he says, "had got the idea that by the formation of the big central selling concerns we had reached the ultimate ends. No agency is perfect, and we must stop the holes as we find them. The organizations evolved in 1913 have been of benefit to the grower. For if we had last year such conditions as were prevalent in 1912, a great many apples would never have left the orchards at all. But while we are talking harmony, why not try to get together here at Hood River and go to the front in a solid organization. We have got to do this very thing sooner or later, or all of us are going broke. There is no use of Hood River growers going into the eastern markets and competing against each

Fruit Tree Stocks

Apple, French and Japan Pear, Mahaleb and Mazzard Cherry
Myrobalan Plum

Apple and Pear Grafts

Machine wrapped. Quality guaranteed. None better

Roses

Immense stock of hardy kinds

Ornamental Trees, Shrubs, Vines

Gooseberries, Currants, Raspberries, Blackberries
Large stock root cutting plants

MOUNT ARBOR NURSERIES
E. S. WELCH, Proprietor
138 Center Street SIENANDOAHI, IOWA

A Complete Line of
High Quality Nursery Stock
Always pleased to quote your WANTS

HOME CANNERS All sizes. Used by U. S. Government Schools, Girls' Clubs, Collaborators and Farmers everywhere. For Catalog and Special Offer, write
ROYAL HOME CANNER CO., DEPT. P., ALBION, ILLINOIS

PORTLAND, OREGON

PORTLAND HOTEL

The hotel which made Portland, Oregon, famous
Most Desirably Located. In the Center of Shopping and Theatre District
Covers a City Block

Broadway, Sixth, Morrison and Yamhill Streets

EUROPEAN PLAN—\$1.00 per day and upward

Write for Portland Hotel Booklet Geo. C. Ober, Manager

Steam Pressure Canning Outfits

Can your Fruits, Vegetables, Corn, Meats, Fish, etc., for home use and for sale at a big profit. Outfit more than pays for itself the first year. Eleven different sizes. Book of Canning Recipes free with outfit. Tells how to can everything. Write for Catalogue B.

Built by
HENNINGER & AYES MFG. CO.
47 First Street
PORTLAND, OREGON

other. Local petty jealousies cause the most of our strife. We cannot all be bellwethers. When Hood River presents a solid front then we can have the recognition that we deserve."

Growers Sign with Distributors

At the annual meeting of the Yakima Valley Fruit Growers' Association Dr. A. J. Pressey, of Selah, was reelected president, and F. E. Sickels, of North Yakima, secretary and manager. A majority of the new executive board in whose hands the management of the association rests are the same men who served last year. The old members on the board, in addition to Dr. Pressey, are J. J. Rudkin, of Kennewick, who was chosen treasurer, W. B. Armstrong, of North Yakima, and E. L. Porter, of Donald. The new members are C. H. Hinman, of South Nob Hill, Austin Woodyard, of Sunnyside, and J. F. Snyder, of Zillah. The full subcentral board of trustees consists of 48 members, or two from each of the locals, 27 of whom served last year.

The annual report of the Yakima subcentral revealed that it has handled 2,350 cars of fruit, including 1,870 cars of apples, this season to date. At the same time a year ago it had shipped 1,244 cars and had only 60 cars left to sell. The returns from sales are \$572,944 to date; the distributions, including advances on fruit in storage and for which returns have not yet been received, are \$678,284. The actual expense of operating will be \$22.30 per car this season, as compared to \$34.60 last year. Although the tonnage has increased 82.5 per cent, the total expense is only 11.5 per cent more. The membership has grown from 966 a year ago to 1,302. The report states that the association will equal its 1912 returns on apples which were the highest in the Northwest. The association ships a little less than 40 per cent of the Distributors' tonnage.

The Central Idaho-Washington Fruit Growers' Association has reported the reelection of F. N. Wright as vice-president and acting manager and C. H. Russell as secretary-treasurer of the Clarkston (Lewiston) Producers' Association. J. McAssey was chosen president. The other trustees elected are F. Baslington, John R. Smith, Peter Anderson and S. D. Steinger. It is stated that the Clarkston-Lewiston district will ship double its past tonnage through the Distributors during the coming season.

The Western Oregon Fruit Distributors has notified the central office that the Ashland Fruit and Produce Association at its recent meeting voted unanimously to continue the existing contract with the Distributors.

Vertical Farming

PROVED

BY

Effects of Orchard Blasting

with



RED CROSS FARM POWDER

These cuts are made from photos showing comparative growth of pear trees from Spring of 1913 to Aug. 1, 1914, Bellemont Orchards, Inc., Norfolk, Va.



IN DUG HOLE

IN BLASTED GROUND

ALL progressive farmers and orchardists know that trees planted in blasted ground grow much faster than those planted in the old way and bear fruit earlier.

This proves the truth of the principles of Vertical Farming, which aims to cultivate downward as well as to till the top soil.

Three years ago tree planting in blasted holes was experimental—now millions of trees are set out by the Vertical Farming method every spring and fall.

In like manner, blasting the subsoil to increase general crop yields, now regarded as experimental, will in a few years, be common.

To learn how and why Vertical Farming may double the yields of your farm, get the **Free Reading Course** in Vertical Farming, by Dr. G. E. Bailey, one of the best works on soils and soil culture ever published. Sent free with every request for our Farmer's Handbook No. F-338. Write now.

Established 1892 **DU PONT POWDER CO.,** Wilmington, Delaware

Two World Expositions

NOW OPEN

Reduced fare round trip tickets, permitting stop-overs at all points in either direction, to the Panama Pacific International Exposition, San Francisco, and to the Panama California Exposition, San Diego, on sale every day to November 30

via the

Scenic Shasta Route

Three Fine Trains Daily

Shasta Limited — San Francisco Express — California Express

Stop-overs on One Way Tickets

Ten days' stop-over will be allowed at San Francisco and Los Angeles on one way tickets sold to Eastern Cities when routed via the Southern Pacific, which will enable tourists to visit either or both Expositions.

Full particulars, fares, literature on the Expositions, train schedules, etc., from nearest Agent of the

SOUTHERN PACIFIC

John M. Scott, General Passenger Agent, Portland, Oregon

YOU CAN EARN \$50.00 PER DAY



with the Gearless Improved Standard Well Drilling Machine. Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours.

Another record where 70 feet was drilled on 2 1/2 gal. drillate at 9c per gal. One man can operate. Electrically equipped for mining shafts. Fishing job. Engine ignites. Catalogue W. REIERSON MACHINERY CO., Manfra. Portland, Ore

ACME Foot Lift Weeder

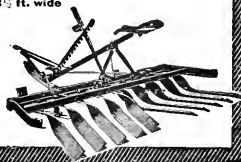
A RIDING orchard cultivator and mulcher. Gets all the weeds—large and small. Used in orchards or for summer fallowing; keeps down weed growth and properly mulches surface soil. **Foot Lift Lever** enables operator, on seat, to clear off weeds that may gather while working. All steel construction. Light draft. Depth of cut adjustable. Price right.

Your John Deere Dealer Sells It!

What a user says about it:
No. Yakima, July 31, 1914
Dear Sirs:—I take pleasure in recommending the ACME Foot Lift Weeder as the best implement I ever used for killing weeds and pulverizing the ground and I have used all of them. \$100 would not buy mine if I could not get another one.
(Name on request)

Another User Writes:
Mosier, Oregon, Aug. 22, 1914
Gentlemen:—I consider the Acme Foot Lift Weeder the best tool for cultivating orchards that I ever used, and as a weed killer it certainly is perfection.
(Name on request)

DUANE H. NASH, Incorporated
347 Division Avenue Millington, N. J.



"BEST WEED KILLER EVER USED"


BARKER WEEDER, MULCHER AND CULTIVATOR

The Barker Weeder, Mulcher and Cultivator successfully, in ONE OPERATION, kills weeds and forms a perfect soil mulch.

It cuts weeds below the surface, chops them up and spreads them out on top—where they can't grow—to be dried out and turned into plant food. Breaks crust, pulverizes clods, aerates the soil. The REEL KNIVES and STATIONARY BLADE, working in combination, make a loose dust mulch which holds the moisture, forcing plant growth and insuring size and quality. Does more work and better than ten men with hoes. Has shovels for deeper cultivation.

Costs little. Write today for illustrated folder and Special Factory-to-User offer.

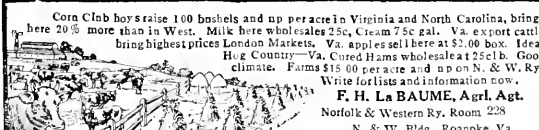

THE BARKER MFG. CO., BOX 112, DAVID CITY, NEBRASKA



VIRGINIA FARMS PAY MORE

Corn Club boys raise 100 bushels and up per acre in Virginia and North Carolina, bring here 20% more than in West. Milk here wholesaler 25c, Cream 75c gal. Va. export cattle bring highest prices London Markets. Va. apples sell here at \$2.00 box. Ideal Hug Country—Va. Cured Hams wholesale at 25c lb. Good climate. Farms \$15.00 per acre and up on N. & W. Ry.

Write for lists and information now.
F. H. La BAUME, Agrl. Agt.
Norfolk & Western Ry. Room 228
N. & W. Bldg., Roanoke, Va.


RHODES DOUBLE CUT PRUNING SHEAR

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders.

Pat'd June 2, 1903.

RHODES MFG. CO.,
820 S. DIVISION AVE., GRAND RAPIDS, MICH.

Write for circular and prices.



The Typewriter for the Rural Business Man

Whether you are a small town merchant or a farmer, you need a typewriter.

If you are writing your letters and bills by hand, you are not getting full efficiency.

It doesn't require an expert operator to run the L. C. Smith & Bros. typewriter. It is simple, compact, complete, durable.

Send in the attached coupon and we will give special attention to your typewriter needs.


L. C. Smith & Bros. Typewriter Co.,
Syracuse, N. Y.

Please send me your free book about typewriters.

Name

P. O.

State



The Growers' League

[From the Wenatchee (Washington) World]

FOR the information of those growers who were not in attendance at all the sessions of the preliminary convention for the formation of Wenatchee-North Central Washington Growers' League, the Committee on Organization presents in condensed form the resolutions adopted by the convention, stating its conclusions and the aims and purposes for which the League is being created and the essential methods which must be employed to bring those aims and purposes to fulfillment. Particular attention is called to the fact that these resolutions were presented and approved on the last day of the convention and that it was their intent to express the opinions brought to the convention by the precinct committeemen as given to them by the growers at the meetings held during the two weeks preceding the last session of the convention. It seems, therefore, that the majority of all growers in this district are unanimously agreed upon the principles hereinafter set forth.

(1). That we are working toward the establishment of fruit sales on a cash basis and at a fair price and the economical handling and marketing of our products to the end that maximum net returns may be made to the grower. (2). That we will practice co-operation among ourselves, true economy in the management of our affairs and absolute fairness toward those with whom we have business dealings. (3). That the following should be the duties of the League. (1). Establish grading and packing rules for fruit which shall be the uniform standard for all the units of the League. (2). Organize a board of inspection who shall inspect all fruit packed under the direction of the League and instruct growers, graders and packers in the standards of the grades and pack. (3). Establish a bureau of statistics and information whose aim shall be to gather facts in regard to the production, condition of fruit crops, markets, marketing

Clover Seed

We handle more clover seed than any dealer on the Coast and can fill any sized order promptly. Prices are always the lowest on the best grades of seed.

Vetch Seed

This is a specialty with us and we are in a position to make the lowest market prices. Also, a complete stock of Seed Grain, Farm and Field Seeds, Garden Seeds, etc. Send us a list of what you are going to need for our prices. Catalogue free.

D. A. White & Sons
SALEM, OREGON

conditions, transportation, cost of production, and other facts affecting the production and marketing of fruits, and disseminate such information among the growers of the League, and the marketing agencies handling the products of its League. (4). Educate the public so that the consumer may know the comparative values of our different varieties and grades; improve those markets already established and discover and develop other markets; and regulate distribution both as to season and points of delivery. (5). Obtain data and assist the units in purchasing the supplies used by its members, and give aid and assistance to the units in financing its membership. (6). Investigate storage conditions and assist the units in obtaining storage that the marketing may continue over a longer period. (7). Investigate horticultural legislation and assist in securing laws beneficial to the fruit growers of the Northwest.

It is recommended that the above Declaration of Principles be read at the meetings of the various units and if found to express the general opinion of the growers that it be adopted and spread upon the minutes of the units. Committee on Organization, D. W. King Chairman, H. A. Saunders, U. G. Pogue, C. T. Haskell, J. B. Adams.

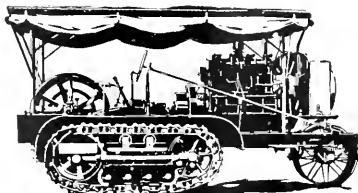
Board of Control Movement

Views of H. F. Davidson.

No market expert is a greater exponent of such plans for the future than H. F. Davidson, who says: "The apple growers of Wenatchee, who have formed a cooperative league among themselves, are moving along in the right direction. If their efforts are successful, a wonderful step forward in the solution of the problem will be taken. The growers of Yakima, although they have not fully evolved their plans as yet, are getting together on similar lines. This trend all looks good.

"The Rogue River Valley has been very badly disorganized. So much so, that much of its fruit has been marketed on a disastrous basis, after advances have been made by commission houses. Such plans are very poor and will not only continue to be disastrous to the growers of the Rogue River Valley, but will have a serious effect on the industry in other districts, where comparative varieties are produced and sold on the same markets.

**Now
Two
Speeds
Forward**



The Caterpillar always has been a good hill-climber—that's one reason why Holt builds two-thirds of all tractors on the Pacific Coast. But we wanted a tractor that would climb *any* hill with *any* load. So this year we can give you a low speed (1.36 miles per hour) in addition to the normal speed (2.04 miles per hour). We figure now that it is going to take a good-sized mountain to stump the Caterpillar—no matter how big a harvester or gang of plows it is hauling. One owner writes that he hauled a 26-ft. cut Holt Harvester on a 48 per cent. grade, doing over 40 acres to the day.

It is constant improvements like this that are always keeping the Caterpillar so far in the lead—and that account for the numerous repeat orders that come in. There are other 1915 betterments, too—strengthening the frame, making a bigger steel platform, adding cut gears and a 3-bevel gear reverse—but write for new Catalog BE 175 and get the whole story.



Reg. U.S. Pat. Off.

Don't say Caterpillar unless you mean Holt!

THE HOLT MFG. CO.

(Incorporated)

Spokane, Wash. Stockton, Cal., Peoria, Ill.
Cons. Wagon & Mch. Co., Sales Agts.
Salt Lake City, Utah.

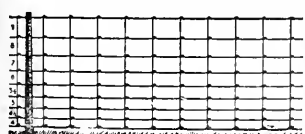
IRRIGATION PIPE

Adapted to the special requirements of Orchard and Ranch Irrigation—delivering water in quantities wanted, where wanted. We have installed many large systems and will gladly advise you what we consider the best practice for your tract.

Storage, Spray and Wagon Tanks
Irrigation Flumes, Culverts
Smoke Stacks, Etc.

Coast Culvert & Flume Company
PORTLAND (KENTON), OREGON

DIRECT TO CONSUMER



39-INCH FENCE 28 CENTS
A ROD
Made of high-grade galvanized wire. Write for catalog and prices.
NATIONAL FENCE COMPANY
Columbia and Water Sts. PORTLAND, ORE.

DEPENDABLE BRAND

Lime Sulphur Solution

*The Standard Solution for
The Fruit Growers of the Northwest*

Highest percentage of Sulphur in Solution in proportion to Baume test of any brand offered on this market.

MANUFACTURED BY

GIDEON STOLZ CO., Salem, Oregon



Grasselli Arsenate of Lead Paste Grasselli Arsenate of Lead Powdered

The quality which has been standard in all fruit growing sections of the United States during the past eight years.

Grasselli Brand Sulphate of Nicotine

Guaranteed to contain 40% Nicotine.

Thrips and other plant lice can be destroyed by spraying with Grasselli Brand Sulphate of Nicotine. May be combined with Arsenate of Lead or Lime-Sulphur Solution, or both, to give a combined treatment for Plant Lice, Leaf Eating Insects and Fungous Diseases.

The Grasselli Chemical Co.

Cleveland, Ohio

St. Paul, Minnesota

ESTABLISHED 1839

Distributors in All Leading Fruit Districts

LADD & TILTON BANK

Established 1859

Oldest Bank on the Pacific Coast

PORTLAND, OREGON

Capital \$1,000,000.00
Surplus 1,000,000.00

Officers:

W. M. Ladd, *President*
Edward Cookingham, *Vice President*
W. H. Dunckley, *Cashier*

R. S. Howard, Jr., *Assistant Cashier*
J. W. Ladd, *Assistant Cashier*
Walter M. Cook, *Assistant Cashier*

INTEREST PAID ON TIME DEPOSITS AND SAVINGS ACCOUNTS

Accounts of banks, firms, corporations and individuals solicited. Travelers' checks for sale, and drafts issued available in all countries of Europe.

"Of all the districts Hood River is at present the best organized. But even here we have enough dissension to cause considerable losses to our own growers. And it seems, in the light of information secured through our costly experience during the past few years, that it behooves the growers and shippers of all districts to get together, themselves, and then they can make satisfactory arrangements with each other. The movement at Seattle was certainly a step in the right direction. But it will not be of much benefit to the fruit growers, unless each district perfects an organization on its own and then practically gives the central board its unanimous support. The details of the central board of control have as yet not been worked out, but satisfactory working plans will come as a consequence, if the proper spirit is placed behind the movement which must be built up by the growers, themselves, through their shipping organizations."—Hood River Glacier.

Apples in the English Market

Mail advices received from J. C. Houghton & Co., Liverpool, England, dated January 7, give the following report of apples in the English market: "New Hampshire apples continue to arrive in unsatisfactory condition, and many Maine apples also show up badly. The difference in price between tight and slack is now more accentuated, buyers seeming to have lost confidence in anything not absolutely reliable. Virginia apples have been rather more in evidence, and anything choice was appreciated. Many results of Canadian and Nova Scotian apples are disappointing. Newton box apples from the Northwestern States are of excellent quality, which makes the discouraging returns to shippers the more regrettable." The arrivals of American and Canadian apples for the week ending January 5 is given as 22,423 barrels and 15,360 boxes; total arrivals to January 5, 1915, 549,839 barrels and 228,126 boxes.—California Fruit News.

YOU CAN MAKE \$20.00 A DAY

AND JUST ONE MAN ON THE JOB WITH A **KING OF THE WOODS DRAG SAW**

Full description of the saw's benefits and contact information for Reiersen Machinery Co., Manufacturers, PORTLAND, OREGON.

Mosier Man Optimistic

Dr. C. A. Macrum, of Mosier, who attended the Seattle meeting is optimistic over prospects for the ultimate success of the movement started by the By-products Committee. "The delegates at the Seattle meeting were there with an honest purpose and discussed the problems with a serious mind. I am a harmony man, and I look for good to come of the movement. We simply must forget the past, trust each other and get together for the general good. We must remember that what is being done is not for any individual, but for all fruit growers. The fruit growers have got work ahead of them, but I think they will work out a plan that will be very beneficial."

Elects Officers

At the annual meeting held last week the Northwestern Fruit Exchange made some changes in its list of officers. The officers of the Exchange at present are as follows: President, Reginald H. Parsons; vice-president and general manager, W. F. Gwyn; secretary, Arthur A. Prince; treasurer, D. H. White; assistant secretary and assistant treasurer, H. H. King.

UNIVERSITY OF OREGON

SCHOOL OF COMMERCE

Portland, Oregon, January 2, 1915.

Editor Better Fruit:

I want to congratulate you on the very comprehensive article appearing in the New Year's Oregonian from your pen. It certainly is the most comprehensive, sensible and practical review of the situation which could possibly be made at this time. The problems laid down by you are so absolutely necessary to the welfare of the industry that they should be carefully digested and absorbed by everyone associated with the business. If the fruit business of the Northwest is saved and made valuable, it will be on the lines which you have definitely laid out. It is certainly gratifying to have as editor of the best fruit paper in the United States a man so thoroughly conversant with the business in all of its practical characteristics. With a wish for a most Happy New Year for you and "Better Fruit," I am, very truly yours,

(Signed) H. B. MILLER.

True-to-Name Nursery

GALLIGAN BROS.
Proprietors

HOOD RIVER, OREGON DUFUR, OREGON

Growers of high grade nursery stock, guaranteed true-to-name. Breeders and importers of purebred Big Type Poland China Hogs. Service boars, broil gilts and weaning pigs for sale.

For catalog of nursery stock and prices on swine, write

True-to-Name Nursery

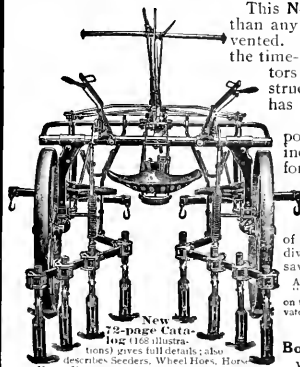
HOOD RIVER, OREGON

Orchardist Supply House

Franz Hardware Co.

Hood River, Oregon

Planet Jr. Cultivator



This No. 76 gives bigger, better results than any other one-row cultivator ever invented. It is a combination of the best of the time-tested principles of earlier cultivators into one simple, strongly constructed, easily handled machine that has no equal anywhere.

It cultivates, plows, and hills corn, potatoes, or similar crops 28 to 48 inches apart. No wood used except for break pins.

Built for thorough work and real, lasting service. Its superior construction of finest materials, accurately fitting parts, spring lifting levers, and variety of cultivating attachments make it yield big dividends year after year in time and labor saved and increased production.

Andrew Gleim, Wheelersburg, Ohio, writes: "I think the No. 76 Planet Jr is the finest cultivator on the market today. Especially for potatoes this cultivator is worth a half-dozen other makes."

S. L. ALLEN & CO
Box 1106U Philadelphia Pa

We carry stock in San Francisco and Los Angeles. Agencies in all principal Pacific Coast cities.

THE FAMOUS AETNA BRAND OF PURE LIME AND SULPHUR SOLUTION

Manufactured by an Orchardist of 25 Years' Practical Orchard Experience.

Extracts From Letters On File

W. K. Newell, President State Board of Horticulture, says: "I am using the Aetna Brand to my orchard and I am sure you are making a good article."

A. C. Goodrich, Commissioner First District. "I have used the Aetna and found every barrel fully up to test."

The Dalles, Oregon, July 10, 1914.—"Results obtained from use of Aetna Brand were most satisfactory and I can heartily recommend its use." (Signed) R. H. Weber, Commissioner Fourth District.

H. C. Atwell, President Oregon State Horticultural Society: "I think there is no better Spray made."

S. J. Galloway, Fruit Inspector Washington County: "After very severe tests I found the 'Aetna' Brand O.K."

White Salmon Valley Fruit Growers' Union: "After using the 'Aetna' Brand we are justified in the belief that there is no superior on the market." (Signed) J. J. Cozger, Manager.

Use the "Aetna" Brand for best results. Failure is impossible if you spray right. We absolutely guarantee the "Aetna" Brand to be the best on the market. It costs no more to use the best.

For prices, etc., write

B. LEIS & SONS, The Aetna Orchards, Beaverton, Oregon

The Aetna Brand is not sold through Portland dealers.

Ridley, Houlding & Co.

COVENT GARDEN, LONDON

Points to remember when consigning apples to the London Market

- 1.—We Specialize in Apples
- 2.—All Consignments Receive our Personal Attention
- 3.—The Fruit is Sold by Private Treaty on its Merits

CABLE ADDRESS: BOTANIZING, LONDON

Western Electric Rural Telephone



YOU cannot afford to have anything but the best in telephone equipment. The kind of instrument you use in your home has everything to do with the kind

of service and results that you get. Your experience has demonstrated the importance of the telephone. You have come to rely upon it in the most important phases of

life; therefore, the necessity of having the right kind of an instrument. The Western Electric Rural Telephone is guaranteed to give satisfactory service. This guarantee carries full weight, for Western Electric Rural Telephones are made in the same mammoth manufactory where all "Bell" telephones are built. Every part is strong and well put together.

Before you buy any new telephone equipment or replace any old, write to our house nearest you, as listed below, for more detailed information. Ask for book No. 145.

WESTERN ELECTRIC COMPANY

PACIFIC HOUSES:

San Francisco Oakland Los Angeles
Seattle Portland Salt Lake City

EQUIPMENT FOR EVERY ELECTRICAL NEED

Home Use Saves Big Crop

(New York Correspondent of Portland Oregonian)

TH E fact that over twice as many apples were shipped to the British Isles during the week preceding Christmas, this year, than during the same week in 1913 would indicate that the European war is not the direct cause of the moderate prices at which the North Pacific fruit is selling this winter. Counting three boxes to a barrel, 59,794 barrels were shipped from North America to England in the week ending December 19, 1914, while only 24,674 barrels were sent there in the same week of the preceding year. No apples were sent to Germany during the week preceding Christmas from either Canada or the United States, but only 801 barrels were shipped to Hamburg, the port of entry to the Kaiser's Empire in the same week of the preceding year; 168,798 barrels were shipped to Germany, according to the custom-house reports, during the eleven months ending in May, 1914. This is less than three times the amount sent to England from North America in the week preceding the holidays just passed.

The figures do not tell the whole story from the viewpoint of the Northwest, however, because most of the fruit sent to the German Empire were boxed apples, while the large shipments to England, both this year and last, consisted of the barreled product. Undoubtedly the war has had a "psychological" effect upon the markets and has made the consumers less able and too conservative to pay good prices for apples. The tremendous crop, however, that was produced in the United States and Canada made it necessary at the outset, counting the war out of the consideration, greatly to increase the consumption of apples. H. F. Davidson, of the North Pacific Fruit Distributors, estimates that 50,000,000 barrels of apples were grown in the country in 1914 as compared to 30,000,000 barrels in 1913, and that 13,000 cars were sent from the Northwest this year as compared to 8,000 cars sent during last season. This is an increase of 50 per cent. Lower prices and advertising are making the consumption of this enormous crop possible. "The movement is heavy," says Arthur Rule, manager of the North American Fruit Exchange, "and the consumption of apples is unparalleled."

Lime - Sulphur Solution

(INLAND BRAND)

Oil Spray

(BETTS)

THE C. G. BETTS COMPANY
MANUFACTURERS

Erie Street and N. P. Tracks, Spokane, Washington



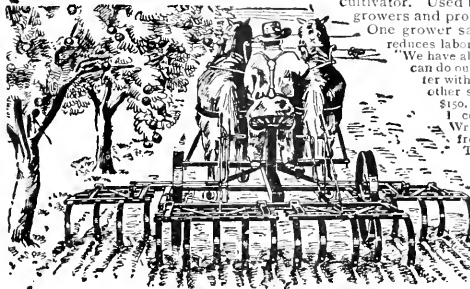
The effect of systematic advertising of a brand of apples has been shown by Guy Carolin, of the North American Fruit Exchange. During the last two years he has plastered New York with brightly-colored cards heralding the virtues of the "Skookum" brand of apples, until every school child and every parent think they know what a "Skookum" is. In the subway you read "An apple a day keeps the doctor away"; on the signboards you see "Eat the right apple at the right time," and elsewhere, "Say Skookum to your grocer." The result has been not only that the general demand for apples has been increased, but that the "Skookums" sell for from 15 to 25 cents a box more than the others of equal grade. The Childs and Thompson, as well as the independent restaurants, are featuring the baked apple. Their cooks have learned how to bake apples. The dish that they prepare bears but a small resemblance to the half-cooked, half-burnt apples that are still to be endured in the private boarding houses. The gas range, which cooks from all sides, it seems, has its share in this process that prepares a dish fit for the gods. Then, too, with apples to be procured more cheaply than formerly, the New York restaurateurs are serving a little of the scum with the milk. The result is that baked apples have become the most popular dish in town. The writer learned from inquiry at a little cafeteria on Amsterdam where they kept a pan of tempting baked apples in the window that they sold five pans of 18 apples each every day. They served meals to 400 people daily. A little figuring shows that nearly one out of every four customers buys a baked apple, and that three out of four probably have one for breakfast.

At the Columbia Restaurant on Broadway, where no baked apples were on display, the proprietor said that he was serving eight dozen, or about 100 apples, to his 600 or 700 patrons each day. Both Arthur Rule, manager of the North American Fruit Exchange, which represents the Northwestern Fruit Association, and H. F. Davidson, president of the North Pacific Fruit Distributors, who is in New York supervising the marketing of the apples of his association, are in favor of the suggestion that has been made in the Northwest that the growers discard all the smaller independent co-

FORKNER SPRING TOOTH TILLERS

WORK RIGHT UP TO YOUR TREES

Cultivate entire surface between rows without disturbing boughs or fruit. Does more work—easier and quicker—and leaves better surface mulch than any other cultivator. Used by thousands of fruit growers and pronounced *indispensable*.



One grower says: "The Forkner reduces labor 40%". Another says: "We have all kinds of tools, but we can do our work quicker and better with a Forkner". Still another says: "I wouldn't take \$150. for my Forkner Tiller if I couldn't get another".

Write today for catalog and free book—"Modern Soil Tillage"—invaluable to any farmer or fruit grower. Mailed free. Write today.

LIGHT DRAFT HARROW CO.
601 Nevada St.
Marshalltown, Ia.

WE MAKE A SPECIALTY OF

Catalogs, Booklets and Circulars

FOR

Nurserymen, Fruit Growers, Manufacturers and Selling Agents

Write us for specifications and information. Quality and Service

F. W. BALTES AND COMPANY
Fine Printing PORTLAND, OREGON

HOOD RIVER VALLEY NURSERY COMPANY

Phone 5634 Route No. 3, Box 227 HOOD RIVER, OREGON

Plantation four miles southwest of station, Belmont Road
We will be pleased to show you trees, apple trees that have a heritage, a quality that should be considered by everyone who plants a tree. Our trees are grown in clean hillside virgin red shot soil with clay subsoil, producing the most vigorous root system. Our buds are selected from the best bearing healthy Hood River trees that make the Hood River apple famous throughout the world. Our trees will give you satisfactory results in vigor, fruit and quality. Ask for catalog. We guarantee our products. Apples, pears, peaches, apricots, almonds and walnuts. A complete line of the best varieties of all kinds of fruits.

H. S. BUTTERFIELD, President

W. J. ENSCHEDE, Manager

LOOK! MR. FRUITGROWER

one of your choice trees is dying? Why? Gophers! Yes, it's one of those Pocket Gophers taking \$3.00 out of your pocket. Protect your trees and save those \$3.00 by using the



CINCH POCKET GOPHER TRAP

If set by the directions and with judgment it will get the gopher and you will get the returns from that tree and others. If your dealer doesn't have the traps, write us at once. Sample trap postpaid \$3c.

Manufactured by

W. C. EMMERSON & CO.
FOREST GROVE, OREGON

FREE ON REQUEST—Our Silent Salesman

Quiet and unassuming, but up to date and reliable. Nicely illustrated and printed especially for Western buyers of



SEEDS OF ALL KINDS. Trees, Roses, Garden and Poultry Supplies, Canaries, Parrots, Bird Supplies, Fertilizers, Sprays, Sprayers, etc.

Don't buy until you read about our new policy—"No agents, but special prices, charges prepaid."—We save you time and money. Ask for Catalog No. 27—the new one.

ROUTLEDGE SEED & FLORAL CO. 169-171 SECOND STREET PORTLAND, OREGON

A Dreadnaught in Sprayers

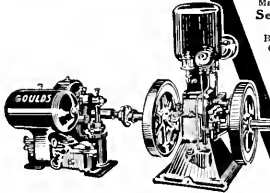
—such is our "Dreadnaught" Duplex Power Sprayer. It delivers a hurricane of death to orchard pests of all kinds for years and years, without a hitch. In a recent test a "Dreadnaught"—made just as we'd sell it to you—worked against 225 lbs. pressure for 800 hours, pumping a quarter of a million gallons, with no care except for lubrication and repacking. If wear had been taken up, the pump would undoubtedly have operated 2,000 to 3,000 hours. This test proves that with ordinary care the "Dreadnaught" should last ten seasons or more. Requires less than 1½ H. P. to deliver rated capacity—5.3 gal. per minute. Has heavy brass plungers, outside packed; non-corroding; uses either rotary or reciprocating agitator; all parts accessible; width 18½ in., length 22 in., height 18 in.—powerful, compact, durable. Ask your dealer to show you

GOULDS RELIABLE SPRAYERS

—50 kinds—hand, barrel, knapsack, power—one for every purpose. All severely tested and fully guaranteed. Backed by 65 years' pump-making experience. Consultation on your requirements, free. Every machine fully described in our valuable free book, "How To Spray"—which covers the subject thoroughly. Your copy awaits you. Plan for a clean, healthy, profitable orchard now. Write us.

THE GOULDS MFG. CO.

Largest Mfrs. of pumps
for all purposes.
Main Office and Works:
Seneca Falls, N.Y.
Branch Houses:
Boston New York
Chicago Atlanta
Houston



operative associations and center their efforts upon the two larger organizations. "The fewer men that are handling the sales the better for the grower," says Mr. Rule. "The shipper who sends his fruit through an organization that has no representative at the point of marketing is apt to be the loser," states Mr. Davidson. "It is not always inadvisable to sell through a private company, but control of such sales should remain in the hands of the representative of the grower who is on the ground and not 3,000 miles away."

Why Not Advertise Apples?

One of the golden opportunities that come to those who preach the gospel of advertising appears now with respect to the apple-growing industry in the United States. The country has heard much about the business blight which threatened to descend upon the South as a result of the cotton slump, but a very large share of the reading public does not realize that the European war placed upon the apple industry of this country a handicap almost as heavy, proportionately, as that which was imposed upon the cotton industry.

Gradually, year by year, our foreign apple trade has grown until now the foreign market, notably Great Britain, consumes a very large share of our annual output of fancy apples. The war put a "crimp" in this trade and there are sections—for instance the Piedmont district of Virginia and the apple-growing districts of Oregon and Washington—where the loss has been felt keenly. The moral of this is that the apple growers ought to undertake co-operative advertising campaigns that would create a greater market here at home. The healthfulness of the apple and apple products as items of diet has never been "played up" half so strongly as the subject deserves, and if apple growers—perhaps following the example of prune and raisin producers and the citrus fruitgrowers—would engage in systematic advertising campaigns designed to enlighten housewives as to new and varied ways of presenting apples in appetizing form, the propaganda would be almost certain to yield an increase of consumption that would well repay the effort and expenditure.

D. Crossley & Sons

ESTABLISHED 1878

Apples for New York and Export

CALIFORNIA, OREGON, WASHINGTON, IDAHO AND
FLORIDA FRUITS

Apples handled in all European markets at private sale. Checks mailed from our New York office same day apples are sold on the other side. We are not agents; **WE ARE SELLERS.** We make a specialty of handling **APPLES, PEARS AND PRUNES** on the New York and foreign markets. Correspondence solicited.

200 to 204 Franklin Street, New York

NEW YORK

LIVERPOOL

LONDON

GLASGOW

W. van Diem

Lange Frankan Straat 45, 47, 49, 51, 61

ROTTERDAM, HOLLAND

European Receivers of American Fruits

Eldest and First-Class
House in this Branch

Cable Address: W. Vandiem
A B C Code used; 5th Edition

Our Specialties are

Apples, Pears, Navel Oranges

In this day and age it behooves all producers of food products to "get up and dust." The cranberry growers are trying the experiment of putting their fruit on the market in package form (with recipes printed on the outside of the carton). The salmon packers have just made a beginning in packing this popular fish in glass jars. Skill in packing—perhaps with an element of novelty—and educational advertising would put apples and apple products on many a dinner table where at present baked apples, apple butter, cider, apple dumplings and apple pie are too seldom seen.—Agricultural Advertising.

Standard Pack Plan Endorsed

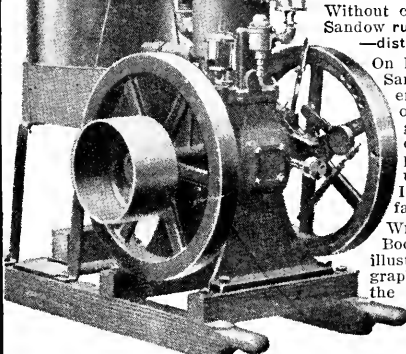
At a meeting of growers and shippers at the Wenatchee Commercial Club last night called by Inspector Clawson, the question of establishing a standard apple pack for the Wenatchee district was discussed. It seemed to be the sense of the meeting that to be successful that the effect of the law would have to be such as to take in the entire state. Before adjourning a resolution was presented to John F. Sugrue of Cashmere to the effect that it was the sense of the meeting that the chairman of the meeting, who was Representative-Elect Frank Reeves, should take such steps as to him seemed fit and proper to bring before the legislature a bill which would establish a minimum standard pack for the State of Washington. The resolution met with approval of those present with the exception of a few who expressed fears that the establishment of a minimum standard might have the effect of lowering the general excellence of the pack as now put out by the organizations of the Northwest.

The meeting was attended by 100 persons, a large percentage of whom took part in the discussion. The sense of the meeting was strongly in favor of the attempt being made. Mr. Reeves also expressed his desire to lay before the public at some future period two other bills relating to apple marketing. One of these was one providing that commission men should not be allowed to refuse to sell produce to any retailer who did not see fit to buy all his supplies from the same house. This was to protect the independent seller of fruit who desires to sell direct to the retail trade. Another bill was suggested against the commission man to

Save $\frac{2}{3}$ Fuel Cost

With A Kerosene Burning Sandow

Investigate!



Without change of equipment, the Sandow runs on kerosene—gasoline—distillate—or alcohol.

On low priced kerosene, the Sandow delivers more power per h. p. of rating, than ordinary engines do on gasoline. With the Sandow you can save the price of your engine in upkeep economy alone. Investigate! Get all the facts.

Write for Free Sandow Book, which shows you by illustrations from photographs why the Sandow is the simplest engine made—the easiest to run—the most free from trouble and repair expense.

Only 3 Moving Parts

Starts at 40 degrees below zero. Starts without cranking—runs in either direction—throttle governed—hopper and tank cooled—speed controlled while running—no cams—no valves—no gears—no sprockets—light weight—can easily be taken anywhere for work—complete ready to run.

THERE'S A SANDOW FOR EVERY FARM

Made in all sizes from 1 1/2 H. P. to 18 H. P. Have a Sandow to meet your needs—do the work you want done at greatest economy. Sandow will do your pumping—run your feed grinders—your cream separators—do all the stationary power work of farm or shop, and save you more money than any other engine on the market. Sandow is not just an ordinary engine. Special design for kerosene fuel means more simplicity, greater durability. Send for Free Book and judge for yourself.

TEN YEAR IRON CLAD GUARANTY

Absolutely protects you—Sandow must make good on every claim. It is because Sandow is making good every day on thousands of farms that we can make this iron-clad, binding guaranty. Users everywhere will tell you how Sandow saves fuel—saves trouble—saves repairs—and can be depended on for power all the time.

FREE TRIAL ON YOUR FARM

Book gives our Free Trial proposition. Use the Sandow every day 30 days on your own farm. If you don't say it is the most economical and most powerful farm engine you ever saw—if it does not satisfy you every way, send it back and we will refund every cent you paid for it.

SPECIAL LOW PRICE DIRECT TO YOU

Just compare these rock-bottom prices for Sandow Engine, with those of any other engine manufacturer, and remember Sandow quality is unsurpassed. Sandow prices are: 1 1/2 H. P. Bull Pup Engine, \$33.75; 2 1/2 H. P. Sandow, \$42.50; 4 H. P. Sandow, \$65.00; 6 H. P. Sandow, \$95.00; 8 H. P. Sandow, \$140.00; 12 H. P. Sandow, \$250.00; 16 H. P. Sandow, \$385. We have no agents—no jobbers—no middlemen—no dealers. You buy of us and keep all the middle profits and commissions in your pocket. Before you get any engine, be sure to have our low figures and see what you can save.

SEND FOR FREE SANDOW BOOK

It is full of plain facts on the farm engine question—illustrated from cover to cover with pictures from photographs showing the simple construction of every part of the Sandow—contains the letters of users of the Sandow. Remember it costs you nothing to get the facts—does not place you under any obligation whatever. Write today. A postal brings the book. Address

Detroit Motor Supply Co.

Detroit Mich
65 Canton Ave.

Send

For it today



H. HARRIS & CO.

Fruit Auctioneers

131 State Street
Boston, Massachusetts

Established 1847

Frank Moseley
Frank L. Ripley
Cutler B. Downer



Use Tree Tanglefoot

against Gypsy, Brown-tail and Tussock Caterpillars, Canker Worms, Climbing Cut Worms and Ants. It is also effective against any crawling insects attacking fruit, shade or ornamental trees.

Band Trees About Two Weeks Before Insects Appear and Get Best Results

Easily applied with wooden paddle. One pound makes about 10 lineal feet of band. One application stays sticky 3 months and longer—outlasting 10 to 20 times any other substance. Remains effective rain or shine. Won't soften—won't run or melt, yet always elastic, expanding with growth of tree. No mixing, simply open can and use. Will not injure trees.

For Tree Surgery

Tree Tanglefoot is superior to anything on the market—it is the best application after pruning or trimming. It will water-proof the crotch of a tree or a cavity or wound in a tree, when nothing else will do it.

Sold by All First-Class Seed Dealers

1-lb. cans 30c; 3-lb. cans 85c; 10-lb. cans \$2.65; 20-lb. cans \$4.80, and 25-lb. wooden pails \$5.95.

Write today for illustrated booklet on Leaf-eating Insects. Mailed free.

THE O. & W. THUM COMPANY

113 Straight Ave. Grand Rapids, Mich.
Manufacturers of Tanglefoot Fly Paper and Tree Tanglefoot (38)

prevent him from slashing the market with goods in his possession without the consent of the consignors.—Wenatchee Daily World.

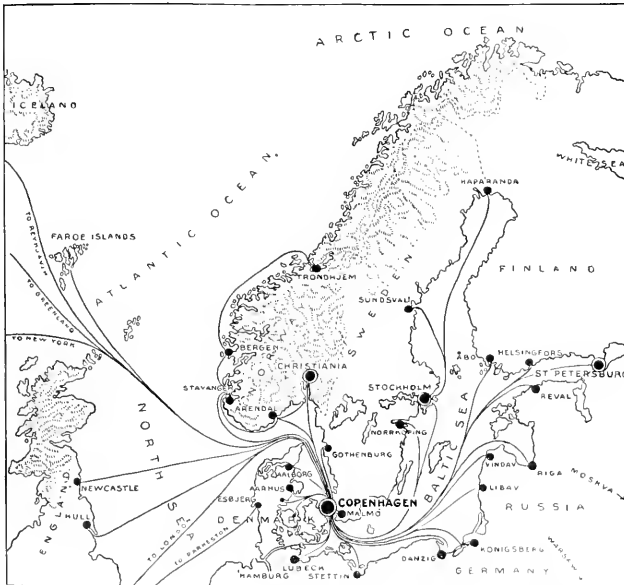
Future of Fruit Industry

In answer to the query: "What of the future of the fruit industry," the Northwest Fruit Exchange replies: "To the Exchange the answer seems very clear. The unprofitable season of 1912 left growers shocked and confused. Panaceas were sought and promised. The Exchange, through various of its officers speaking publicly from platforms in the spring of 1913, warned growers most emphatically that there would be other seasons in the future like 1912, or even worse, regardless of what might be done to prevent them. This prediction was not intended in any sense to discourage organization, for the Exchange has proven by its works that it believes in organization perhaps more earnestly and more effectively than any other exponent in the Northwest. It merely wanted to warn the grower against "cure alls," and do what it might to teach them how to face their problem intelligently and calmly. Its prediction has been realized sooner than even it anticipated, and so it may not be improper for the Exchange to state its definite opinion again, for in it, the Exchange believes, can be found large room for encouragement and sound optimism.

"The business of growing and selling fruit in the Northwest is one which cannot be figured in short terms, but which by the very nature of it must be figured in terms of five to ten years. Figured in that way, we believe that it will prove profitable; first, to those districts which are practically adapted for the production of fruit efficiently; second, to those individuals in the above districts who are able to manage the business of production efficiently, and who make common-sense arrangements for the marketing of their produce. There will recur with more or less frequency years like 1912 and 1914, when the problem will be rather how to minimize losses than to make profits. There will also occur, interspersed between the bad years, profitable seasons in which the profits accruing to efficient producers will be sufficiently large to afford those producers a satisfactory average profit for the entire term, averaging lean years and fat years together.—Exchange.

The State College at Pullman, Wash., will hold farmers' and housekeepers' week beginning February 8. On January 4 its winter six weeks' short courses commence. The farmers of Washington are finding out how valuable these courses are and the attendance is increasing from year to year. The instruction is so valuable and the information so useful that no fruit grower or farmer who can possibly make arrangements to attend some of them should fail to grasp the opportunity.

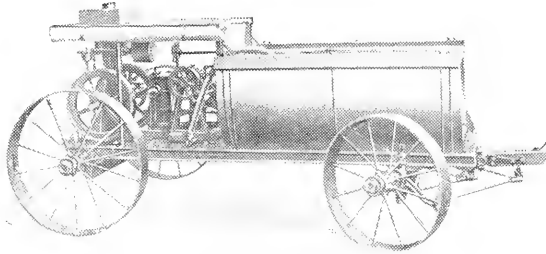
Scandinavia and the Baltic Market



We have a good outlet in the markets shown on above map. We handle apples only on a consignment basis. All consignments have our personal attention. Have you anything to offer? Do not fail to write or cable us.

ERNST C. LOHSE & CO.S EFT., Copenhagen
Cable Address: ERNST LOHSE **Fruit and Produce Agents**

**In A
Class
by
Itself**



**There is
no Power
Sprayer
to be
compared
with it**

THE HARDIE HILLSIDE TRIPLEX

Lower prices for orchard products bring home to every fruit raiser the question of production cost.

The cost of spraying equipment, the value you receive for your money, its results, cost of operation and upkeep, are receiving closer attention than ever before.

With our sales this year far exceeding our expectations, we are strongly impressed that the Hardie Idea of always and continually giving the most value and service to its customers is the cause.

Our interests are mutual. You are striving to lower your production cost. We are furnishing you the equipment with which to do it.

The various sizes and types of power machines in our line enable you to select the power sprayer best suited to your individual requirements.

Throughout the construction of all we use high grade material and sound, proven design.

The brief description below gives you a slight idea of the completeness and quality we furnish.

ENGINE—Water cooled, four cycle, ample power. Ability to run on sidehills with equal ease as on level ground. Ignition—gear-driven magneto, multiple cell battery or ordinary dry cells.

TANK AND PLATFORM—Pressed high carbon steel platform with choice of size of tank. Fully cabbed with curtains.

EQUIPMENT—Your choice in hose lengths, rods, etc., all of guaranteed quality.

SERVICE—The best in the Northwest. Large stocks of machines and parts in all fruit centers. No delays.

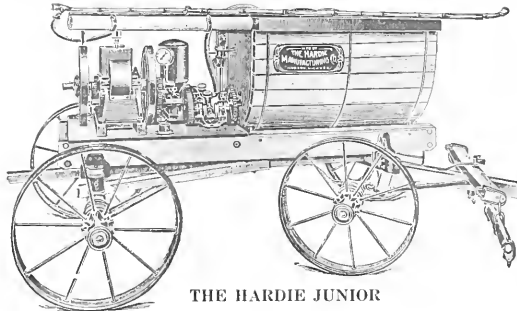
PUMP—Triplex, Duplex, Hardie Junior types. Sizes to suit your requirements. Brass plungers and plunger tubes. Doing away with all excess friction and not affected by spraying chemicals, heat or cold. Valves—Bell metal ball valves with heavy, long-lived seats. Pressure regulator—The most reliable regulator, giving you absolute control of the pressure at all times. No load on pump and engine when nozzles are not in use.

PRICES—The most spray pump value for your money, and a range of prices within the reach of all.

Over seven thousand fruit growers now own Hardie Power Sprayers. Reduced spraying costs. Increase your production. To do this

**For the
small
grower**

**A two-lead
of hose
machine**



THE HARDIE JUNIOR

**Price
\$150.00
and
upwards
according to
equipment**

You need our catalog—Write for it today.

49 North Front Street

PORTLAND, OREGON

The World — Our Orchard

STEINHARDT & KELLY

101 PARK PLACE
NEW YORK

Unquestionably the most
important factors in
the fruit industry
of the
United States

Our Market — The World

BETTER FRUIT

VOLUME IX

APRIL, 1915

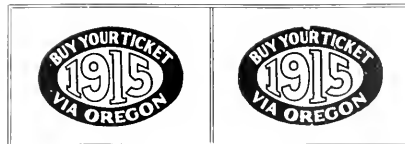
NUMBER 10

THIS EDITION contains interesting personal sketches of each member of the Executive Committee and Board of Control, with illustrations of each and other interesting information about the fruit growers, plan for controlling the marketing agencies operating in the four Northwestern States—Oregon, Washington, Idaho and Montana—with the usual number of timely articles on spraying, advertising, intercropping and other subjects for bettering the condition of the fruit grower.



THE EXECUTIVE COMMITTEE OF THE FRUIT GROWERS' COUNCIL FOR CONTROLLING THE MARKETING CONCERNS IN THE FOUR NORTHWESTERN STATES, OREGON, WASHINGTON, IDAHO AND MONTANA.

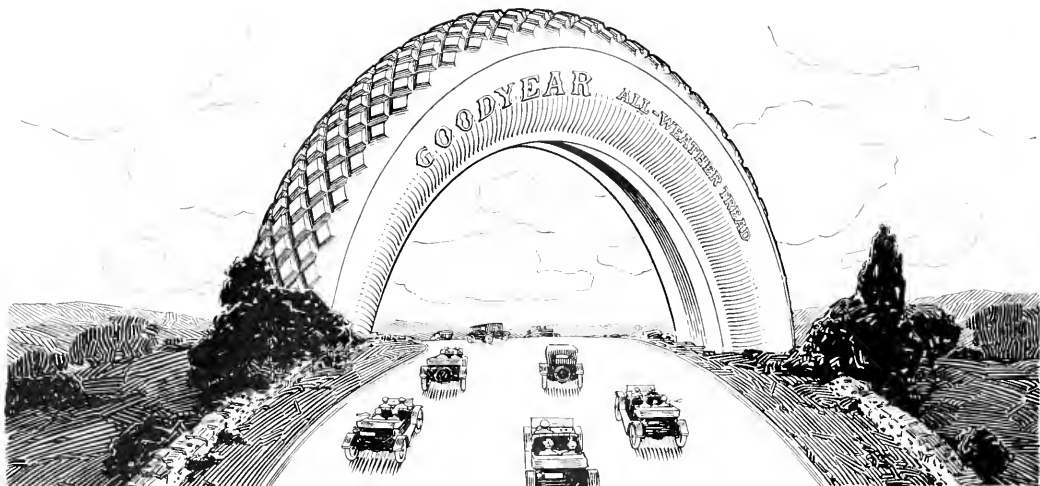
W. H. Paulhamus, Puyallup, Washington, President and Manager, the big man who has tackled a big job, and his assistants: On the left, C. T. Haskell, fruit grower and secretary High Line Irrigation Company, Wenatchee, Washington. On the right, Truman Butler, banker, Hood River.



BETTER FRUIT PUBLISHING COMPANY, PUBLISHERS, HOOD RIVER, OREGON

Subscription \$1.00 per Year in the United States; Canada and Foreign, Including Postage, \$1.50.

Single Copy 10 Cents



The Road to Tire Content

Join the 400,000 Who Take It

This spring we urge you, for your own sake, to find out the advantage of Goodyear Fortified Tires.

You know they must have an advantage. They have long outsold any other tire. Last year about one-fourth of all tires sold for pleasure cars were Goodyears. Yet we have a hundred rivals.

You know that a tire which dominates like that must be a super-tire.

In five ways Goodyear Fortified Tires conspicuously excel. On these five features — each exclusive to Goodyear — we spend millions of dollars. And we do it for your protection.

One way combats rim-enting. It has probably saved the ruin of a million tires.

One saves needless blowouts. That one feature — our "On-Air" cure — costs us \$450,000 yearly.

One, by a patent method, combats loose treads. One makes the tire secure. And one is our All-Weather tread. That is tough and double-thick, to resist both wear and puncture. And the sharp-edged grips give the utmost in anti-skids.

All these trouble-saving features belong to Goodyear tires alone.

Big Price Reductions

On February 1st we reduced our prices for the third time in two years. The three reductions total 45 per cent. Now our mammoth output enables us to give you the greatest value ever known in tires.

Goodyears are handy to you. We have stocks everywhere. And any dealer who hasn't stock can get them for you quickly.

This season get their protection. Get their savings in trouble and upkeep. Know what tire contentment is.

They can't avoid all mishaps, but they will save you many a trouble, many a dollar. They are doing that now for some 400,000 motorists. Let them do it for you.

After one season with Goodyears, you will never go back to a skimped tire. And never to a tire that lacks Goodyear protections. Be fair to yourself and prove that.



GOOD YEAR

AKRON, OHIO

Fortified Tires

Fortified Against	}	<ul style="list-style-type: none"> Rim-Cuts — by our No-Rim-Cut feature. Blowouts — by our "On-Air" cure. Loose Treads — by many rubber rivets. Insecurity — by 120 braided piano wires. Punctures and Skidding — by our double-thick All-Weather tread.
-------------------	---	---

THE GOODYEAR TIRE & RUBBER COMPANY, AKRON, OHIO

Makers of Goodyear "Tire Saver" Accessories; also Goodyear "Wing" Carriage Tires and Other Types

The Paris Fair

Hood River's Largest and Best Store

RETAILERS OF

EVERYTHING TO WEAR

AGENTS FOR

HAMILTON & BROWN AND
THE BROWN SHOES

HART, SCHIAFFNER & MARX
CLOTHES

MANHATTAN SHIRTS

JOHN B. STETSON HATS

NEMO CORSETS

Strictly Cash—One Price to All

Things We Are Agents For

Knox Hats

Alfred Benjamin & Co.'s Clothing

Dr. Jaeger Underwear

Dr. Deimel Linen Mesh Underwear

Dent's and Fownes' Gloves

Buffum & Pendleton

311 Morrison Street

PORTLAND, OREGON

Store Your Apples in Spokane

The Natural Storage Center

Take advantage of storage in transit rate and the better market later. Write us for our dry and cold storage rate and information.

**Ryan & Newton
Company**

SPOKANE, WASHINGTON

IF YOU WANT TO MARKET
YOUR

FRUIT

RIGHT

ALWAYS SHIP TO

W. B. Glafke Co.

WHOLESALE FRUITS
AND PRODUCE

108-110 Front Street
PORTLAND, OREGON

W. H. DRYER

W. W. BOLLAM

DRYER, BOLLAM & CO.

GENERAL
COMMISSION MERCHANTS

128 FRONT STREET

PHONES: MAIN 2348
A 2348

PORTLAND, OREGON

LEVY & SPIEGL

WHOLESALE

FRUITS AND PRODUCE
Commission Merchants

SOLICIT YOUR CONSIGNMENTS

Top Prices and Prompt Returns
PORTLAND, OREGON

STORAGE

Ship your Furniture
to us to be stored
until you are located

TRANSFER & LIVERY CO.
Hood River, Oregon

The Old Reliable

BELL & CO.

Incorporated

WHOLESALE

Fruits and Produce

112-114 Front Street
PORTLAND, OREGON

Richey & Gilbert Co.

H. M. GILBERT, *President and Manager*

Growers and Shippers of

YAKIMA VALLEY FRUITS
AND PRODUCE

Specialties: Apples, Peaches,
Pears and Cantaloupes

TOPPENISH, WASHINGTON

Established 1893

W.P. KRANER & CO.

Importers and Tailors

2nd Floor Couch Bldg.

109 Fourth Street

Portland, Ore.

Geo. E. Kramer

C. W. Stose

Mark Levy & Co.

COMMISSION
MERCHANTS

Wholesale Fruits

121-123 FRONT AND
200 WASHINGTON ST.

PORTLAND, OREGON

Orchardist Supply House

Franz Hardware Co.

HOOD RIVER, OREGON

W. F. LARAWAY

DOCTOR OF OPHTHALMOLOGY

EYES TESTED  LENSES GROUND

Over 30 Years' Experience

Telescopes, Field Glass
Magnifiers to examine scale

Hood River
Oregon

and

Glenwood
Iowa

How to Use the **KIMBALL CULTIVATOR**

to keep your Orchard
in Perfect Condition



THE first thing in the spring, as soon as the ground is dry enough, it should be well plowed or disced both ways, or diagonally if the trees are planted in that manner.

The rest of the season nothing is needed but the **KIMBALL**, which should be run over the ground at least twice each month during the summer, or as soon as the ground is dry enough after a hard rain, or after irrigation.

This will break up the crust and stop evaporation, for when the soil bakes and opens in cracks is the time of the greatest evaporation.

More cultivation and less irrigation will produce better fruit, and it will keep longer than where too much water is used.

It is now for fruit growers to be thinking of how they can keep their orchards in good shape at the least possible expense.

For this work there is nothing that will equal the Kimball Cultivator.

While we know the fruit market is bad, we also know it will not always be in this condition, and the grower who neglects to cultivate his orchard at this time will lose the years of labor he has already put in on it, for an orchard that is not cultivated is soon a total loss.

Therefore get a Kimball and continue the good work.

MANUFACTURED BY

W. A. JOHNSTON, The Dalles, Oregon

Dow Arsenate of Lead

is more in demand this season than ever before. Fruit growers have learned that this material is finer, smoother, more uniform in test and texture and consequently gives the best results. It is easily mixed with water, remains well in suspension and sticks where it is sprayed.

Dow Arsenate of Lead is used not only in the United States, but in foreign fruit growing countries, and we believe our production and manufacturing facilities the largest in the country. The State of Massachusetts has used it for two years past and we have their contract for 1915. Their requirements are close to One and One-Half Million pounds per annum.

Insist on the Dow Brand. It is different.

The Dow Chemical Company

MIDLAND, MICHIGAN

BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

Members of Executive Committee and Board of Control

MR. JOHN A. WESTERLUND, Medford, Oregon, Member of the Board of Control of Ten, Representing the Southern Oregon District in the Fruit Growers' Council of 107.

John A. Westerlund of Medford, Oregon, was born in Henry County, Illinois, June 10, 1865, on the farm of his father, Peter Westerlund, one of the early settlers of Henry County and today one of the leading bankers and farmers of that vicinity. Mr. Westerlund is 49 years of age.

Mr. Westerlund received his early training on the farm of his father, where he remained until he was twenty-two years of age. He attended high school at Orion, Illinois, and being desirous of a higher education he entered Bethany College at Lindsborg, Kansas, where he attended for six years, graduating in the year 1891 in the classical and scientific courses with the degree of A. B., and was a member of the first class graduated from this institution. In the same year Mr. Westerlund moved to Chicago, where he engaged in the real estate, insurance and colonization business, identifying himself with the immigration and colonization business, especially along the lines of the Union Pacific and Southern Pacific Railroads. He has been closely identified with agricultural and horticultural pursuits for the past twenty years. In 1902 and 1903 he was operating extensively as special traveling immigration agent for the Union Pacific and Southern Pacific Railroads, during which years over four thousand homeseekers were brought to Oregon, Washington and Idaho by Mr. Westerlund. As an appreciation of his splendid work in bringing settlers to the West, Governor Chamberlain of Oregon appointed him State Commissioner of Immigration.

Ten years ago Mr. Westerlund became extensively interested in fruit growing near Medford, Oregon, where he now resides, and proceeded by co-operation to develop over one thousand acres in one single block into one enormous fruit orchard of apples, pears, peaches, apricots and other fruits. Success was met with from the start and Mr. Westerlund is today at the head of two of the leading fruit-growing concerns in the Rogue River Valley—the Monitor and Medford Orchard Companies, known commercially as the Westerlund Orchards. These orchards promise to become excellent producers and have their own packing and shipping warehouses on the line of the Southern Pacific Railroad, where the fruit from the orchards is brought down, the orchards being located from two to

four miles from the growing City of Medford.

Mr. Westerlund has twice been honored by the people of his county, having been elected a member of the Legislature in 1911 and 1913. Here he devoted much time and energy and was successful in securing better horticultural laws for the fruitgrowers of the State of Oregon.

Mr. Westerlund, while not a frequent talker, before the convention at Tacoma was regarded as a successful business man, having accomplished achievements that are worthy of credit. His

Features of this Issue

EXECUTIVE COMMITTEE AND THE BOARD OF CONTROL, FRUIT GROWERS' COUNCIL OF 107

SPRAYING ECONOMY AND INSECTICIDE EFFICIENCY IMPORTANT

BLACK LEAF "40" SPRAYING TO CONTROL APPLE APHIS

THE TRUTH WELL TOLD—WILL HELP SOLVE THE APPLE MARKET PROBLEM

ORGANIZATION OF CENTRAL SELLING AGENCY

APPEAL FOR CO-OPERATION

ability as a manager is shown by the large orchard of which he is the manager in Southern Oregon.

As Southern Oregon sent but one delegate to Tacoma and as Mr. Westerlund was the delegate selected, it seems reasonable to assume that he has a standing in his own community that is worth having, and which is further indicated by the fact that he was chosen representative to the State Legislature, having received a large vote. It is believed that Mr. Westerlund will render services to the fruitgrowers of the Northwest in his new position which will be of great value, because he has had a large experience in dealing with big propositions.

MR. C. E. CHASE, Brewster, Washington, Member of the Board of Control of Ten, Representing Wenatchee District in the Fruit Growers' Council of 107.

Mr. Chase was born at Amboy, Nebraska, March 21, 1886, and is nearly twenty-nine years of age. He came to the Yakima Valley in 1892, where he attended the public schools, including the North Yakima High School, after-

ward going to Billings, Montana, from which high school he graduated in 1905. He took a two years' course in civil engineering at the Washington State College, Pullman, Washington, from 1906 to 1908. Since that time he has been variously located in Billings, Montana, and in the Wenatchee and Okanogan Valleys, engaged in engineering construction work along canals, mines, etc.

Mr. Chase has two bearing orchards in the Okanogan Valley and at the present time is engineer and superintendent of a company which owns and irrigates about 1600 acres of orchard near Brewster, Washington. He is also secretary and member of the board of directors of the Brewster District Unit of the Wenatchee-North Central Washington Growers' League, and secretary and member of the board of control of the Wenatchee-North Central Washington Growers' League.

Most of Mr. Chase's professional experience has been connected with orchards in which the following account furnishes quite a complete record:

Construction work, Wenatchee Canal Co., Wenatchee, Washington; construction work in mines, Federal Mining Co., Mullan, Idaho; engineer in charge for two years of the Wenatchee Canal Co., East Wenatchee Land Co. and Icicle Canal Co., Wenatchee Washington. During the last-mentioned period of two years he had active charge of the construction of five tunnels, ranging from 700 to 3500 feet in length, being 7 and 8 feet wide on the bottom and 7 feet in height; three continuous wood stave pipe siphons 66 and 72 inches in diameter and from 500 to 700 feet in length, across canyons which had formerly been crossed by high trestles; the rebuilding of several flumes, totaling over two miles in length, which were from 6 to 8 feet wide, 5 feet high; the surveying and platting of lands for the East Wenatchee Land Co.; the survey of the Icicle Canal Co.'s canal, which is over 30 miles in length. This was partially constructed under Mr. Chase's supervision and charge, the canal being mostly flumes and dirt ditch with three long siphons, one crossing the Wenatchee River.

In his present capacity as superintendent and engineer for the Okanogan Power & Irrigation Co., Mr. Chase has had the laying out and supervision of construction of several large pumping plants for different orchard companies near Brewster and Bridgeport, Washington.

Mr. Chase is a member of the Pacific Northwest Society of Engineers.



THE BOARD OF CONTROL.

Top row, left to right: E. C. S. Brainerd, Payette, Idaho; A. D. Moe, Hood River, Oregon; A. W. Simmons, Freewater, Oregon; W. M. Sackett, Hamilton, Montana; J. A. Westerlund, Medford, Oregon; Harry Jones, Wapato, Washington. *Front row, extreme left:* John F. Davis, Spokane, Washington. *Extreme right:* E. C. Chase, Brewster, Washington. *Front row (Executive Committee), second from left:* C. T. Haskell, Wenatchee, Washington; W. H. Paulhanus, President and Manager, Puyallup, Washington; Truman Butler, Hood River, Oregon.

Mr. Chase, while still a young man, has made a record for himself that any man can justly feel proud of. Those who met him at the Tacoma convention felt very much impressed with his sincerity and ability and feel, without exception, that he will render valuable services in his position on the board of control.

While not so well acquainted with the fruitgrowers at large as the other members of the board, he has an intimate acquaintance with the fruitgrowers of his own district, who showed their confidence in his ability and judgment by placing him as the representative of the Wenatchee district on the Board of Control of Ten.

MR. A. W. SIMMONS, Freewater, Oregon, Member of the Board of Control of Ten, Representing Walla Walla District in the Fruit Growers' Council of 107.

Mr. A. W. Simmons was born in Cass County, Nebraska, February 1, 1856, and is now 59 years of age. He attended the public schools in Nebraska and afterward the State University of Nebraska.

During his early life he was a school teacher, afterward going into the mercantile business, and still later on engaging for twenty years in the drug business in Dorchester, Nebraska. In

the latter place he was for eighteen years a member of the Board of Education, and for a number of years was mayor of that city.

In 1906 Mr. Simmons retired from the drug business and moved to Walla Walla, where he located on a well-improved tract of ten acres set to fruit, which is situated on the interurban car line between Walla Walla, Washington, and Milton, Oregon. In 1910 he received first prize for the best ten boxes of Arkansas Black at the National Apple Show at Spokane, and at this show he also had twenty-seven boxes of apples on exhibit in the Walla Walla Valley district display which also won first prize.

For two years Mr. Simmons was vice-president of the Milton Fruit Growers' Association and is now secretary and treasurer of the State Line Irrigation Co. For three years he was chairman of the Fruitvale School Board.

Mr. Simmons, while not a frequent speaker on the floor, is generally regarded by the fruitgrowers who know him as a man of good ability; a man who will do more thinking than talking; a man who at all times will entertain good, sound, sensible ideas for the benefit of the industry; a man who will render efficient service in his new position which he has assumed.

MR. E. C. S. BRAINARD, Payette, Idaho, Member of the Board of Control of Ten, Representing Idaho District in the Fruit Growers' Council of 107.

Mr. Brainard was born at Onargie, Illinois, October 13, 1863, and is now 51 years of age. His boyhood days were spent in various towns in Iowa, principally at Cedar Rapids, where he attended the public schools, taking up telegraphy under the direction of his older brother. At the age of eleven, it is stated, he became a good operator, being among the first telegraphers who could read by sound; most of the work at that time, particularly in the West and Middle West, being done by the old paper machines. At sixteen years of age he was station agent at Clarks-ville, Iowa, a town of about 2500 inhabitants. Since that time he has filled numerous positions with the railroads in the Middle West and Northern States in the station department and operating department. His last position in that line of work was chief clerk for the Rio Grande Railroad at Ogden, Utah, which position he resigned in 1902 to engage in dairying and fruit growing.

In 1904 Mr. Brainard moved to the Payette Valley and since that time has been connected with various irrigation projects, land development and promotion projects, at one time being overseer of seven ranches of forty acres

each, located between Payette and New Plymouth, Idaho.

At the present time Mr. Brainard is the owner of and gives his time and attention to the active management of 200 acres of standard varieties of apples, mostly Jonathans, Rome Beauties, Winesaps and Arkansas Blacks. This orchard is situated near Payette, Idaho.

Mr. Brainard occupies the following positions: Manager of the Fruitland Townsite Co. properties and various ranches; director and member of the loan committee of the First National Bank of Payette, Idaho; secretary of the Payette Valley Commercial Club of Payette; secretary of the Idaho Land & Improvement Co. and various other corporations; for eight years president of the Conference Board of Home Missions and Church Extension, Idaho Conference, Methodist Episcopal Church, and trustee of Gooding College of Gooding, Idaho, a Methodist educational institution which is now well under way and will probably open for students in September, 1915.

Mr. Brainard is what is called a "self-made man," having obtained his education in the school of experience and hard knocks.

Mr. Brainard was one of the active spirits at the Tacoma convention, having addressed that body on many occasions in a clear, forceful way which impressed the audience with the idea that he is a good, clear thinker and a sound reasoner. His success as a business man in his different lines of endeavor, and the positions he has held and holds are evidence of the esteem in which he is held in the communities where he has lived. Therefore it is safe to say that he will render valuable services as a member of the Board of Control.

MR. W. M. SACKETT, Corvallis, Montana, Member of the Board of Control of Ten, Representing the Montana District in the Growers' Council of 107.

Mr. Sackett was born at Meadville, Pennsylvania, August 21, 1869, and is now 45 years of age. After attending the public schools at Meadville he attended Allegheny College, Meadville, Pennsylvania, from which college he graduated in 1888 with the degree of civil engineer. Mr. Sackett followed his profession, being employed by the United States War Department until 1890. After retiring from this service he entered the Massachusetts Institute of Technology as a junior and graduated as an electrical engineer with the class of 1892. After graduation he took a position in the construction department of the World's Fair at Chicago during the building of that exposition, afterward associating himself with the engineering department of the Chicago Telephone Company.

In 1909 Mr. Sackett engaged in orcharding in the Bitter Root Valley, and since that time has devoted all of his attention to the orchard industry. He owns forty acres of orchard and has

taken active part and shows much interest in the co-operation of fruitgrowers. During the last few years Mr. Sackett has been actively engaged in constructive work along co-operative lines for the fruitgrowers, being one of the trustees of the North Pacific Fruit Distributors as well as one of the organizers of that association. He has been largely interested in organizing the fruitgrowers in the Bitter Root Valley and at the present time is secretary of the Hamilton Fruit Growers' Association, a position without salary.

Mr. Sackett has shown wonderful activity in co-operative work and has been an earnest supporter of every endeavor along this line in the Northwest, having been active in organization work in Montana, in the formation of the Distributors and also in the splendid work which has been done by the by-product committee, of which he is a member. He was one of the active workers in the Tacoma convention and commanded the confidence and esteem of those who were present for his earnestness and ability.

MR. JOHN F. DAVIES, Opportunity, Washington, Member of the Board of Control of Ten, Representing the Spokane District in the Fruit Growers' Council of 107.

Mr. Davies is a fruitgrower and interested in the orchard industry of the Northwest, therefore considering the fruitgrowers' problems as his own problems. By profession he is an attorney at law, having practiced that profession for some time. His practice during the last few years has been somewhat specialized, and by reason of his business connections he maintains offices in Butte, Montana, and Spokane, Washington, at 612 Columbia Building. In Spokane he is connected with the Interstate Utilities Company.

Mr. Davies' orchard and home is at Opportunity, Washington.

Mr. Davies is representative of the Spokane district on the Board of Control of Ten and chairman of that body.

Mr. Davies was one of the committee who drew up the Tacoma plan, and it may be said with sincerity and due credit that no man impressed the delegates at Tacoma more earnestly than Mr. Davies. He has a well-trained mind, is a clear reasoner and arrives at logical conclusions, presenting his ideas in clean-cut words so that they can be thoroughly understood by everyone who hears them. He is honored with the chairmanship of the Board of Control, which is a recognition of his force and ability.

MR. C. T. HASKELL, Wenatchee, Washington, Member of the Executive Committee of Three of the Fruit Growers' Council of 107.

Mr. C. T. Haskell was born in Richland County, South Carolina, April 25, 1878, and is now 37 years of age.

In his early life, while a boy at the age of 13, from 1891 to 1899, he was employed in a bank, occupying different positions as he was advanced in the

work. During this time he was studying law and in 1899 completed a law course in the University of South Carolina. From 1899 to 1901 Mr. Haskell took a special course in law at the Harvard Law School, and for the next five years practiced law in South Carolina.

From 1905 to 1910 Mr. Haskell was engaged in civil engineering work, also in irrigation, railway and city work. In 1910 he came to Wenatchee Valley and engaged in fruit growing, being at the present time owner of sixteen acres of apple orchard near Wenatchee.

Mr. Haskell holds the position of chairman of the Board of Control of Wenatchee-North Central Washington Growers' League and is director and secretary of the Wenatchee Reclamation District, which is an irrigation district.

Mr. Haskell was one of the committee who drew up the articles of the Tacoma plan, and in the committee his views were in the minority, but he it said to his credit, which is a recognition of his good judgment, that his views in general were finally included in the plan by the vote of the convention. Mr. Haskell impressed himself upon all the fruitgrowers present as being a very able man, a very clear thinker, a man of good judgment and very conservative. His own district has such confidence in him that they considered him as one of the coming young men who will become great in his community.

MR. HARRY JONES, Wapato, Washington, Member of the Board of Control of Ten, Representing the Yakima District in the Fruit Growers' Council of 107.

Mr. Harry Jones was born in Jackson County, Wisconsin, on January 28, 1852, and is now 63 years of age. His father was a farmer in Wisconsin, Mr. Jones helping his father on the farm during the summer and attending the country school during the winter.

In the fall of 1872 Mr. Jones came west, spending three years in the Mountain and Pacific Coast States, afterward returning to Wisconsin. During 1878 and 1879 he was under-sheriff of Saint Croix County, Wisconsin. In January, 1880, he entered the employ of the McCormick Harvesting Machine Co., remaining with it for several years, during which time he was manager of general agencies located at Ft. Dodge, Iowa, Sioux Falls, South Dakota, and Sedalia, Missouri. He resigned his position with this firm and became cashier of the First National Bank of Ft. Dodge, Iowa, in January, 1891, and the following year moved to Albert Lea, Minnesota, where he became the president of the First National Bank of Albert Lea.

In the fall of 1905 Mr. Jones moved to North Yakima and in the spring of 1906 located at Wapato, Washington, where, with Alex E. McCredy and others, he helped to organize the Wapato State Bank, of which he be-

Spraying Economy and Insecticide Efficiency Important

By T. H. Parks, Field Entomologist University of Idaho, Moscow.

BY the average commercial fruit-grower, insecticides and their application are understood to mean but a necessary unit of expense in his business, that is taken into consideration in computing the cost of producing the finished product. This is comparable to the operating expense needed in placing any finished product on the market by the manufacturer and which is figured in the selling price necessary to be secured to offset all such expenses which go to make up the cost. Since the fruitgrower is not yet able to control the market price of his finished product to cover all cost of production plus a compensation for his services and a reasonable profit, he must look the more toward lowering his cost of production by applying better business methods to his farm operations.

The time is past when the only aim is to increase the supply of fruit to shove upon an already glutted market, and the grower is beginning to look to the production of a superior quality of fruit at as small cost as possible in order to secure a reasonable interest on his capital invested. This means the application of business principles to the spraying as well as other production operations and reducing the expense of such spraying as much as possible without impairing their efficiency and usefulness. It does not mean that he need spray only once for codling moth where he has been spraying two or three times before, or spray for scale only every other year instead of yearly, but it must be remembered that cost of production includes also the costly result of hurried and careless work as well as the actual outlay of expense for labor and spray material, and it is this side of the production expense that presents the most room for improvement.

The fruitgrower cannot be blamed for grasping at information emanating from reliable sources and which promises to reduce the amount of work necessary to produce a crop. His aim is to simplify his spraying operations as much as possible without impairing their efficiency. He is especially apt to make fewer codling-moth sprays, and do the spraying less thoroughly during a year when the crop is light than when it is heavy, because he does not consider the crop worth so much. The result is usually that the years of wormiest fruit are years of light crop when the worms are forced to concentrate on the fruit that is present, and the grower often sees that he would have had a fair crop after all if he had given the attention to the spray that he had given in former years. This has been brought to my attention in a number of cases, and instead of economizing on his sprays he has actually been extravagant, failing to save the fruit that escapes the frost. The increased supply of codling-moth larvae

will make the battle all the more difficult next year. The degree of success in spraying for codling moth varies with the relative abundance of the insects in relation to the fruit crop. This relative abundance will increase directly as the supply of fruit decreases. Bearing in mind that reducing the cost of spraying also includes the prevention of loss from careless work, how else can the grower reduce the cost of his spray applications?

Co-operative Buying of Spray Material.—The first cost of the spray material is by no means the least, and co-operative buying, whenever it can be done, is to be recommended. In case of lime-sulphur, where time and facilities are at hand, it is often more economical to make this on the ranch. The individual grower will have to be the judge of the economy of this.

Do not use a stronger strength of spray than recommended. This is often done, especially with arsenate of lead used as a codling-moth spray. Many growers have the impression that doubling the amount of spray material called for by the directions will give better results. Consequently they use 5 pounds of arsenate of lead to 50 gallons of water instead of 2 or 2½ pounds, in the hope of getting better results and possibly with fewer operations. The less successful grower is liable to ascribe the worms to too weak a spray and next year he will double the strength in the hope of getting better results. This phase of the insecticide efficiency has been thoroughly investigated and excellent results have been secured with strengths of 1 pound of arsenate of lead to 50 gallons of water (one-fifth of the above strength), but only with very thorough applications. There is little necessity of the grower using over 2½ pounds of arsenate of lead to each 50 gallons of water, as experiments and practical demonstrations have shown this to be equally as efficient as stronger sprays and the possible danger of injury from arsenic residue about the roots of the tree is thereby much lessened.

Thoroughness of Application.—More attention should be paid to thoroughness of application, especially of the first or "calyx" spray for the codling moth. This cannot be overemphasized, and it is here that the best results can be secured with a little extra attention, especially if it is done at the proper time. It should be remembered that the calyx cup well filled in May is a death-trap to larvae trying to enter that calyx in August and September. The work of thoroughness here includes also the use of a high-pressure power outfit, a tower on the top of the outfit to enable the operator to reach the topmost branches, and the use of a driving spray from angle nozzles and hose fitted with extension rods at least eight feet long. None of these can be omitted without affecting the thoroughness of the work,

and along with the outfit should go the owner of the orchard or the highest-paid man on the ranch. It is no exaggeration to say that 90 per cent of the men handling spray rods do not know how to spray a tree, and usually the highest-priced man on the place is the cheapest in the end. Poor spraying is more expensive than a thorough job, even though the time required may be double, provided the orchard is not too large to be covered by the outfit in the proper time.

Use of Combination Sprays.—Combination sprays have a place and are coming to be more and more used. By the combination of an insecticide and a fungicide spray, or a contact and arsenical spray, the cost of keeping the orchard clean is greatly reduced over the expense of separate applications. This is especially true with reference to the codling moth and the apple scab in North Idaho, and possibly will be used more frequently for the codling moth and apple mildew in South Idaho. The combination sprays which are designed to reach codling moth and green aphids are to be encouraged and can be used to good advantage, especially during the early applications of spray for the codling moth. This saves the expense of making a separate spray for the aphids and the only extra cost is the cost of materials. The following list contains most of the common sprays that can be safely used in combination for both insects and fungus diseases. Some of these combinations are already being used successfully in Southern Idaho, and the cost of separate applications thus reduced:

Arsenate of lead (neutral)	and Lime-sulphur (summer strength)
	Tobacco and soap
	"Black Leaf 40"
	Bordeaux mixture
	Atomic sulphur
	Iron sulphide
Arsenate of zinc	and Iron sulphide
	Atomic sulphur
	Lime
Lime-sulphur	and "Black Leaf 40"
	Arsenate of lead (neutral)
Kerosene emulsion	and Sulphur (powdered, or lime-sulphur)

In passing I may state that no combination spray used later in the season can take the place of the lime-sulphur spray applied early in the spring for San Jose scale, and the one recommending using arsenate of lead and lime-sulphur (summer strength) is recommended for its fungicidal value rather than its effectiveness against scale, though it would have some value against scales which have escaped the action of the dormant lime-sulphur spray. Every orchard is entitled to the annual "house cleaning" given by the application of lime-sulphur spray, preferably when the buds are swelling. A great deal has been said about the number of sprays, but I do not think that we can afford to economize here. Few successful growers feel that they can

Continued on page 37

Black Leaf "40" Spraying to Control Apple Aphis

[From Bulletin No. 1, Published by The Kentucky Tobacco Product Company, Louisville, Ky.]

PLANT lice are among the most annoying and expensive pests of agricultural crops that the farmer must combat. And yet these small, soft-bodied insects are easily destroyed and effectively controlled. A few general facts, a few simple directions, and the matter of aphid control loses most of its uncertain and perplexing features and becomes a regular routine part of orchard management.

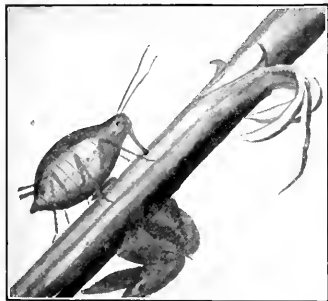
Throughout the growing season these plant lice in enormous numbers drain the vitality of the plants attacked, and if not checked often cause large losses to the grower. A single aphid may bring forth from 50 to as many as 150 young which, in little more than a week, are themselves ready to produce young. At the approach of cold weather the females (the woolly aphid excepted) lay eggs, in which form the plant lice pass the winter. The woolly aphid passes the winter in form of young lice on twigs, branches and trunk, and as young and old lice on the roots. With the hatching of the eggs in the spring at the time the buds begin to grow, the activity of the plant lice begins, and unless steps are taken in time the number of individuals may become so large as to threaten the life of the plant or destroy a large portion of the season's crop. Plant lice are particularly destructive in the spring, though severe outbreaks may occur at any time during the growing season.

The aphid generally prefers the

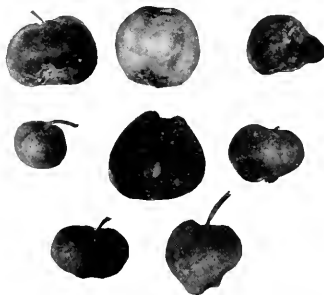
younger, growing twigs and is found most frequently in the denser parts of the tree. Its sharp, slender beak penetrates to the interior of the leaf, blossom, fruit or twig and by this means it sucks the plant juices which constitute its food. As the aphid obtains its food from within the plant, evidently, poisons, which must be swallowed to be effective, such as arsenate of lead, do not bother it in the least. An insecticide that will kill merely by touching the insect must be used.

The aphid causes the following types of injury: Reduces the vitality and checks the growth of the tree; causes leaves to curl, turn brown and drop; reduces the yield of fruit; causes fruit to be misshapen; checks the development of young fruit; causes the well-known "cluster apples"; checks the development of the next year's fruit buds; assists in spreading plant diseases, particularly fire blight; weakens or kills young nursery stock.

A grower with infested trees should spray not only to increase the yield and grade of his own fruit and protect the vitality and growth of his own trees, but also to afford reasonable protection to the trees of his neighbors. Aphids fly or are carried by the wind from one orchard to another. A grower may, then, by neglecting to spray, cause nearby orchards to be infested even though the neighboring growers have sprayed properly. In fact one neglected orchard may be the center of infestation for a whole community.



Showing why a contact spray must be used.



Aphis-injured Apples.



FIGURE 3.—Aphids on opening bud; period for spraying. FIGURE 4.—Apple buds too far advanced for aphid spraying. FIGURE 5.—Aphid in cluster of unopened blossoms; a good time for spraying. FIGURE 6.—From the New York (Geneva) Experiment Station Circular 23

The time of spraying is an important item in the control of aphid. Failures to control aphid may often be traced to the fact that the spray was not applied soon enough. The New York (Geneva) Experiment Station gives the following as the times when the green, also rosy or purple aphid are most vulnerable: "When the aphids are appearing on the green tips of the buds and when the leaves have unfolded but have not been curled by the lice, which is usually just before or immediately after blossoming. 1. Spraying for the newly-hatched lice: Especial pains should be taken to destroy the pest at this stage, as thorough work greatly reduces the subsequent numbers of the lice and may simplify later spraying operations. The best means of killing the newly-hatched lice is a treatment during a green and while the buds are still compact. (Figure 3.) It is important to spray early, for if the treatment is delayed the aphids obtain protection in the fuzzy, unfolded leaves of the opening buds, where they are protected from applications of spray mixtures. 2. Spraying for adults of the first brood and second-brood young: Individuals of these stages are very susceptible to contact sprays. They are usually active upon the trees during the period extending from the appearance of the color in the unopened blossoms (Figure 5) to the dropping of the petals (Figure 6)."

Make the applications as follows: Spray with "Black Leaf 40" 1 to 1066 and soap ($\frac{1}{2}$ pint of "Black Leaf 40" plus 3 to 4 pounds soap to 100 gallons water) when the buds show green. (See Figure 3.) If lime-sulphur is applied for scale when buds shown green, combine "Black Leaf 40" with it instead of making application No. 1. Omit soap. (See Figure 3.) Combine "Black Leaf 40" with scab spray (when blossoms show pink) if treatments 1 or 2 were not given or lice are present. Omit soap. (See Figure 5.) Likewise combine "Black Leaf 40" with the first codling-moth spray (when petals fall) if plant lice are present. Omit soap. However, we strongly recommend treatments 1 or 2 or 3 for best results. (See Figure 6.) Thorough work in spraying at these times may make later applications unnecessary. There is no definite rule for spraying in late summer for aphid. The grower should keep watch and spray whenever the plant lice threaten to become numerous and before the leaves curl.

The formula: Circular No. 23 of the New York (Geneva) Experiment Station states: "The most satisfactory preparation from the standpoint of safety to the buds and effectiveness against the insects is three-fourths of a pint of 'Black Leaf 40' to one hundred gallons of water, to which are added from three to five pounds of dissolved soap." This gives a dilution of one part of "Black Leaf 40" to 1066 parts water. The soap is added as a spreader and in addition serves to soften hard water, which occasionally renders

Continued on page 31

The Truth Well Told—Will Help Solve Apple Problem

By Harrison Atwood, Vice President The H. K. McCann Company, San Francisco.

AN apple a day. Just suppose for a minute that the American people—every one of them—were eating an apple a day. One hundred million people, 365 days—that's thirty-six and a half billion apples—roughly twice the present apple production of the entire country. Add to this the "bulk consumption" of apples for pies, sauce and so forth, and there wouldn't be much worry about overproduction. Of course it is not likely that all the American people are going to take to apple eating over night. But suppose that half of them ate an apple a day—or even half of them ate half an apple a day. That is not an impossibility. Nearly the whole American nation eats some sort of breakfast food every morning. Advertising taught them to. Hundreds of thousands of men now use a safety razor every morning. Advertising taught them to.

Advertising will teach the nation to eat more apples—apples from the Pacific Northwest—and thus solve one of the greatest problems confronting the industry. The centralizing and harmonizing of the work of the Northwest selling agencies, now going on, is of vital importance. So, too, is the plan for developing the by-products end of the business, and the plans for more adequate cold-storage facilities and for the securing of better freight rates to the East, both by rail and water. These things are fundamental. They provide the essential machinery for marketing the Northwest apple. But they do not provide the market.

The market is the people, or, more exactly, it is that portion of the people who want your apples. They cannot want them until they know them, and unfortunately the people as a whole do not know the Northwest apple. Of course thousands do know it—and favorably. They will eat no others. But these thousands are not enough to insure a sufficient market now—certainly not for the future. To market your fruit with the greatest success you need to tell more people about it. You need to teach them, you need to advertise to them. Advertising is nothing more than the "Truth Well Told." It is going to the people and telling them the facts about your apples. And you can be certain people are going to buy more Northwest apples when they really know them.

There are scores of thousands of people in this country who are eating "just apples"—often small, hard, misshapen fruit grown on some neglected tree. Scores of thousands are eating what you would call "cooking apples," or even poorer. Suppose you were to tell these people the story of the Northwest apple—tell them how carefully the hole is dug or dynamited and the tree set out, tell them how the young tree is nursed along to maturity, how the soil is cultivated, how the trees are sprayed, how the ripe fruit is carefully picked by hand, sorted and each apple

wrapped separately in tissue before it is packed in the substantial box that brings the fruit to them, solid and round and perfect. Make them realize that apple growing in the Northwest is a science, that here as nowhere else the apple is brought to its highest perfection. Tell them of the healthfulness of the apple, how it aids digestion and helps regulate the system; tell them of its great food value as shown in the government bulletin—making it plain always that you are talking about the Northwest apple.

But do not stop with these mere facts. Appeal to their taste. Make their mouths water for the crispness of a perfect Delicious or Newtown. It can be done even in type and pictures. Then go on and tell them of all the appetizing ways in which the apple can be used. Give them a recipe for a new apple salad, for example. Suggest that the housewife send for a complete booklet of selected apple recipes. You can well afford to give her one. Keep reminding them, these potential apple eaters in the East, of all the occasions when an apple is so good—for the whole family at breakfast, for father working late at the office, for the children at recess or after school, for the picnic lunch basket. A properly conducted advertising campaign will create a constantly increasing good-will asset for the Northwest apple industry that eventually will be worth millions of dollars.

Advertising will increase the consumption of Northwest apples and more nearly adjust the demand to the supply. Will create a demand throughout the year and thus stabilize the market. Will reduce the selling expense because the selling effort will be less. It is easy to sell goods for which there is an insistent demand. Will make it easier to get credit, for a banker will readily loan money on a branded food product for which there a steady call. Will have the indirect result of advertising the Northwest States themselves, and increasing the value of apple-bearing properties.

It is just as certain that advertising will do these things for Northwest apples as that it has done them for breakfast foods and oranges. Take the case of the California orange growers. In many ways their situation was similar to yours—they had a beautiful fruit with constantly-increasing output, but a nearly stationary demand. They turned to advertising, and in the last decade, while the population of the United States has increased 21 per cent, the per capita consumption of California oranges has increased 75 per cent. In his last annual report the general manager of the California Fruit Growers' Exchange writes: "The production of California oranges and lemons is increasing rapidly and the Exchange, looking to the future as well as to the present interests of its members, is by judicious advertising creating a larger

consumption of oranges, lemons and grapefruit. At the same time it has established for the "Sunkist" brand a national standard of quality that is a cash asset for every Exchange shipper. The advertised brands of the Exchange are now demanded by consumers everywhere." And all this has been done for the orange growers at a very moderate cost. This last year it was one and one-half cents per box, or only six-tenths of one per cent on the gross value of the fruit.

The proposed Council of the Northwest Fruit Growers, working in co-operation with the several selling agencies, is the organization through which this apple advertising can be carried on. This central body can conduct a comprehensive campaign of apple education such as no single selling agency or single growing district could afford to undertake. All will be benefited. None will be heavily taxed. A cent a box will provide an advertising fund that will make the American people know the Northwest apple. This fund can provide not only for educating the consumer, but for telling the trade what you are doing and for enlisting their co-operation. Advertising will make Apple Day a much bigger national affair—a day on which everyone will think apples, talk apples, eat apples and get the desire to do so for many months to follow.

If advertising were to cost five cents a box it would still be worth while. But a cent a box will do it—and that is a safe, conservative expenditure. Properly, it is not an advertising expense alone. Advertising has come to be considered as one of the regular items of selling expense. It is so counted by thousands of the most reliable and prosperous business firms in the country. The general manager of the California Fruit Growers' Exchange refers to it as "partly an operating cost and partly an investment for the sale of future crops." You have no reason to doubt the future prosperity of the Northwest apple industry. You have one of the finest fruit products in the world, already favorably known to many people. You are intelligently applying yourselves to the problem of marketing that product without waste effort and waste expense. You need go only one step further. You need only to tell more people about your product, to teach them its goodness, and thus open up new and greater markets and secure for the Northwest apple the good will, which next to its quality is the greatest asset it can have. You can do this by advertising—which is merely the "Truth Well Told."

The Washington Agriculturist is one of the most attractive and valuable publications coming to this office from any of the agricultural colleges. The Washington Agriculturist is published by the Washington Agricultural College, Pullman.

Old-time jimmy-pipers rally round the P. A. standard!

Col. J. S. Powell of Pensacola, Fla., 95 years old, and nephew of William Henry Harrison, the ninth President of the United States, has just been elected to the "old-time jimmy-pipers" club. Col. Powell has smoked for 85 years, breaking into harness as a ten-year-old. We will be glad to receive pictures of old-time smokers.

Now, everybody sit around close:

Any farmer along the friendly road will tell you never to judge the depth of a well from the length of its pump-handle. Just like it's back-shuffling cards to choose your tobacco from *the looks of the package*.

Pick P. A. for pipe joy and cigarette makin's joy, and you'll be just as happy as a June bug in an apple tree. For it's mighty widespread news nowadays that Prince Albert is made by a patented process that *takes the teeth out of the smoke* and leaves your tongue as calm and peaceful as a harvest moon night. That's *jimmy-pipe joy* that comes via

*Col. J. S. Powell
of Pensacola, Fla.*

Copyright 1915
by R. J. Reynolds
Tobacco Co.

PRINCE ALBERT

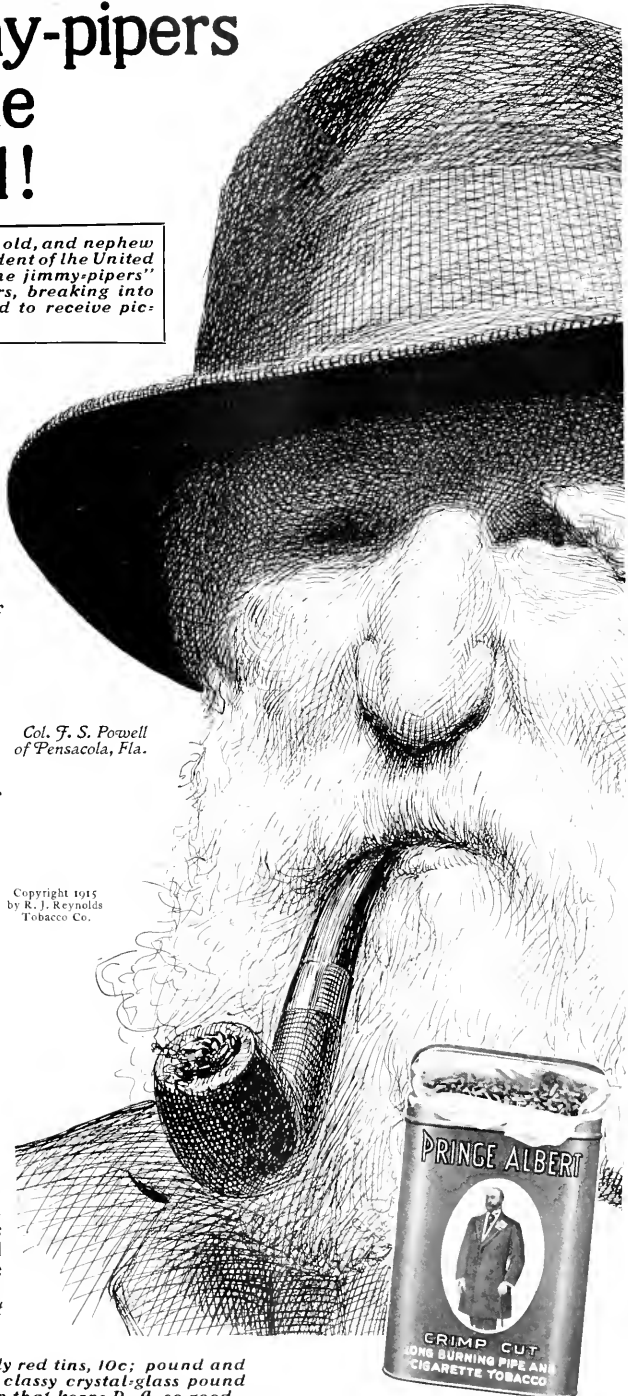
the national joy smoke


While the spring's young, tune up that old jimmy-pipe and bud-out into a real and true pipe smoker. Sure enough, you'll be in full bloom before the day is done, if you'll smoke P. A. For there's no more teeth in it than in a mocking bird's tune box. *And let that drift into your system.*

Buy P. A. in tippy red bags, 5c; tidy red tins, 10c; pound and half-pound tin humidors—and that classy crystal-glass pound humidor with the sponge in the top that keeps P. A. so good.

R. J. REYNOLDS TOBACCO COMPANY, Winston-Salem, N.C.

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT





"LOOK FOR THE NAME"

ON SPRAY PUMPS

For Spraying, Painting and Disinfecting.

If you grow fruit or vegetables, raise poultry or care for stock, you can't get along without a spray pump. You might just as well have a good one as any other kind. Get a MYERS—Bucket, Barrel or Power—according to your needs—a guaranteed pump that you can depend on or a fully equipped outfit with tank, tracks, etc., that is handy to use about buildings for whitewashing or disinfecting, and also adapted for spraying trees, shrubbery, etc.

Write today for late Catalog showing all styles of Myers Spray Pumps, Nozzles and Accessories and giving complete Spray Calendar and Instructions—How and When to Spray. A Postal brings the catalog with name of our dealer.

F. E. MYERS & BRO., 120 Orange St. ASHLAND, OHIO
ASHLAND PUMP AND NAY TOOL WORKS



SPRAY MATERIALS

Distributing warehouses in principal fruit growing sections of the Northwest for—

Arsenate of Lead, Paste and Powder
Atomic Sulphur
Lime Sulphur Solution
Bordeaux Mixture
Oil Emulsions, Soluble Oil and Soaps

In dealing with this Company fruit growers obtain the advantage of **quick delivery, fresh materials, minimum freight rates, prompt service, uniform prices and definite directions for the intelligent use of these materials in order to obtain the best possible results.** Bulletins giving the best available information for efficient and economical control of insect and fungous troubles will be mailed free on request.

GENERAL CHEMICAL COMPANY

Royal Insurance Building SAN FRANCISCO, CAL.

Organization of Central Selling Agency Is Made

(From the North Yakima (Washington) Republic)

LAST NIGHT W. M. Nelson, acting for the Yakima County Horticultural Union; H. M. Gilbert, for the Richey & Gilbert Co., and C. E. Sanderson, for the Yakima Fruit Growers' Exchange, entered into articles of incorporation of the "Yakima Fruit Sellers," which is the name chosen for the central Yakima selling agency, for the organization of which a movement has been in progress for several weeks. Articles of incorporation were drawn and signed at a meeting of representatives of the three organizations in the office of Logan H. Roberts, and a copy of the articles were forwarded to the secretary at Olympia.

This action was taken following indorsement of the central selling agency plan by a meeting of the Horticultural Union in the afternoon in the Y. M. C. A. Building. The indorsement was

given by a vote which was almost unanimous, and the trustees of the union were authorized to join with the Yakima Fruit Growers' Exchange and the Richey & Gilbert Co. in incorporating the proposed agency.

The purpose of the Yakima Fruit Sellers are stated in the articles as follows: "First, To provide a central agency for the purpose of handling and selling fruits, agricultural and horticultural products for the persons, associations and corporations with whom it may see fit to enter into contract for this purpose, and to find a market for and sell said products. To reduce the cost of selling Yakima Valley products and procure better distribution, prevent overloading markets and to better advertise Yakima Valley products. Second. To provide a selling and handling

association in which persons with whom this agency may contract shall have a voice in the methods used in the sale of all products sold or handled by this corporation. Third. To do any and all acts necessary to promote the sale or distribution of Yakima Valley fruits and produce for the benefit of any and all persons, associations and companies with whom this company may contract."

The corporation is of a non-profit-sharing character, and the capital stock was fixed at the nominal sum of \$3,000, divided into thirty shares. Each of the organizations, through its representative, takes ten shares. The period of incorporation is fifty years, and the principal office and place of business are located in North Yakima.

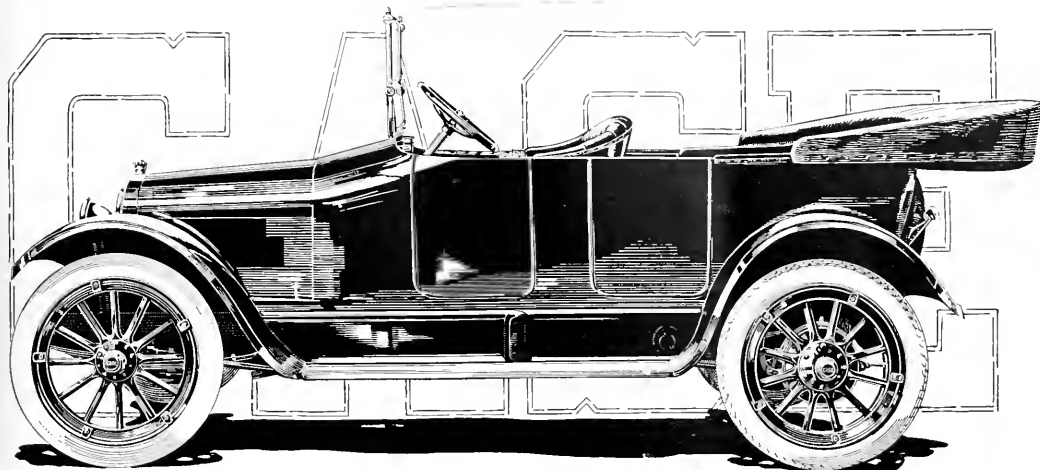
The affairs of the corporation are to be managed by a board of three trustees, but at any annual meeting of the stockholders, and at any special meeting called for the purpose, the number of trustees may be increased to a number not exceeding nine. W. M. Nelson, H. M. Gilbert and C. E. Sanderson are named as trustees until May 1, 1915.

Although the final vote at the Horticultural Union meeting on indorsement of the central selling agency plan was practically unanimous, only a few votes being cast against it, vigorous opposition to the move was offered in a lively session of several hours attended by sixty or more growers. The opposition was led by Ed Remy and H. B. Scudder. Before adjourning the meeting passed a resolution urging the Yakima Valley Fruit Growers' Association to market all its soft fruits, and if possible all its fruit, including apples, through the new central agency. Although not included in the resolution, its purpose, as stated in discussion, was to urge making the Yakima Valley as near a unit as possible in the marketing of its fruit. A meeting of fruitgrowers of all affiliations was held at Parker last night and resolutions were passed indorsing the new central agency.

President Nelson, speaking for a majority of the directors of the union and for himself personally, declared: "We hope and firmly believe that the Yakima Valley Fruit Growers' Association will join this movement; if not immediately, at least next season. We have the assurances of C. H. Swigart, the association's representative on the committee, that the association is willing to give us its tonnage except winter apples. Should the association join it would be the purpose to give them just the same representation on the selling board as each of the others have. The union has done well, but whether it can continue to do so if the present cutthroat policy continues is a question. I honestly believe that if you fail to accept this you are blocking the progress of something that means a great deal for the Yakima Valley."

The agreement, laid before the meeting of union members at the Y. M. C. A., was as follows: "We, the undersigned, in organizing the corporation named, the 'Yakima Fruit Sellers,' agree as fol-

Continued on page 32



The Name Behind the Goods

Time Brings Out Its Greatest Value

Time is the big test that your motor car must meet. And time is the test that will bring out the greatest value in the CASE "25."

No matter how pleased you are with its beauty, its comfort, its economy or its speed—you can have still greater satisfaction in its wonderful wearing qualities.

Men buy CASE cars to keep. They buy them because they embody the maximum in appearance and riding ease, with a mechanical sturdiness which can be most fully appreciated only after long service.

The time really to judge a CASE "25" is at the end of the third or fourth season.

Least in Price of the 30 Popular-Priced Cars

Of the 30 medium priced cars—from \$1250 to \$1500—the CASE "25" costs least, because—

Our prices includes *all* necessary equipment: Extra Tire, Inner Tube and Tire Cover on an extra Rim, Weed Non-Skid Tire Chains and Eight-Day Clock.

These features are doubly necessary for country driving, where garage service is often many miles away. Other cars do not have them.

They amount—with 5% discount we give if cash—to precisely \$110.25.

You must add this sum to the price of any other car in this class. Do this and you will see that it really costs more than the CASE, complete, at \$1350.

We Save in Selling

CASE cars are sold through the same organization that handles the CASE line of farm power machinery. Hence we are able to distribute our cars at exceptionally low cost.

The extra selling expense, which other makes must bear, is saved in the CASE "25" and goes to you in the form of better construction and better equipment.

Send for Catalog

Our new illustrated catalog tells you of the many ways in which we spend to your advantage the money we save in selling.

Read this book before you buy a car. Learn the real reasons why time brings out the value in CASE cars as it does in other CASE products.

CASE "25" Complete \$1350—5% Discount if Cash



NOTE—Ask us also for our 1915 catalog picturing and describing CASE Steel Threshing Machinery, Steam, Gas and Oil Tractors, CASE-Racine Tractor Gang Plows, Corn Shellers, Hay Balers and Road Machinery. Sent free upon request.

CASE

The Car With the Famous Engine

J.I. Case T.M. Company

(Incorporated)

Founded in 1842

Dept. 548

Racine, Wisconsin

(278)



SEPARATORS

Quickly Made
Sweet and
Sanitary
by this
Hygienic
Cleanser



Sample can and book containing 6 beautiful colored prints for children free.

CUDAHY,
Dept. 5
111 W. Monroe St.
Chicago, Ill.



Cutting the Cost Per Box Increases Margin

ORCHARD tractors are coming in more strongly each year as a factor in cutting the cost per box, and in the last few years especially the smaller machines have been perfected to a stage where the leading makes, at least, can be depended upon to stand up under the work and earn good dividends. Two years ago, thirty motor horsepower was a low rating for a successful tractor. A machine of that size was called a "small" tractor. But mechanical improvements come fast when a start is made in the right direction, and the present small tractors are really small. Good machines—weighing about what four good horses would weigh, costing the price of eight, doing the work of ten and taking up less ground space than two—are now to be had, with a responsible manufacturer's guarantee behind them. Fifteen to eighteen motor horsepower, and eight to ten horsepower on the drawbar, is now about the average as put out for orchard work. What such a tractor will do and how much money it will save are things that will differ with every farm, but where one man made a thirty-horsepower tractor pay in an orchard, ten can make make money on one of half to two-thirds that size. The type of tractor will also cut quite a figure, as more can be done with some kinds than others. Suppose that one pays the price and gets a tractor fully adapted to orchard work. Then he could expect to work it about as follows: 36 to 50 inches of plows is a safe load to handle at 6 or 7 inches deep in orchard or vineyard land that has had time to settle since the last cultivation. That

means, at a speed of 2¼ miles an hour, 8 to 11 acres of plowing per day. The tree rows not plowed will just about make up for the time lost in turns, etc. A double-disc harrow, from 6 to 8 feet wide, according to soil and throw of discs, and sometimes a smoothing harrow behind, should not be too heavy a load for such a tractor if properly designed for work on plowed ground. The first cross working could be taken care of very nicely with such a rig at the rate of 16 to 20 acres a day, again not deducting unplowed tree rows. Keeping the orchard cultivated is a job that pays well and keeps on paying as long as you do it. G. E. Browne of Spokane Bridge, Washington, has only 700 acres of Wagener, Jonathan and Rome Beauty apples, but his tractor (a large size) and harrows cover about 9,000 acres a season keeping the place clean—in other words, about 13 trips over the whole area. He makes 45 to 50 acres a day with a sixty-horsepower tractor (72 acres in 10 hours one day) at a cost of 20 to 25 cents per acre, including labor, fuel, oil and repairs to tractor, spring-tooth harrow and weeder. At that rate the handy small tractor ought to cover 15 to 20 acres a day with a heavy set of harrows, while on high speed (3 to 3½ miles an hour) with a lighter load, 25 to 35 acres of crust could be broken up in a day, to say nothing of night work besides. An electric lighting equipment doesn't cost much extra, and sometimes it is worth as much as another whole tractor.

The wide wheels or track of a tractor will also come in handy at harvest time, as crates or boxes can be picked up in

the field and taken to the packing house. Hauling from there to cold-storage house or railway station can be done quickly and cheaply with the tractor, and it is worth a good deal some seasons to get in ahead of the rush. A tractor of this size can handle from 12 to 14 tons on the middle speed at better than two miles an hour on solid, smooth, level roads. You can cut that square in two very easily if you have bad roads and heavy grades, but there would be the same trouble with teams. Go to market slowly with a big load and come back fast with the empties is good advice if your tractor has two speeds. If it has three, that is, low, middle and high, you will find the "low" a great time-saver in helping you over the worst spots in the road.

One hundred days of work a year will earn a tractor's way and pay interest on the outlay. Taking the minimum capacity per day, there would be about the following tractor work on an eighty-acre orchard: Plowing, 10 days; cross-work, 5 days; cultivating, 65 days; hauling, 20 days; miscellaneous, 20 days, a total of 120 days.

There are easily enough odd jobs to keep a tractor busy 20 days extra, and the 65 days for cultivating are a minimum, rather than an average, for best results. Neighbors can always be found who have work for a tractor to do, and as a matter of fact the yearly work of a small tractor is more apt to be 175 to 200 days than below that. Small tractors nowadays are snug and compact—not as high as a horse and almost as short-turning. Under the branches, turning up one row and back the next, over cultivated ground without packing—the little gas tractor is a very handy tool. No currying, no feeding when idle, no watering or harnessing, only one driver—it is a machine that is fast coming to be a necessity in keeping down costs to beat the middleman's game.

The San Diego Exposition paid all of their running expenses the first month and had a surplus left.

Wanted SALEMEN SALESWOMEN

Our representatives are earning \$50 to \$150 per week. Write quick for sample and territory. It's selling like wild-fire. Everybody's a Customer

HYTHEE'S FACTORIES

199 Majestic Building INDIANAPOLIS, INDIANA

Orchard Yarn

Progressive orchardists, those right down to the minute in methods of protecting heavy laden fruit trees, are agreed that tying branches with Orchard Yarn is the modern way of supporting orchard trees. It is not expensive, is easily done, and the time to tie is when trimming. The spurs are then tougher, less easily broken off than later, leaves are not in the way and all parts of the tree can be seen. Saving but a small percentage of trees from being broken down will pay for the expense of tying an entire orchard. One-ply Tarred Manila Yarn will run about 200 feet per pound. Two-ply will run from 90 to 100 feet per pound. Put up in 5-pound balls or in 10-pound spools. In 5-pound balls the yarn pulls from the inside and is more easily handled.

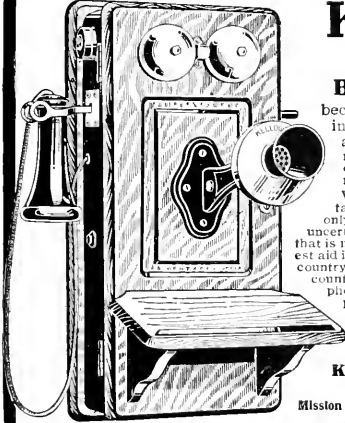
Sold by all merchants handling orchard supplies.

Manufactured by

The Portland Cordage Company
PORTLAND, OREGON

Final Telephone Efficiency

YOU can get it from the instrument shown here. One of the Kellogg kind. Works on any kind of a line and with any kind of telephone. Rings clearly with 40 telephones on the line. Compact, durable, light. Less wall space. Unbreakable receiver and mouth piece. Lightning arrester. Secret service push button to ring Central without ringing neighbors. No repair bills. 5 year guarantee on transmitter.



KELLOGG Telephones Best in the World

because they are made in the largest independent factory in the world and have to undergo the most rigid tests ever devised. There are 7 of the tests and none but a Kellogg made instrument could stand them.

Why not know real phone service. Why take chance on cheaper instruments that only mean in the end repair bills and the uncertain weak transmission of messages that is maddening. The telephone is the greatest aid in the world in linking up the lines of country people with the whole world, but the country man of today wants the best telephone. Send us your name and we'll prove to you that there is a reason for Kellogg's world-wide reputation. Also see that you get much valuable and interesting telephone information free. Write for bulletin No. 21

KELLOGG SWITCHBOARD & SUPPLY CO.

Misson and Third St., San Francisco, Calif.

The Northwest Fruit Shippers

On March 11th the official representatives of nearly all of the principal marketing concerns of the Northwest met in Seattle for the purpose of effecting a marketing organization. H. M. Gilbert of North Yakima was appointed temporary chairman, C. W. McCullough of North Yakima, temporary secretary. The committee on membership organization named was: C. W. Grant, chairman; G. M. McKee and Chas. Crawford of North Yakima; J. H. Dingle, Conrad Rose, Grant Patten of Wenatchee; J. H. Robbins, general manager of the North Pacific Fruit Distributors, and W. F. Gwyn, general manager of the Northwest Fruit Exchange.

The report rendered by this committee was accepted as a whole with a few minor changes. A permanent organization was effected to be known as the "Northwest Fruit Shippers' Council," the membership being open to shippers in Oregon, Washington, Idaho and Montana handling fifty cars or more per year. Dues were fixed at one hundred dollars. It was decided the governing board should consist of fourteen members, to be selected as follows: One representative from the North Pacific Fruit Distributors; one from the Northwest Fruit Exchange; two from Wenatchee, outside of the above-named organizations; two from Yakima Valley, outside of the above-named organizations; one each from Hood River, Oregon; Lewiston, Idaho; Clarkston, Washington; Southern Idaho; Montana; Spokane, Washington; Rogue River, Oregon; Walla Walla, Washington, and Western Oregon.

It is the intention of the Northwest Fruit Shippers' Council to call a meeting of the governing board of fourteen members as often as conditions and circumstances may render necessary. The following officers were elected for the ensuing year: H. F. Davidson, Hood River, president; Conrad Rose, Wenatchee, vice-president; H. M. Gilbert, North Yakima, second vice-president; Worriell Wilson, Seattle, secretary and treasurer. Other members of the governing board elected were: W. F. Gwyn, Seattle; C. M. McKee, North Yakima; G. W. Coburn, Wenatchee. The balance of the members of the governing board are to be elected later.

Gophers

Fruitgrowers and alfalfa growers in the spring are always crowded with work and too frequently do not realize that it is in the spring that the gophers begin their active work. When a tree is lost the fruitgrower loses all the way from \$1,000 to \$10,000 or more, according to the age. Consequently the fruitgrower probably suffers more heavily from the damage done by gophers than any other class of farmers. Alfalfa fields are sometimes almost entirely ruined by gophers. Much of the damage is done by the irrigation ditches being undermined, and altogether it is supposed that the damage done by gophers in one season amounts to possibly millions of dollars. Every effort should be made at this season of the year to destroy them.

Always Specify



Then **BE SURE** this brand is on the kegs you get

Honest Quality and Full Count have made them the World's Standard, which is why you should insist on

"PEARSON'S"

And Accept No Substitute

Pacific Coast Agents

UNITED STATES STEEL PRODUCTS CO.
San Francisco—Los Angeles—Portland—Seattle

J. C. PEARSON COMPANY, Inc., Old South Building, Boston, Mass., Sole Manufacturers

Northwest By-Products Board

The fresh fruit situation makes it inevitable that a very great number of canneries, evaporators and other kinds of fruit products plants will be established in the Northwest during the next two years. There is a real need for many of these if the districts east of the mountains are to maintain their fruit business upon a sound basis. Unless controlled, most of these plants will be started wrong. Many will be badly managed and many will be organized where there is no need for them. The result will be failures and much needless loss of money. While this is going on the market will be demoralized because the badly managed plant is usually just as badly off in its selling. The result will be serious injury to the business of the existing plants. All this will take place unless the situation is controlled.

The Northwest By-Products Board believes that its function is just as much to help control the general situation as it is to help communities start plants that will take care of their surplus fruit. In that work we need the help and co-operation of every existing cannery, evaporator, dried fruit packer or other form of plant. The present industry should be as closely tied together as possible, so as to establish standards of pack, a reasonably uniform price and a co-operative reaching out for new markets. Once that is done the industry will be stabilized and our committee can work with the fruit products plants toward helping take care of the surplus fruit in the districts where it is now going to waste.

Many of these districts are probably not ready for plants. They have not volume enough. With a united strength we can work with the railroads to get a low express rate for berries or freight rate for fruit that will permit the assembling of this stuff at existing plants until the district develops an output that justifies a cannery or evaporator. In those districts where there is a manifest need for plants at once, the committee can help promote these in such a way that they will be operated right and their product can be sold side by side with that of the existing plants, and the market will not be demoralized. This will help the new plant and will protect the old ones.

Perhaps the whole situation cannot be worked out as smoothly as that. A great deal of difficulty will be experienced in getting the existing plants into any kind of an agreement. Also, irresponsible promotions will be started that nobody can control. But the committee believes that, with an organization of all the existing plants, it can do a great deal toward controlling the situation. This general problem was discussed at the recent conference in Portland. Other small district meetings are being held. Soon there will be need to hold another general conference. In the meantime we wish to ask you to think over the situation and frankly and fully write us just what you be-

Bean Giant Power Sprayer

The Power Sprayer for Large Orchards

For downright dependability—efficient work—high pressure—ease and economy of operation—low cost of maintenance—strength—durability—and all round satisfaction the Bean Giant is in a class by itself. Supplies 2 to 4 lines of hose and has a capacity of 7 to 12 gallons a minute. Good for 4 to 8 acres a day.

Thirty years' experience in the building of spray pumps is back of this outfit.

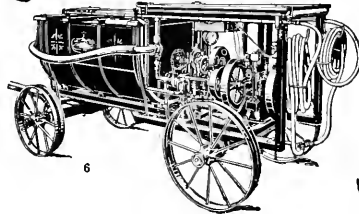
Built Complete Under One Roof

Every part is produced right here in our own factory—with the exception of the Novo engine and we use the Novo because we can't build a better sprayer engine. TWENTY-ONE DISTINCTIVE FEATURES are incorporated into the making of the Bean Giant—Patented Pressure Regulator, Porcelain-lined Cylinders, Rustless Ball Valves, Bean Patented Refiller, Truck with Rocking Bolster, One-piece Steel Frame, and many others.

We manufacture a complete line of smaller power sprayers and hand pumps. Before you invest in any kind of a Sprayer, write for

FREE CATALOG 28-A

It illustrates and describes all Bean Hand and Power Sprayers and pump accessories—and shows just why they are best.



Bean Spray Pump Company

213 West Julian Street
SAN JOSE, CAL.

12 Hosmer Street
LANSING, MICH.

E. D. Epperson

Now is the Time to Select Your Plants to Beautify Your Home Grounds
I have just received a carload of new

Ornamental Shrubs and Roses

from Holland. Send for list and prices.

If you will give me the measurements of your lot and location of buildings I will give you the benefit of my experience in selecting the right plants for the right place.

I carry a full line of **Fruit Trees and Berry Stock**, wholesale and retail.

GET THE HABIT
Call
MAIN 8135
A3302

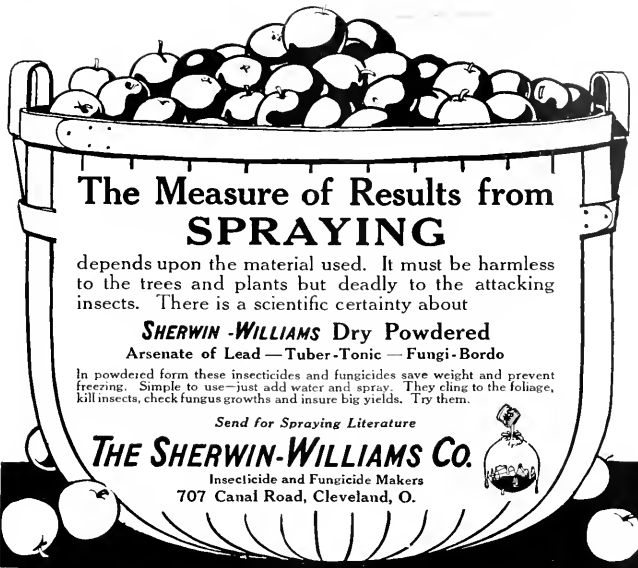
245 Fourth St. Portland, Oregon

**Nurseryman
and
Landscaper**



I Have Clients Who Have Invested About \$60,000

in an orchard property in Maine. About 400 acres, 2,000 producing trees, 12,000 one and two-year-old planted with dynamite, two sets fine buildings, lots of equipment. All for sale at ruinous sacrifice and most of purchase price can remain on long mortgage. If you have a little money and are looking for a bargain, address P. O. Box No. 412, Philadelphia.



**The Measure of Results from
SPRAYING**

depends upon the material used. It must be harmless to the trees and plants but deadly to the attacking insects. There is a scientific certainty about

SHERWIN-WILLIAMS Dry Powdered
Arsenate of Lead — Tuber-Tonic — Fungi-Bordo

In powdered form these insecticides and fungicides save weight and prevent freezing. Simple to use—just add water and spray. They cling to the foliage, kill insects, check fungus growths and insure big yields. Try them.

Send for Spraying Literature

THE SHERWIN-WILLIAMS CO.
Insecticide and Fungicide Makers
707 Canal Road, Cleveland, O.

lieve ought to be done. The nearer we can come to all agreeing on something, the better off we will all be.—Northwest By-Products Board.

Bees Are Not Poisoned by Sprays

There has long been a belief that spraying blossoms with arsenate of lead or other poisons would kill the bees that visited the blossoms after spraying in their search for honey. Professor C. W. Woodworth of the University of California has conducted some careful investigations in the Pajaro Valley, which are related by him in "Gleanings in Bee Culture," showing that this fear is groundless, that the spraying can be done at the time best for codling-moth control, and that the bees can visit the blossoms without injury. A colony of bees from the university at Berkeley was shipped to Watsonville and placed in the midst of a forty-acre apple orchard at Watsonville just before a heavy spraying with arsenicals was given. After being kept there for some time without apparent injury to the bees, the hive was shipped back to Berkeley and kept closed until a number of the bees were dead. These were taken out and a considerable amount of arsenic was found upon them, but it was all on the outside, coming there by contact, as would dust or powder of any kind. No internal arsenic was found and the arsenic apparently had nothing to do with their deaths. There was likewise no trace of arsenic in the honey gathered by the bees from the blossoms sprayed with arsenicals. The right idea is to spray when the blossoms need it. Keep bees if convenient to pollinize the blossoms, but do not worry about the effect of the spraying on them.

"PERFECT" Cement Coated Nails

OUR PRODUCTS ARE OF SUPERIOR QUALITY
AND GUARANTEED TO GIVE SATISFACTION.

PRICE and QUALITY always right.

PITTSBURGH STEEL COMPANY, Pittsburgh, Pa.

A. C. RULOFSON CO.

"The Cement Coated Nail People"

Monadnock Building, SAN FRANCISCO, CALIFORNIA
PACIFIC COAST SALES MANAGERS

MILTON NURSERY CO.

A. MILLER & SONS, Inc.—MILTON, OREGON

Pear, Cherry, Apple, Prune, Peach. Full line Shade & Ornamental Stock

Quality in Nursery Stock is a condition, not a theory; it is something we put into our trees, not say about them. Thirty-five years' experience enables us to do this.

SALESMEN WANTED

A Catalog and Special Prices on Request

Statement of the Ownership, Management, Circulation, Etc.

Required by the Act of August 24, 1912.

of "Better Fruit," Published Monthly at Hood River, Oregon
for April, 1915

Note: This statement is to be made in duplicate, both copies to be delivered by the publisher to the postmaster, who will send one copy to the Third Assistant Postmaster General (Division of Classification), Washington, D. C., and retain the other in the files of the post office.

Name of Editor, E. H. Shepard. Post office address, Hood River, Oregon.
Name of Managing Editor, E. H. Shepard. Post office address, Hood River, Oregon.
Name of Business Manager, E. H. Shepard. Post office address, Hood River, Oregon.
Publisher, Better Fruit Publishing Company. E. H. Shepard, sole owner and publisher. Post office address, Hood River, Oregon.

Owners: (If a corporation, give its name and the names and addresses of stockholders holding 1 per cent of more of total amount of stock. If not a corporation, give names and addresses of individual owners.) E. H. Shepard, sole owner. Address, Hood River, Oregon.

Known bondholders, mortgagees and other security holders, holding 1 per cent or more of total amount of bonds, mortgages, or other securities: (If there are none, so state.) None.

Average number of copies of each issue of this publication sold or distributed through the mails or otherwise, to paid subscribers during the six months preceding the date shown above: (This information is required from daily newspapers only.)

E. H. SHEPARD, Editor and Publisher.

Sworn to and subscribed before me this 19th day of March, 1915.

(Seal)

ERNEST C. SMITH,
Notary Public for Oregon.

My commission expires August 7, 1916.

BUY AND TRY

White River Flour

MAKES

Whiter, Lighter Bread

BETTER FRUIT

HOOD RIVER, OREGON

Official Organ of The Northwest Fruit Growers' Association
A Monthly Illustrated Magazine Published in the
Interest of Modern Fruit Growing and Marketing
All Communications Should Be Addressed and Remittances
Made Payable to

Better Fruit Publishing Company

E. H. SHEPARD, Editor and Publisher
H. E. VAN DEBEEK, Contributing Editor
STATE ASSOCIATE EDITORS

OREGON

C. I. Lewis, Horticulturist..... Corvallis
H. S. Jackson, Pathologist..... Corvallis
H. P. Wilson, Entomologist..... Corvallis

Dr. A. L. Melander, Entomologist..... Pullman
O. M. Morris, Horticulturist..... Pullman

COLORADO

C. P. Gillette, Director and Entomologist..... Fort Collins
E. R. House, Chief of Department of Civil and Irrigation
Engineering, State Agricultural College..... Fort Collins
E. P. Taylor, Horticulturist..... Grand Junction

IDAHO

W. H. Wicks, Horticulturist..... Moscow
W. S. Thorner, Horticulturist..... Lewiston

UTAH

Dr. E. D. Ball, Director and Entomologist..... Logan

MONTANA

O. R. Whipple, Horticulturist..... Bozeman

CALIFORNIA

C. W. Woodworth, Entomologist..... Berkeley
W. H. Volck, Entomologist..... Watsonville
Leon D. Batchelor, Horticulturist..... Riverside

BRITISH COLUMBIA

R. M. Winslow, Provincial Horticulturist..... Victoria

SUBSCRIPTION PRICES:

In the United States, \$1.00 per year in advance

Canada and foreign, including postage, \$1.50

ADVERTISING RATES ON APPLICATION

Entered as second-class matter December 27, 1906, at the
Postoffice at Hood River, Oregon, under Act
of Congress of March 3, 1879.

Business Improving.—From the trend of opinion as expressed by financiers and able thinkers, we are justified in assuming that not only is business better but we can look forward with confidence to a steady improvement. A recent article in the *World's Work* furnishes some interesting data and assurance of better times and better business. The Pennsylvania Railroad has recently sold \$49,000,000 worth of $4\frac{1}{2}\%$ mortgage bonds; the Illinois Central has also sold millions of securities and other railroads are doing the same. The railroads and business are already borrowing money for productive purposes because money is plentiful and cheap. It is eight months since the war broke out, which created a drastic stringency in financial circles. That period of uncertainty and fear has passed. At the present time an abundance of cheap money exists; it is the biggest stimulant in the world to create business. Capital cannot, will not and does not lie idle long. City banks which are required by law to carry a 15% reserve have from 25% to 40%, or twice the normal amount required, which means that double the amount of money in normal times is now idle. This condition cannot and will not continue; this dormant capital will become active and with it business will become good.

It is not intended by this prophesy that business will come with a jump, but it is the opinion of the editor that a steady, gradual, safe improvement can be reasonably looked for from now on. In December last the balance of trade in favor of the United States was \$132,000,000. At the present increase of trade balance in our favor, it will be a billion dollars before the year is over. The *World's Work* states that the

United States during the war is saving over \$200,000,000 per year which has usually been spent by American tourists in Europe. All of these conditions point to a continuation of cheap money and the encouragement of industrial activity. The stringency is past; the emergency measures taken at the outbreak of the war are no longer necessary; the gold pool has been dissolved and the cotton pool is no longer needed. The stock exchanges are open, although minimum price restriction still prevails. Our condition is now improving with certainty and we may reasonably expect it to continue to improve even if the war continues. A review of history shows that usually following war business conditions are much improved. After the Civil War business showed a steady improvement, which continued with apparently few setbacks until 1907. The *World's Work* states that there is much historical precedent for decent optimism.

The *World's Work* further states: "With such possibilities before us, a courageous and patriotic thing for men to do who have brains, energy and capital, is to use them so that our bread lines may be shortened and an end made to the setback caused by the disruption of the normal relations of trade by the sudden outbreak of the war. There is before us an opportunity for an immediate quickening in business,—an opportunity which it is our duty to make the most of. It is noted chiefly on cheap money, but not alone on that. There are other encouraging signs which we can welcome. It is a time when optimism and energy can gain a fair reward."

The Board of Control of the Marketing Organization.—The selling concerns have organized with a Board of Control, one representative to be given to each of the large concerns like the Northwest Fruit Exchange and the North Pacific Fruit Distributors, and in the different sections where there are several other marketing organizations they are accorded a representative on the Board of Control. For instance, if there are eight marketing organizations in any particular district, then these eight are given two representatives, making in this way a total of fourteen. This small body, representative of the marketing concerns, can confer with the Board of Control of the fruitgrowers' organization in reference to the policy to be pursued. It is generally believed that they can agree on some harmonious condition which will be conducive to great good for everyone interested in the fruit industry. Through this plan, it is believed that the markets can be stabilized; it is believed the marketing concerns will become more efficient and better service rendered to the dealer; the standard of packing can be improved and be made more uniform. It is also believed that this combination will result in better prices for the fruitgrower by elimination of unnecessary self-competing or cutting of prices. At the

same time it is hoped and believed the consumer in the end will be given better care and obtain his fruit even at a less price than he has done for many years in the past.

Railroads have been criticised by the public very extensively; while perhaps some of it has been just, much has been unjust. The railroads have been great developers of communities; they are creators and builders of business. Without the railroads the Northwestern States,—Oregon, Washington, Idaho and Montana,—would still be not much more than a wilderness or desert lands. The railroads have peopled these four states with a population of nearly four millions. Apparently it is not easy going for the railroads. The Interstate Commerce Commission has regulated rates,—not that they have done so unwisely, but nevertheless it has affected the income of the railroads. The labor organizations have demanded shorter hours and frequently better pay. With the income reduced and the expenses increased, many railroads have found difficulty in maintaining the equipment, trackage and good condition. The Interstate Commerce Commission recently granted an increase of five per cent. It is believed this will do much to improve financial conditions with our railroads. It is hoped it will enable them to do such improvement and extension work as may be necessary for the development of the country. It begins to look as if the public had begun to understand the importance and

SEE CALIFORNIA AND HER TWO GREAT EXPOSITIONS NOW

California is this year holding two great universal Expositions, one at San Francisco and the other at San Diego, in celebration of the completion of the Panama Canal and the joining of the Atlantic and Pacific Oceans. These two Expositions represent an expenditure exceeding one hundred million dollars. To supply the demand for reliable and authentic information on these Expositions and California, we have published two beautiful books; one on San Francisco, the Exposition and Northern California; the other on Los Angeles, San Diego, the Exposition and Southern California; also a lithographed view of San Francisco in colors (size 30x15 inches), a picture of the rebuilt city, including the Exposition. Each book is 6x9 inches, contains nearly 200 pages and many beautiful illustrations.

These two books and large bird's-eye view give a comprehensive, honest history and description of the state, her principal cities, resources and her two great Expositions. Sent prepaid for 35 cents each or all three for a one dollar bill, money order, draft or check. Order now, addressing:

North American Press Association,
Publishers,
1420 Hearst Building, San Francisco.

necessity of proper railroad service, and it is to be hoped that the railroads will receive proper consideration from the public in the future.

The 1915 Outlook.—During the year 1914 many adverse conditions prevailed which were accountable for the low prices that the fruitgrower realized. In the first place, an immense crop; in the second place, a general depression of business; in the third place, the war broke out just as the apples were beginning to go on the market; in the fourth place, the crop got ripe all together; in the fifth place, there was much indiscriminate marketing and cutting of prices and unnecessary competition; in the sixth place, much fruit was shipped without ice to save the extra expense. Perhaps this is enough to account for the low prices prevailing in the year 1914. It is reasonable to assume that such a combination of conditions will not occur again very near in the future. The Northwest feels assured that much better marketing conditions will prevail and it is reasonable to assume a big crop will not follow on top of last year's crop, so therefore growers can reasonably hope and expect to obtain much better prices than during the past year.

The Policy of the Growers' Council. It will be the aim of this body, through their Board of Control and Executive Committee, to create a policy that can be consistently followed by different marketing concerns. All of the different members of the Board of Control and Executive Committee, in the minds of the fruitgrowers, are safe, sane and conservative people; therefore it is to be assumed they will act with good judgment and impose no condition on the marketing concerns that cannot be reasonably complied with. Such a policy will meet with success and support of the marketing concerns. On the other hand, if their demands were impossible opposition would naturally spring up which would result in friction and the good work impaired in the very beginning. But it is believed, as already stated, that the Board of Control and the Executive Committee are such reasonable men that they will only ask such reasonable considerations as the marketing concerns will cheerfully comply with.

The Growers' Council, Its Board of Control of Ten and the Executive Committee of Three.—This issue contains a very interesting personal account of each member of the Growers' Board of Control and the Executive Committee of Three, which should prove very interesting to every fruitgrower of the Northwest. The growers have placed a great big responsibility on these people and it is well they should have as much information about their past history as is obtainable. "Better Fruit" has secured from each one of the Board of Control and Executive Committee a brief personal account of their

Chain
Driven
Propeller
Agitator

Chamel
Steel
Frame

Mounted
or Not
As
Desired

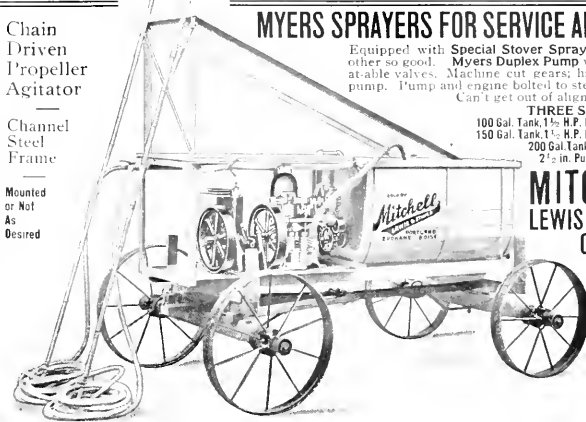
MYERS SPRAYERS FOR SERVICE AND WEAR

Equipped with Special Stover Spray Engine. No other so good. Myers Duplex Pump with easy get-at-able valves. Machine cut gears; high efficiency pump. Pump and engine bolted to steel bed plate. Can't get out of alignment.

THREE SIZES
100 Gal. Tank, 1½ H.P. Engine, 2 in. Pump
150 Gal. Tank, 1½ H.P. Engine, 2 in. Pump
200 Gal. Tank, 2½ H.P. Engine,
2½ in. Pump

**MITCHELL
LEWIS & STAVER
CO. PORT-
LAND,
ORE.**

ALSO SPOKANE
AND BOISE



past and present, which is embodied in a short personal article in this issue,—the age, birthplace, date of birth, different lines of business each one has been engaged in, different public positions each member has held, his present business and his present public office.

Concentration of Tonnage.—The opinion seems to prevail among quite a few growers that, with the Board of Control, everything will be clear and easy sailing for the independent shippers and small shipping concerns. The Growers' Council and Board of Control and Executive Committee entertain a different idea. This committee states very positively they feel they can render far more efficient service with a smaller number of marketing concerns

than with a large number, therefore it is their desire that the tonnage be concentrated as much as possible, and it is to be hoped the grower will choose with wisdom and judgment the selection of his marketing concern, selecting such one as in his opinion he feels is reliable and such one as will secure good, satisfactory prices.

Spraying.—In these times of rigid economy the fruitgrower should give the matter of spraying careful consideration. Economy must prevail in every feature of apple producing as well as in marketing, therefore we are publishing a splendid article entitled, "Spraying Economy and Insecticide Efficiency." The object of the grower is to get a clean crop of fruit, therefore he sprays. At the same time it is im-



Use Tree Tanglefoot

against Gypsy, Brown-tail and Tussock Caterpillars, Canker Worms, Climbing Cut Worms and Ants. It is also effective against any crawling insects attacking fruit, shade or ornamental trees.

Band Trees About Two Weeks Before Insects Appear and Get Best Results

Easily applied with wooden paddle. One pound makes about 10 lineal feet of band. One application stays sticky 3 months and longer—outlasting 10 to 20 times any other substance. Remains effective rain or shine. Won't soften—won't run or melt, yet always elastic, expanding with growth of tree. No mixing, simply open can and use. Will not injure trees.

For Tree Surgery

Tree Tanglefoot is superior to anything on the market—it is the best application after pruning or trimming. It will water-proof the crotch of a tree or a cavity or wound in a tree, when nothing else will do it.

Sold by All First-Class Seed Dealers

1-lb. cans 30c; 3-lb. cans 85c; 10-lb. cans \$2.65; 20-lb. cans \$4.80, and 25-lb. wooden pails \$5.95.

Write today for illustrated booklet on Leaf-eating Insects. Mailed free.

THE O. & W. THUM COMPANY

113 Straight Ave. Grand Rapids, Mich.

Manufacturers of Tanglefoot Fly Paper and Tree Tanglefoot

(38)

Why not use the Best Nozzle when the cost is so little?

Try the **Crown Mass-o-Spray**


The only solid-cone-spray nozzle made.

It is imitated but never equalled.

A GOOD NOZZLE IS KNOWN BY ITS FRUIT

MUST NOZZLES MAKE A BIG SHOW AND A LOT OF NOISE ABOUT IT BUT DO NOT HIT THE RIGHT SPOT

THE CROWN MASS-O-SPRAY HAS DOUBLE THE PENETRATIVE POWER OF THESE. HITS THE CENTER. READ THE LETTERS AND THINK IT OVER



WE MAKE THE MOST PERFECT SPRAYING ACCESSORIES ON THE MARKET—IT IS AN EXACT SCIENCE WITH US. INSIST ON HAVING THEM.

A CROWN RELIEF VALVE ON YOUR SPRAY PUMP WILL SAVE A LOT OF TROUBLE. THERE IS NO JUST AS GOOD! PRICE \$4.99 BY PARCELS POST.

Dear Sirs:
Herewith hand you money order for One Dollar to pay for the two mass-o-spray nozzles you sent me for trial some time ago. I want to say that you make no mistake in selling these goods on the plan you do for they surely talk for themselves. I bought a new sprayer of the largest capacity this spring, and I think these nozzles have increased its efficiency at least 25 per cent. They set a pace that is hard to follow. You will hear from me again as I need supplies. Thanking you, I am, Yours truly,
Payette, Idaho, Apr. 27, '12. L. E. KEELER.

A NOZZLE WHICH WILL SPRAY AGAINST THE WIND IS WHAT YOU WANT. THIS ONE WILL DO IT. IT THROWS A SOLID CONE SHAPED MASS OF SPRAY. NOT A HOLLOW CONE AS OTHERS DO. IT COVERS IN HALF THE TIME. THE PRICE IS ONLY \$1.00 FOR TWO SENT BY MAIL AND GUARANTEED.

CROWN SPECIALTY CO.
1629 WASHINGTON BLVD. CHICAGO, ILL.

We will send **Two by Mail for One Dollar**

Send Money Order, Chicago Draft or Currency.

If personal check is sent, add 10 cents for exchange.

Crown Specialty Company
1629 Washington Blvd.
CHICAGO

portant that this should be done economically, therefore spray should not be wasted or used stronger than necessary to control the trouble. In many instances two sprays can be combined, thereby saving much extra cost in the way of labor. The combination of sprays has been shown in previous editions of "Better Fruit" and will not be repeated in this issue. If the grower is uncertain about any combination of spray materials, it seems wise to suggest he consult someone who is posted or write the Experiment Station in his particular state.

Does Spray Poison the Bees?—Many articles have appeared in various publications generally stating that bees were poisoned by sprays. Therefore attention is called to an article in this issue called "Bees Are Not Poisoned by Sprays," with the suggestion that fruitgrowers look into the matter during the coming season and determine for themselves in a definite way whether their bees are poisoned by spray or not.

Advertising the Apple.—In this issue is a very interesting article written by Mr. Atwood of the McCann Advertising Agency, a very able man, in reference to advertising the apple, which should be read by every apple producer.

Time for Grafting Trees

The question is often asked, "How late can you graft trees?" This question probably can be answered easily in this way: You can certainly graft apple and pear trees up to the time their leaves are as big as squirrel's ears, and I have heard of cases where grafting has been done after the leaves were of full size. However, there is one thing that must be remembered and that is that, to do successful grafting, the scions should be absolutely dormant. The buds should not have broken. After the scions have started to grow it is very hard to make successful unions. Where a large amount of grafting is to be done it is better practice to cut the scions in the middle of the winter, and stratify them in sand, putting in a layer of sand, then a layer of scions, and so

on. Keep the sand moist, but not wet, nor too dry. If it is kept too wet the buds will drop out and mold, and if it is too dry they will shrivel up. With cold storage facilities it is very easy to keep scions and buds for grafting in storage for a long time. In the case of June budding we can keep the scions on ice until June, so as to hold the buds dormant.

"The greatest hope of the railways and the public in the future lies in intelligent regulation. The railroad, generally speaking, adds a percentage to the farmers' prices that is not large."
—Hon. James Wilson, ex-Secretary of Agriculture.

CLOVER SEED

The very finest seed grown in the valley at the lowest possible prices. Write and tell us how much you need and we will quote.

D. A. WHITE & SONS
SALEM, OREGON

F. A. BISHOP, Secretary
HOOD RIVER ABSTRACT COMPANY
HOOD RIVER, OREGON
ABSTRACTS INSURANCE
CONVEYANCING



Two a Day
TO
CHICAGO
via Minneapolis and St. Paul

"North Coast Limited" "Atlantic Express"
FINE TRAINS — FAST TRAINS
Through Spokane, Butte or Helena, Fargo, Moorhead.

One to St. Louis
"Mississippi Valley Limited"

Accommodations to suit — Drawing-rooms, Compartments, Open Sections in Standard Sleeping Cars, Sections in Roomy Tourist Cars, and Coaches. On the Diners that best of all service, and the "Great Big Baked Potato."

LET US TELL YOU ABOUT IT
No matter where you will start from, or your destination, let us quote you fares and help arrange your trip.

Northern Pacific Railway
A. D. Charlton, A. G. P. A., Portland, Oregon

Mr. W. F. Gwyn Comments on the Fruit Growers' Council

The following extract is from an article which appeared in the Produce News as being an interview with Mr. Gwyn. Mr. Gwyn says: "It is a cause of sincere congratulation that jingo ideas were tabled almost unanimously and that the platform finally adopted is of a kind to unite growers and selling factors on a comprehensive constructive program. The personnel of the Executive Committee and Board of Control, together with the Shippers' League to be formed, is additional indication that the fruit industry of the Northwest is entering upon a new era. The result of the three days' conference at Tacoma is a 'get-together plan' that meets with our entire approbation. The Exchange has advised its grower members through an official bulletin to rally in enthusiastic support of a regime which can bring nothing but good to all sincere workers, whether in the producing or distributing ends of the industry."

Commenting upon the formation of the Yakima Fruit Sellers, which is a consolidation of Richey & Gilbert, the Yakima Horticultural Union and the Yakima Fruit Growers' Exchange, Mr. Gwyn is reported as saying: "This merger reduces the number of competing factors and in this respect is a step in the right direction." He further comments: "I have never believed it possible or profitable to market an overwhelming percentage of Northwestern fruit tonnage through any one agency. Human nature, in growers as in other people, requires an alternative. At least two marketing institutions are indispensable to the well being of the Northwestern fruit industry, just as the welfare of the country is better served by two strong political parties than when one is too long entrenched in power."

Mr. Gwyn regards the launching of the Yakima Fruit Sellers' announcement as a home selling organization for the exclusive benefit of the Yakima district. That it indicates that a considerable number of Yakima growers seriously question the economic soundness of the central selling agency principle by creating the Yakima Fruit Sellers, a local selling agency. Mr. Gwyn says: "This opens the field for competition between the home selling agency and the general selling agency, wherein a contest will take place for efficiency and service, with a survival of the concern which gives the grower the best results." Undoubtedly some interesting rivalry will take place, but the Exchange will play the game fair, and I anticipate nothing but the same spirit with Mr. Gilbert and his associates of the Yakima Fruit Sellers.

"Pop" Rulofson Is Still on Deck

Mr. A. C. Rulofson's legion of friends among the fruit industries on the Pacific Coast have missed his smiling countenance and glad hand at the 1914 fruit shows, and many inquiries have been made as to what has become of

Cutting the High Cost of Plowing

One man who bought a Baby Caterpillar a year ago writes: "Have sold off all my horses. The 'Baby' does all the work they did, only cheaper. It surely cuts the high cost of plowing."

BABY CATERPILLAR

Reg. U.S. Pat. Off.

Don't say Caterpillar unless you mean Holt!

An orchardist writes in glowingly: "I figure the Baby Caterpillar is cutting the cost per box quite appreciably. The 'Baby' cultivates close up to the trees without hurting the branches, and turns right from one row into the next. Also, since I can cultivate more frequently than with horses, I am getting a bigger crop and better fruit than ever before."

Another owner writes: "Three years, and less than \$25.00 for repairs."

When the owners boil over with satisfaction this way we realize more than ever how good a machine the Baby really is.

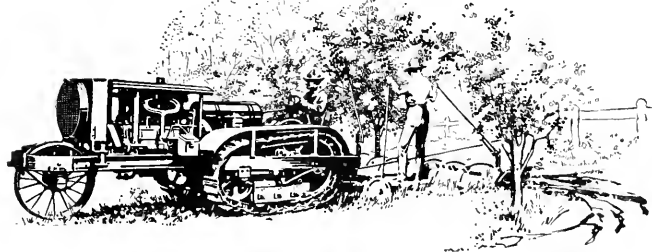
But send for new Baby Bulletin BE 176. It gives more exact figures on horse and Caterpillar costs of farming.

THE HOLT MFG. CO.

(Incorporated)

Stockton, Cal. Spokane, Wash. Peoria, Ill.

Cons. Wagon & Mch. Co., Sales Agts., Salt Lake City, Utah.



Get in Business for Yourself

THIS IS YOUR CHANCE—WILL YOU SEE IT?

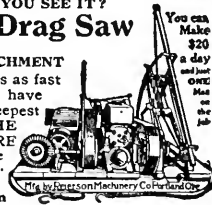
The King of the Woods Drag Saw

with or without BUZZ-SAW ATTACHMENT
with or without STEEL STUMP-PULLING ATTACHMENT
will cut a 5 foot log in 5 minutes, and small logs as fast with buzz-saw. It will pay your neighbors to have you cut their wood. Will pull itself over the steepest hills and roughest ground. IT ANSWERS THE QUESTION—HOW CAN I MAKE MORE MONEY ON THE FARM? You want to know more about it. Send for Catalog KW 4. WRITE TODAY.

REIERSON MACHINERY CO.

Sole Manufacturers

Portland, Oregon



You can Make \$20 a day and just ONE Man on the job!

ENCYCLOPEDIA OF PRACTICAL HORTICULTURE

JUST OFF THE PRESS

The only complete, thorough manual of fruit growing published—covering every feature—planting, pruning, cultivating, spraying, diseases, harvesting, etc., as used and approved by Northwest fruit growers. Contains valuable statistics. All reading matter arranged conveniently for reference and indexed.

It tells how to do the things that every fruit grower must do who is growing fruit as a business.

Three Large Volumes Handsomely Bound

Write for circulars containing full descriptive matter and prices.

ENCYCLOPEDIA OF PRACTICAL HORTICULTURE
407 Miller Bldg., North Yakima, Wash.

One-Man Power Sprayer

A Complete High-Grade Outfit at Small Cost

Here's the rig thousands of small farmers, orchardists and vineyardists have been looking for—a dependable, reliable, efficient, high-pressure power sprayer at small cost. One man does all the spraying. One horse can haul it anywhere. Supplies one line of hose and will cover from 2 to 3 acres a day. This is the first time you have been offered **Bean** quality in a low-priced outfit. Note these features of the

BEAN EUREKA

LIGHT WEIGHT—Makes it an easy pull for one horse and a mighty handy sprayer for rough and hilly land.

INEXPENSIVE TO OPERATE—One man does it all. Low first cost and practically no cost of upkeep.

NOVO ENGINE—as sturdy a sprayer engine as you can find. Novo spells satisfaction.

ALL COMPLETE—Including Patented Pressure Regulator, Rotary Agitator, Truck, Canvas Cover and Curtains, Hose, Rod, and everything complete.

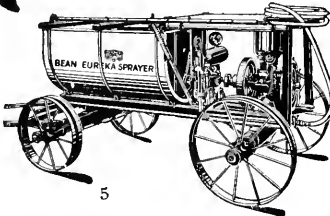
THIRTY YEARS OF EXPERIENCE are back of the Bean Eureka—and experience counts.

Send for Free Catalog 28-A

which illustrates and describes the entire Bean Line of Hand and Power Sprayers. Tell us the size of your orchard and we'll help you pick the Bean best suited to your requirements.

Bean Spray Pump Company

213 West Julian Street
SAN JOSE, CAL.
12 Hooper Street
LANSING, MICH.



5

him. Mr. Rulofson, early in 1914, went as a trade commissioner from California to the Orient. On his return last July he discontinued the handling of the cement-coated nails that he had boosted for so many years and took a well-earned rest. About the first of the year he was appointed Pacific Coast sales representative for the Pittsburg Steel Company, Pittsburg, Pennsylvania. Mr. Rulofson informs us that they make a complete line of cement-coated nails that are certainly equal to any other brand. Mr. Rulofson's friends will be glad to learn of his continued activities in the nail business, and will undoubtedly look forward to meeting him again at the various gatherings where fruitmen congregate.

Why Blossomed Fruit Fails

When fruit trees blossom well but do not set their fruit either the climate, diseases or pollination is apt to be the principal reason for failure, as explained by Professor C. I. Lewis, horticulturist of the Oregon Station. These conditions were present to a greater or less extent last year and are likely to occur at any time, for which reason growers should be on their guard to lessen the ill effects. Heavy rains at blossoming time mean, of course, that bees are not flying and that pollination would not take place. Or a heavy frost may occur at about the time the fruit is in blossom, and this often causes lack of setting of fruit. Such diseases as scab of pear or apple and brown rot of prune and cherry will sometimes destroy the entire crop. Insect pests also sometimes are destructive. Lack of pollination may occur, however, with none of these unfavorable conditions present. Many of our trees are self-sterile and require the presence of

FOR BEST RESULTS USE OUR Filtered Lime-Sulphur Solution

(EVERY DROP USABLE)

AND

Neutral Lead Arsenate

MADE IN OREGON

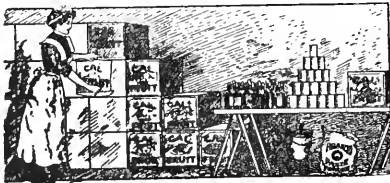
WRITE US FOR PRICES

Oregon Arsenical Spray Co.

J. C. BUTCHER, Proprietor

CLACKAMAS, OREGON

Paste for Labeling—"Palo Alto" Paste Powder



added to cold water, instantly makes a beautiful, smooth, white paste. Ready for immediate use at a cost of 10 cents a gallon. No labor. No muss. No spoiled paste.

PASTE SPECIALISTS

Robinson Chemical Works

349-351 Eighth Street

San Francisco, California

Western Agents
A. I. Root
Co.

Portland Seed Company

Bee Hives and Supplies

If you own an orchard or keep bees you should have a copy of our Catalog. It lists everything for the successful handling of bees and the production of honey.

We are pioneers in the bee supply business in the Northwest, are thoroughly familiar with local requirements and carry a large and complete stock.

Tested Queen Bees at Short Italian Bees Notice

Ask for Catalog No. 203.

PORTLAND SEED COMPANY

PORTLAND, OREGON



You should have the ACME Catalog. There are many other sprayers, also powder guns, planters, fruit-picking sack, etc., shown in our big Free Catalog.

Throws Any Spray

This light, handy Acme Compressed Air Sprayer throws any spray material with all the effectiveness of an engine-driven machine.

The air pressure, which can be as high as 60 pounds, drives the liquid through our spiral non-clogging nozzle in a whirling, mist-fine spray. This spiral feature is found only on ACME Sprayers. The nozzle is of solid brass, does not corrode, cannot clog, because the spiral plunger cleans the nozzle with every operation. The

ACME Compressed Air SPRAYER

holds 3½ gallons and empties on one charge of air. The tank is heavily galvanized, solidly riveted and well soldered. Air and water tight by actual test.

Seamless brass air pump can be furnished inside as well as out. On request we can furnish brass extension rod for tree spraying and crooked nozzle for low-lying vines.

This sprayer is almost indispensable to vineyard owners. We made 20,000 for Roumanian vineyards this year.

If you are not handy to a dealer we will supply you direct. If you are near a dealer and he happens not to have the ACME Sprayer he will gladly order for you from one of our Western distributors, listed below:

WASHINGTON

Marshall-Wells Hardware Co., Spokane
Holley & Mason Co., Spokane
Jensen-Kind-Byrd Co., Spokane

Mitchell, Lewis & Slaver Co., Spokane
The Chas. H. Lilly Co., Seattle
Potson Implement Co., Seattle

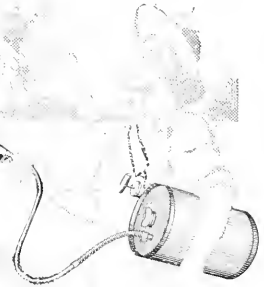
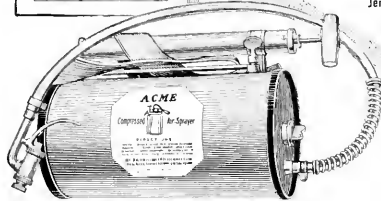
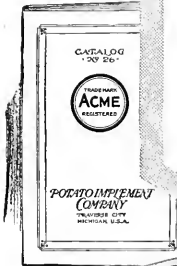
OREGON

Potson Implement Co., Portland
Marshall-Wells Hardware Co., Portland
Portland Seed Co., Portland
Mitchell, Lewis & Slaver Co., Portland

ACME Goods are in use on over 400,000 farms. If you are not acquainted you should send at once for the catalog.

POTATO IMPLEMENT CO.

327 Front Street, TRAVERSE CITY, MICH.



\$5.00 East of the Rockies



other varieties near them if pollination is to be secured. Lambert, Royal Ann and Bing cherries are all self-sterile and powerless to pollinate each other. Also Gravenstein and Spitzenberg apples and the Comice and Anjou pears are self-sterile.

Professor Lewis believes that the trouble with many of the isolated trees of Portland would be greatly overcome by having other varieties near them for pollination. This condition could be brought about in some instances by grafting other varieties into some of the trees or parts of trees. Those who are interested further in this matter may receive a copy of a letter on pollination now being prepared by the horticultural department of the college by making application. This letter will be ready in the near future and will give a list of sterile and fertile varieties and very comprehensive information on the subject of pollination.

Trouble of Non-Blooming Trees

It frequently happens that trees apparently healthy and vigorous refuse to blossom or bear fruit. This, according to Professor Lewis, chief of the Oregon Agricultural College Division of Horti-

culture, is generally owing to the vitality of the trees. "If your trees are on rich soil," says Professor Lewis, "or if there is too much manure or irrigation water used you may force them entirely into wood. This condition would be apt to be true with many of our apples, in which case it may be years before they will bear. Yellow Newtown, Northern Spy, King of Tompkins County, and in fact many of the apple varieties grown in and near Portland, if taken too good care of and over-pruned, will not bear, at least not until they are quite old. The remedy is to let up on the pruning; to prune twice a year, distributing the pruning between the early spring and the middle of June to the middle of July. Do not water them too much and go sparingly on manure. Sometimes these trees are in chicken yards, where the ground has been kept quite moist and is pretty heavily fertilized. Trees under those conditions often do not succeed. With the cherry trees that bloom and fail to set, I am almost certain that the trouble is pollination. The Black Republican can be grafted into those trees and will help them to set, or you can use a special strain of Waterhouse, which can be secured from Eugene,

which will help these trees to set a crop."

David Knight of Sawyer, Michigan, kindly sent this office a very attractive catalog on strawberrie for the year 1915.

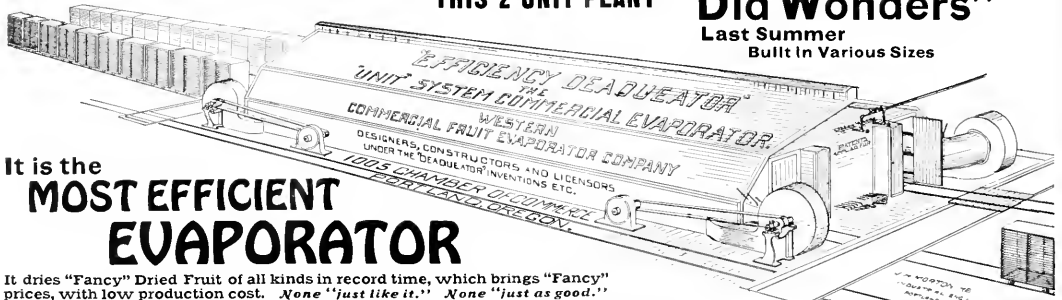
The E. J. Chubbuck Co., of San Francisco, California, whose advertisement appears in this issue, is offering something new in the way of a gopher trap. The Ideal Gopher Trap is the result of years of experimental work, covering every known method of exterminating the gopher pest. The essential features that make the Ideal a perfect trap are the enclosing doors or claws that grab the rodent and pull it into the cage. If it is a small gopher it will be found inside the cage; if a large one it is engaged between the claws. Being round with thin edges and a trifle larger than the hole, the gopher walks into the trap before detecting anything in his run-way.—[Adv.]

WANTED

Nurseryman, single, wants super-intendency of deciduous fruit orchard. Good references; moderate salary; permanent. Address A-Z, care "Better Fruit."

THIS 2 UNIT PLANT "Did Wonders"

Last Summer
Built in Various Sizes



It is the
**MOST EFFICIENT
EVAPORATOR**

It dries "Fancy" Dried Fruit of all kinds in record time, which brings "Fancy" prices, with low production cost. *None "just like it." None "just as good."*
It makes Apples at 8c dry pound worth \$15 per green ton.
PERFECT CONTROL OF TEMPERATURE, HUMIDITY AND CIRCULATION.

Inquire

1005 CHAMBER OF COMMERCE, PORTLAND, OREGON.

Paulhamus Visits Yakima Valley

Mr. W. H. Paulhamus, manager of the growers' organization recently formed at Tacoma, spent Friday and Saturday, the 26th and 27th of February, in the Yakima Valley. On Friday he addressed a few of the large districts and on Saturday gave an address in North Yakima. In every district the attendance was phenomenal and Paulhamus was enthusiastically received. On Saturday afternoon he addressed the fruit growers of Yakima Valley in the Armory building, which seats 2,000 persons. Every chair was taken, with standing room only. Mr. J. W. Lavigne, sales manager for the Price fruit grader, who

stopped off at Hood River for a few hours, stated he never saw an audience before in his life that was more enthusiastic. Mr. Lavigne said, "The fruit growers did not applaud Paulhamus, they cheered him." One large fruit grower at the meeting, who had shipped ten cars of high class fruit independently and received twenty-two cents per box net, was asked if he would join the Fruit Growers' Conference and adopt the Tacoma plan. He replied, "Do you think I am fool enough to stay out? I will be there with both feet." Every fruit grower will be requested to sign the following agreement. This is the agreement in Yakima

Valley that will tie every fruit grower in that district to the Tacoma plan. It reads as follows: "We, the undersigned, fruit growers of Yakima District No. 2, consisting of Yakima, Kittitas, Benton and Franklin Counties, in the State of Washington, hereby promise and agree that we will not market or sell our fruit products through any selling agency or dealer who does not affiliate and continue to work in harmony with the Fruit Growers' Council of the States of Washington, Oregon, Idaho and Montana, through its board of control and executive committee."

A New Two-Box Apple Crate

Mr. Paulhamus is carrying with him a new apple crate, which will hold two boxes. It is claimed that by using this crate the cost will be 25 cents less than two boxes of apples packed in the usual manner. It is believed that this box will be adopted for marketing our C grade and cheaper varieties, and will be the strongest factor that can be introduced for low grades and cheap varieties in competition with barrel apples. The crates are made of veneer. They are made open, so they can be nested one inside of another. In this package the apples will be packed jumble pack and can be put up without being graded for size or wrapped with paper. This method of packing, it is considered, will be satisfactory for low grade apples and save considerable in the packing cost. It is estimated that the crate will cost about 15 cents. Two apple boxes cost 20 cents; this would save 5 cents. Two cents saved in the cost of making, 4 cents in freight, 9 cents in packing, 5 cents in paper, 1 cent in nails, making a total of 26 cents saved.

In the March edition the names of some of the delegates to the Tacoma Convention were omitted, which are as follows: J. A. Gellatley, Wenatchee; A. J. Olive, Wenatchee; W. N. Mears, Okanogan; Wm. Hayden, Wenatchee; Wm. Yost, Meridan, Idaho; L. C. Titch-enall, Cashmere, and J. A. Warman, Peshastin.

LESLIE BUTLER, President
TRUMAN BUTLER, Vice President
C. H. VAUGHAN, Cashier

Established 1900

Butler Banking Company

HOOD RIVER, OREGON

Capital \$100,000.00

4% Interest Paid in our Savings Department

WE GIVE SPECIAL ATTENTION TO GOOD FARM LOANS

If you have money to loan we will find you good real estate security, or if you want to borrow we can place your application in good hands, and we make no charge for this service.

THE OLDEST BANK IN HOOD RIVER VALLEY

LADD & TILTON BANK

Established 1859

Oldest Bank on the Pacific Coast

PORTLAND, OREGON

Capital \$1,000,000.00

Surplus 1,000,000.00

Officers:

W. M. Ladd, President
Edward Coochingham, Vice President
W. H. Dunkley, Cashier

R. S. Howard, Jr., Assistant Cashier
J. W. Ladd, Assistant Cashier
Walter M. Cook, Assistant Cashier

INTEREST PAID ON TIME DEPOSITS AND SAVINGS ACCOUNTS

Accounts of banks, firms, corporations and individuals solicited. Travelers' checks for sale, and drafts issued available in all countries of Europe.



“See the Joint — That’s the Point”

Rear view Security Step Joint

Security 8-ft. Tripod

SECURITY ORCHARD LADDERS

YOUR PROBLEM

—to readily replace worn-out steps in your orchard ladders without weakening the sides or losing the rigidity so necessary to the user’s safety and efficiency.

YOUR ANSWER

—is ready if you are one of the 4500 growers in 89 Coast fruit sections who use Security ladders, equipped with Security steel step-joints. These growers, scattered over four states, saw that the additional first cost of the Security would be returned to them, with interest, in the form of better and longer service. Their neighbors are buying Securities now.

ILLUSTRATED Furnishes all the details—length, width, weight, price and name of the nearest of the 89 dealers.

J. B. PATTERSON
82 Franklin Street OAKLAND 157 Union Oil Building LOS ANGELES

Position Wanted as Companion to a Lady of Refinement

Clever needle woman; will take entire charge of wardrobe and household sewing. References.

Box HL care Better Fruit.



Healthy Trees Perfect Apples

when you spray with

“SCALECID”

—the spray that’s endorsed the country over as “The one great dormant spray.” Mixed 1 to 15, it kills every scale it reaches or you get your money back. Guarantee with every package. It’s easily prepared, non-corrosive and non-clogging. 1 bbl. equals 30 bbls. lime sulphur. Destroys eggs, larvae and fungi in dormant state. Simple, safe, economical. Send for free booklet, “Scalecide the Tree Saver.” Write today, to Dept. D

B. G. PRATT CO.
50 Church St., New York City

PORTLAND SEED COMPANY

PORTLAND, OREGON
Northwestern Agents
Pratt’s “Scalecide”

Orders and inquiries will have prompt attention.

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

Fruit Pools in the Yakima

The Yakima County Horticultural Union has closed a number of pools on different varieties of fruits, which will be read by the fruit growers in other districts with much interest. The pools on winter apples have not yet been closed, but the prices realized on early fall apples and other varieties of fruits, as indicated in a report rendered, which is given below, will prove interesting. Prices realized, net to the union, and the tonnage handled were:

Peaches—219,764 boxes, all varieties	\$.02777
Bartlett Pears—28,217 boxes Fancy	.8908
9,276 boxes “C” grade	.53
37,493 boxes average	.8007
Apricots—10,288 boxes	.69
Tragedy Prunes—7,716 boxes	.85
Clapps Favorite Pears—689 boxes Fancy	.81
17 boxes “C” grade	.57
Flemish Beauty Pears—918 boxes Fancy	.80
326 boxes “C” grade	.61
Clapp Pears—189 boxes Fancy	.955
172 boxes “C” grade	.79
Fall Butter Pears—445 boxes Fancy	1.00
91 boxes “C” grade	.75
Anjou Pears—118 boxes Extra Fancy	1.79
500 boxes Fancy	1.55
273 boxes “C” grade	1.28
Winter Nells Pears—897 boxes Fancy	1.45
775 boxes “C” grade	.96
Transcendent Crabs—3,080 (pear) boxes	.96
Hyslop Crabs—172 boxes	.80
Jonathans—18,152 boxes Extra Fancy,	
4 and 4½	.83
11,132 boxes Fancy, 1, 4½ and 5	.66
6,527 boxes “C” 4, 4½ and 5	.52
General average	.725
Grimes Golden—5,136 boxes Extra Fancy,	
4 and 4½	.67
1,632 boxes Fancy, 1, 4½ and 5	.57
2,880 boxes “C,” 1, 4½ and 5	.50
General average	.60
Fall Apples, assorted varieties—16,181	
boxes Extra Fancy and Fancy, 4, 4½	
and 5 tier	.70
“C” Grade Apples—33,184 boxes, all	
varieties and sizes	.57

The union’s handling charges are 10 cents per box on apples and pears and 5 cents per box on peaches, apricots, prunes, etc., which must be deducted from the foregoing prices to ascertain the prices net to the grower.

All Farm Products Low, As Well As Apples, Except Wheat and Meat

The following crop report was issued by the government in February: While it has not put any extra dollars in the pockets of the apple growers for the crop that has been sold at extremely low prices, it will at least assure them that the apple grower is not the only kind of farmer who has had his troubles this year. The report is very interesting and shows the gradual decline in prices of farm products on the articles mentioned, such as apples, cabbage, potatoes, hay, cotton and horses. It is well worth studying, and careful comparison and observation should be made. From the government report it is evident that something is wrong with farming conditions or the methods of marketing the farmers’ and fruit growers’ crops. It is up to the fruit growers and farmers to study the situation and solve the problem. The following are the average prices for different products of the farm for the years 1910 to 1914:

On December 15—Apples, per bushel:
1914, 67c; 1913, \$1.04; 1912, 73c; 1911, 86c; 1910, \$1. Cabbage, per cwt.: 1914, \$1.26; 1913, \$1.75; 1912, \$1.45; 1911, \$1.83; 1910, \$1.41. Horses, per head:



Once Grown Always Grown

Maule’s Seeds

Endorsed by more than 450,000 progressive gardeners as the best ever

Our new Seed Catalogue contains everything good in seeds, bulbs, small fruits and plants, 750 illustrations; 176 pages. Free to any one sending us a request for it. Send for it today.

WM. HENRY MAULE, Inc.
2178 Arch Street Philadelphia, Pa.


Send 10 cents, mention this paper, we will enclose in the catalogue a packet of the above GIANT pansy.

Expert Horticulturist

Open for Engagement

College training; executive ability; wide practical experience; satisfactory references.

HORACE J. SIMONS
Worthington, Ohio



Arsenate of Lead

The widely increasing demand for our unsurpassed product shows that quality is now properly appreciated by the expert grower. The high standard of 16% Arsenic Oxide, together with great body or covering power, will be rigidly maintained in all of our shipments.

ARSENATE OF LEAD
Paste and Powdered.

BORDEAUX MIXTURE
Paste and Powdered.

CAL-ARSENATE
(Pure Calcium Arsenate)
Paste and Powdered.

Riches, Piver & Co.

NEW YORK

Apple Growers’ Association
Hood River, Oregon

Pfaff, Francies & Page
Wenatchee, Washington

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT



The New Era Auto-Irrigator—Works While You Sleep

The thing you have been looking for—something which will distribute your water into furrows with a uniform rate of flow and not require your continued attention. It has been thoroughly tested for two years and its users speak in enthusiastic praise of its work. The more rough and more difficult your land is to irrigate the more the advantages of this irrigating device appear. It consists of a canvas hose with apertures along one side, spaced about 20 inches apart, from which the water escapes into the furrows. These apertures are fitted with a regulating device to regulate or stop the flow of water. The hose is tapering in form to conform to the gradually diminishing volume of water. The standard size is 75 feet long and 6 inches in diameter at large end, and tapers to 1 1/2 inches diameter at small end, which is open. It has a capacity of about one-half cubic foot of water per second when the water in the ditch is raised about 8 inches above the level of the land. This will require that your ditch banks be thrown up a little higher than they generally are at present. The hose is easily and quickly set in operation by connecting it with a pipe set into the ditch bank. The end of pipe in the ditch has a cylindrical screen fitted over it to prevent the entrance of leaves, etc. The hose is light and when one strip of land is irrigated it is easily carried to the next strip. Where more than one hose is needed they can be used in a series, according to the number needed. This device will pay for itself in two months' use or less, besides saving from 20% to 50% in your water and producing better crops by the uniform application of water, and also preventing your land from washing. For fuller details send for descriptive circular. Will make a special discount on the first five irrigators bought and used in any community. We desire implement dealers to sell this great labor and water-saving device in every town, or agents to demonstrate and sell it. Good money for live men. Can be mailed anywhere in the United States by parcel post.

For particulars and prices address

THE AUTO-IRRIGATOR MFG. CO., Box 609, Denver, Col.

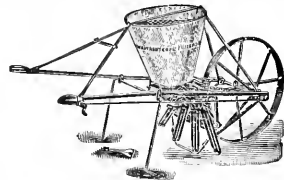
A "SURE THING" INVESTMENT FOR THE FARM

There is no element of chance about using good fertilizer. The question for you to decide today is "What Fertilizer to Use."

For many years, orchardists and growers of various kinds of crops have found the special mixtures of

DIAMOND FERTILIZER

to be reliable and satisfactory because they are honestly made, and sold on the basis of a correct analysis of available elements.



FREE FERTILIZER BOOKLET

will give you a better idea of the kinds of fertilizer we make and the various blends we supply. Ask for Booklet 205.

McWHORTER FERTILIZER DRILL For the simple, superior distribution of Commercial Fertilizers. Well made, easily operated.

Ask for our general catalog No. 205 for complete description of this economical, low-priced drill, which you will find an immense saving to you. It not only prevents waste of fertilizer, but insures even distribution at the greatest speed.

PORTLAND SEED COMPANY
PORTLAND, OREGON



1914, \$130; 1913, \$135; 1912, \$139; 1911, \$134; 1910, \$141.

On January 15—Potatoes, per bushel: 1914, 49.7c; 1913, 68.4c; 1912, 50.6c; 1911, 84.5c; 1910, 54.1c. Hay, per ton: 1914, \$11.29; 1913, \$12.12; 1912, \$11.86; 1911, \$14.85; 1910, \$12.24. Cotton, per pound: 1914, 6.6c; 1913, 11.7c; 1912, 12.2c; 1911, 8.4c; 1910, 14.4c.

Prices paid for apples per bushel to producers in various sections of the United States on December 15 during the years 1914 and 1913 are as follows: Northwest (average), 77 1/2c and \$1.10; New York, 50c and 97c; Virginia, 50c and 93c; Michigan, 55c and 85c.

British Columbia Fruit Growers

The British Columbia Fruit Growers' Association held its annual meeting in Agricultural Convention Hall, in the Parliament building at Victoria, January 26. The meeting was largely attended and the addresses received with enthusiasm. Many subjects were discussed by the fruit growers who were present. The membership has reached the grand total of 876. In addition to the fruit growers' problems, Mr. F. W. Peters was called on, who gave a very intelligent address in reference to transportation matters. With true British pride the fruit growers of British Columbia gave Sir Richard McBride an enthusiastic welcome when he appeared before the meeting to address that body. In his speech he assured all of the members that the government would give its most earnest attention to the various problems connected with the fruit industry of British Columbia with a view to bettering their condition in every way possible.

North Pacific Fruit Distributors Cuts Salaries

Announcement has been made that the trustees of the North Pacific Fruit Distributors has made a sweeping reduction in salaries from top to bottom of 20 per cent. When it was found that the income from the tonnage was not sufficient to pay the overhead expenses and salaries of the officials and employees for the years 1914-15 the trustees decided to reduce expenses in order to meet the situation by reducing every possible expense and cutting salaries. This is a move in the right direction and such a step will certainly be appreciated by the many fruit growers who are shipping through this organization. The grower has troubles with his own expenses and low prices and therefore has been compelled to economize in every way possible, consequently it will afford the grower considerable satisfaction to know that the marketing concerns are endeavoring to economize.

The twenty-fourth annual report of the Experiment Station of Washington State College, Pullman, issued by the director, is very instructive, interesting and original. It is a testimonial indicating the excellent work and proceedings on the part of the Station.

Buy It Now

Say,
Do you remember when you were
a kid,

How they used to tell you
About throwing a pebble into a pond.
And how it made a ripple
That went on, and on, and on, and on
Until it reached the distant shore,
Or something like that?

And when you got big enough
You went to the minstrel show
And saw the end man

And the middle man
Show how a quarter of a dollar
Paid off ten dollars' worth of debts
In about five minutes,

By passing from Tambo to Bones,
And from Bones to Rastus,
And from Rastus to Ephraim
And from Ephraim to Lijah,
And so on around the half circle?
And then, when you were sent up
To college,

The high-brow Professor
Tried to explain the same thing?
You remember?

Well,
This is no talk on Political Economy
Or anything like that;
It's just a gentle hint

To the effect that Right Now
Is a good time for you
To start a little ripple of your own,
A good time

To start your dollars
Moving around the circle.
Pay off your debts.

Buy what you need,
And buy it now.

Get things started,
Put money in circulation.

That's good sense,
And patriotism,
And good business.

Every ripple in the pond,
No matter how small,
Helps break the stagnation.

Get busy
And make a splash,
"Buy it now"

And get your money back.
—Marco Morrow in the Topeka
Daily Capital.

Yakima to Have a Cannery

The American-Hawaiian Fruit Canning Company, it is stated, will let the contract for a building 80x100 feet, to cost about \$10,000, and having a capacity of 2,000 cases per day. This announcement has been made by Mr. Frank P. Zell. It is stated that Mr. Zell will remain in North Yakima for the purpose of superintending the construction and preparing the plant for active operation. In addition to canning fruit it is stated that the cannery will put up many kinds of vegetables, such as asparagus, rhubarb, beans, pumpkin, peas, corn and spinach, and also all kinds of small fruits. Mr. Zell, who was formerly an employe of the California Fruit Cannery Association, has spent thirty years in the canning and preserving business. It is generally understood he will take the management in connection with the cannery.

Let us furnish you estimates
on your



Fruit Labels

DISTINCTIVE AND ARTISTIC DESIGNS FURNISHED
THE SIMPSON & DOELLER COMPANY
NORTHWESTERN BANK BLDG.
E. SHELLEY MORGAN, N. W. MANAGER. PORTLAND, OREGON.

SIGN UP

Mr. Grower :

If you think—

all sellers will make the same returns beginning with the 1915 crop, or it makes no difference who or which sells your fruit hereafter—

you may be sorry.

The Growers' Council is not going to make efficient sellers out of weak ones. It is simply going to make it plainer than ever before which are weak and which are strong. It's up to you to help the situation. Prove yourself a true co-operator by selecting a reliable selling agency and signing up your crop early. Do it now!

Northwestern Fruit Exchange
Stuart Building, SEATTLE, WASH.

Kirstin One Man Stump pullers Cost Less



Get my special low prices and free catalogue before buying a puller. Six models from \$37 up. Write at once to

LIVE AGENTS WANTED EVERYWHERE. APPLY NOW.

A. J. KIRSTIN CO.
231 Commercial St., Salem, Or.

There's \$Dollars\$ Under Your Stumps

PORTLAND, OREGON

PORTLAND HOTEL

The hotel which made Portland, Oregon, famous
Most Desirably Located. In the Center of Shopping and Theatre District
Covers a City Block

Broadway, Sixth, Morrison and Yamhill Streets

EUROPEAN PLAN—\$1.00 per day and upward

Write for Portland Hotel Booklet

Geo. C. Ober, Manager

Orengo Prune Trees Cheap

Myrtle Creek, Oregon, November 26, 1914.
I feel like saying a few words to you on paper in regard to my Italian Prune trees. I am more than pleased with them. Really they are better than I expected. I cannot speak too much in praise of your company for such good trees. They are of good size, good height and good roots. Everyone that I talked with that ordered from you is well pleased.
(Signed) J. A. Copeland.

"ORENGO TREES" are universally known for their high standard of quality, and particular planters prefer to buy where they can depend upon quality, reliability and satisfaction. When you want really good trees at right prices, you can't do better than with us. Try it.

Orengo Nursery Company

ORENGO, OREGON
SUCCESSFUL salesmen wanted.


It is also stated that it is the intention of the company to operate an evaporator for the purpose of evaporating apples.

Bordeaux Mixture

Peach leaf curl may be controlled by spraying at the right time of year. Bor-

deaux mixture (6-6-50) is the best spray to use, but if scale or peach twig miner are present, commercial lime-sulphur (1-12) is recommended. The right time of year for application is while the buds are swelling, but before any of the tender green leaf tips begin to emerge. It is better to spray early than even a few days late. About the last of February or the first of March will be about right in the Willamette Valley. The spray must be applied so as to cover all the buds thoroughly. This will require an outfit giving good pressure. A good nozzle is necessary and a great deal of care must be observed. If the job is well done, however, and at the right time, the leaf curl will be eradicated. Failure will probably come if the recommendations regarding lime and method of application given above are not rigidly adhered to.

The Oregon Agricultural College, Corvallis, have issued a very interesting and complete bulletin, which is "A Report of the Hood River Branch Experiment Station." The same can be obtained on application by addressing "The Director of the Experiment Station, Corvallis, Ore."



LILLY'S SEEDS

Lilly's Seeds are not an experiment—they are tested in our laboratory and trial grounds. They are specially adapted to the Pacific Northwest and are true to name. Our valuable catalogue will be sent free on request. Dealers sell Lilly's Seeds. If not, write, The Chas. H. Lilly Co., Seattle

Build a Better Home for Less—

Do away with all middlemen's profits—I can cut the cost of your architect, contractor and retail lumber dealer's profit by my

New System of Ready Cut Houses

The houses that come to you cut to fit—ready to put together, with full instructions—an intelligent boy can build one.

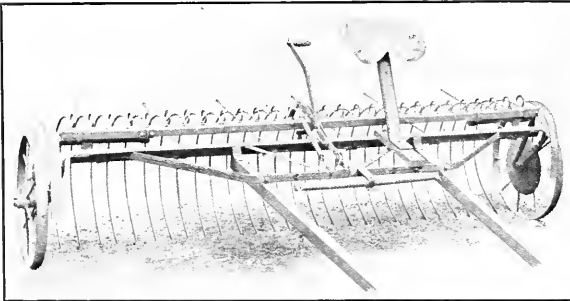
Write for my FREE BOOK No. 16.

J. BRYSON MOORE

1020 Northwestern Bank Bldg. PORTLAND, OREGON



This 4-Room House Cost \$394.24



The New Low-Down Orchard Rake

The Only Rake that Rakes Under Bearing Trees

DESIGNED for the harvesting of cover crops in the orchard, this implement should be investigated by you. See it at any P. & O. Agency or write to us for descriptive literature.

Built so low that the branches will be free from interference; driver's seat at one side, well out of the way; rake 9 feet long, allowing of good sweep under trees; strong enough for heavy alfalfa and clover crops; made of steel and malleable; wheels 26 inches in diameter, provided with shields to prevent branches catching between axle and wheels; also shields in body of the wheels, to prevent hay from falling into wheels; hand lift, provided with spring of proper tension to raise teeth easily.

Designed by a practical orchardist and sold at a price which enables it to pay for itself in tree damage, time and hay saved. Write for Circular 10.

Since 1892, the name of PARLIN & ORENDORFF PLOW COMPANY has stood for good implements, honestly made. Through our many agents, we insure you good service, wherever you are.

PARLIN & ORENDORFF PLOW COMPANY

OF PORTLAND, OREGON

Agents throughout the Northwest

Fruit Growers Profit by Dairying—

Hundreds of fruit growers are turning to dairying as the most profitable side line. Oregon's dairy products last year exceeded \$18,000,000.00.

Even if you have only a few cows, our Service Department can give you valuable ideas and assistance. We carry the most complete line of Dairy Supplies in the Northwest.—Sole Oregon agents for



Barrel Churn



Buhl Milk Can

Simplex Separators
Buhl Milk Cans
Entire Simplex Line
Paper Cutters
Cutters

Inspect our modern dairy equipment.

Free Catalogs

gladly sent upon request.

MONROE & CRISSELL

The Simplex Line

MADE IN OREGON—OCCUPY FIRST RANK THROUGHOUT THE NORTHWEST

143 FRONT STREET PORTLAND, OREGON

Practical PUMPS
Permanent — 300 styles —
Powerful — one for every
 purpose: hand, power, single-
 acting, double-acting, force, lift;
 for shallow wells, deep wells,
 cisterns, etc. Backed by 25 years
 pumpmaking experience.

Our service Department helps
 you select right pump or system
 — free. Our free book, "Water
 Supply for the Country
 Home," fully describes

GOULDS REBELL PUMPS
 — simple, durable, efficient. Send for your
 free copy today.

The Goulds Mfg. Co.
 Main Office: 67 Water
 Street, New York
 Branches:
 Boston
 Chicago
 London
 Atlanta



The Value of a Cannery Pay Roll

It is stated that the pay roll of the Northern Pacific car shops in the city of Tacoma during the biggest month in 1914 was \$68,000. The Puyallup-Summer cannery, under the management of Mr. W. H. Paulhamus, had a pay roll of \$238,000 during the biggest month of the season of 1914. Every fruit district ought to have a cannery. The pay roll would be a big factor in the prosperity of every fruit growing community. It would help all kinds of business and afford employment for many people, giving them an opportunity to earn extra money during the canning season. Every fruit growing section ought to have a cannery, evaporator, vinegar plant or cider mill. Some fruit sections ought to have all of these, and our comment is that it is too bad that each district in addition cannot have Paulhamus to manage its cannery.

Adopts New Organization Plan

At the annual meeting of the Wenatchee Valley Fruit Growers' Association, after the Seattle Convention, the plan of the Fruit Growers' Council as originally outlined at Seattle was presented to the meeting and was received with such satisfaction that it was endorsed by this association. This speaks well for the new movement. If the Wenatchee Valley Fruit Growers' Association was so well satisfied with the Seattle plan as to adopt it they will be much better satisfied with the Tacoma plan, which without question means its adoption by this association.

The Western Fruit Jobbers

The eleventh annual convention of the Western Fruit Jobbers, held in Los Angeles the third week in February, was the most successful and the largest meeting ever held by this organization. Memphis, Tennessee, was selected as the next convention city. The entertainment committee of Los Angeles spent \$25,000 in entertaining the Western Fruit Jobbers' Association.

Orange Growers Get Low Prices

It is stated that orange growers have been hit hard, if not harder than the apple growers of the Northwest, by low prices. Orange growers in Florida who refused 60 cents per box on the trees, it is stated, now are unable to obtain 30 cents. One Florida grower made a consignment of 206 boxes, for which he received \$15.50. He figures his actual loss on the shipment at \$134.50.

"The railroad is our common high road; it is not a luxury; it is not a concern in which the farmer and the manufacturer alone are interested; it is an essential to the commercial life of our people, almost as necessary as the land itself. If we have too few railroads, giving meager service and following the false policy of exacting high tolls, the nation's growth will be by so much retarded."—Hon. Franklin K. Lane, Secretary of the Interior.

English Tested Flower, Vegetable and Grass

SEEDS

Write for Catalog "B"

CARTER'S TESTED SEEDS, Inc.

DEAN BALLARD, Mgr.
 3000 Arcade Building SEATTLE



I'LL SHIP YOU THIS "Cant-Sag"

Gate On 30 Days' Trial

I prove the value of my "CANT SAG" gates before you pay. I want you to see for yourself that they can't rust and that you can't buy or make a better gate, no matter what material you use. My gates are

Guaranteed For 5 Years
 rust free—just three times as long as iron, gas pipe or wire. Any size you want, sent complete. People taking, or you can buy just the Gate Steels, hinges, bolts, etc. and write now for free catalog and prices.

ROWE MFG. CO. 5109 Adams St., Dalesburg, Ill. A. V. Rowe, Pres.



YAKIMA GROWN
 is the Best Guarantee

TREES

Fruit and Ornamental
 ROSES, SHRUBBERY, Etc.

Send for Catalog and Prices

Yakima & Columbia River
 Nursery Co. North Yakima Washington

Ideal Gopher Trap

Only Trap guaranteed to catch large or small gopher. Being round with thin edges gopher walks into trap before detecting anything in runway. Positive grip. Jaws always hold. 100 per cent efficient—catches gopher every time. Far safer and surer than poisons or gas. Farmers say it's worth dozen other makes. Price 50c. If your dealer can't supply you, will besent upon receipt of 60c; two traps for \$1.10; six for \$3.00. Money back if not satisfied.

E. J. CHUBBUCK CO.
 Dept. C
 731 Market Street SAN FRANCISCO, CAL.



Automatic Anti-Frost Alarm

Infallible, accurate; better and ten times cheaper than an alarm thermometer. Will give the fruit grower a timely warning of approaching frost. Can be set to ring bell at any temperature desired.

Price \$4.00 complete.

THE ANTI-FROST STOVE CO.
 621 Main Street, CINCINNATI, OHIO



DIRECT TO CONSUMER

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

39-INCH FENCE 28 CENTS A ROD

Made of high-grade galvanized wire. Write for catalog and prices


NATIONAL FENCE COMPANY
 Columbia and Water Sts. PORTLAND, ORE

BOOK ON DOG DISEASES
 And How to Feed

Mailed free to any address by the Author

H. CLAY GLOVER, V. S.
 118 West 31st Street, New York

America's Pioneer Dog Remedies



Portland Wholesale Nursery Company

Rooms 301-302 Stock Exchange Building
 Corner Third and Yamhill Streets
 PORTLAND, OREGON

W. van Diem

Lange Franken Straat 45, 47, 49, 51, 61
 ROTTERDAM, HOLLAND

European Receivers of American Fruits

Eldest and First-Class House in this Branch

Cable Address: W. van Diem
 A B C Code used; 6th Edition

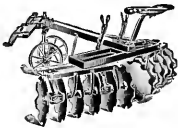
Our Specialties are
Apples, Pears, Navel Oranges

White Salmon Valley Fruit Growers' Union

At their annual meeting the White Salmon Valley Fruit Growers' Union elected Mr. A. B. Groshong president, Mr. F. S. Baker vice president and Mr. F. O. Charles secretary. The other members on the board are Mr. John B. Humphrey, Mr. R. Burdick and Mr. H. C. Lowden.

Puyallup and Sumner Fruit Growers' Association

Under the management of Mr. W. H. Paulhamus the Puyallup and Sumner Fruit Growers' Association put up an output in the cannery of fourteen train-loads of twenty cars each. When Mr. Paulhamus started the association had a capital of \$2,500. There is now a surplus of \$100,000.



Those farmers who make careful and intelligent study of tillage methods know that they can pulverize their soil finer, cover more acres, and make more money by using

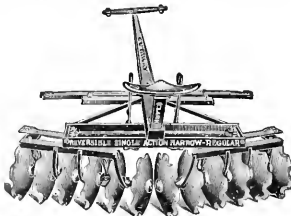
Cutaway
(CLARK)

Disk Harrows and Plows

If you have not yet obtained the facts about CUTAWAY (CLARK) tools, go at once to your dealer and ask him about them. If he doesn't sell CUTAWAY (CLARK) farm implements write us for catalog and prices. We ship direct where we have no agent. In our catalog you will find just the style machine for your needs—and more—you'll find just the size for the power you have. It seldom costs you more to buy a CUTAWAY (CLARK) machine—a machine especially built for intensive tillage—than it does to buy an ordinary tool.

If your dealer doesn't have in stock what you want he or you can get it quick from the factory

THE CUTAWAY HARROW COMPANY
Makers of the original CLARK disk harrows and plows
940 Main Street Higganum, Conn.





IT PAYS TO SPRAY MYERS WAY

Take care of your fruit trees—They are a wonderful source of profit—Every tree in your yard or orchard should pay dividends in perfect fruit through protection by spraying MYERS WAY

MYERS SPRAY PUMPS
Bucket, Barrel and Power, and Nozzles and Accessories are all proven and cover every spraying need—A Pioneer Line of Standard Pumps—guaranteed for effective spraying and equally serviceable for whitewashing, disinfecting, sprinking, fighting fires, etc.
Our Spray Catalog—just off the press—shows complete line, and gives late Spray Calendar with instructions How and When to Spray. Your copy is waiting—write today for it and ask for name of our dealer
F. E. MYERS & BRO 120 Orange St. Ashland, Ohio
PUMPS—RAY TOOLS—DOOR-HANGERS



Red Crown has lots of "pep" but burns clean.

RED CROWN

the Gasoline of Quality

is refinery gasoline—every drop. It's the best gasoline the Standard Oil Company can make. Dealers everywhere.

STANDARD OIL COMPANY
(California)
Portland



Burpee's Seeds Grow

THE truth of this famous slogan is proved by thousands of pleased and permanent customers. The Burpee Idea of Quality First—"to give rather than to get all that is possible"—combined with efficient service, has built the world's greatest mail order seed business. We deliver seeds free by parcel post, and have not advanced prices because of the war. Write today for **Burpee's Annual**, the "Leading American Seed Catalog" for 1915. It is mailed free. **W. ATLEE BURPEE & CO., Burpee Buildings, Philadelphia**

Round Trip Fares Reduced
to the

Two World Expositions

At San Francisco and San Diego, which permit stop-overs at all points in either direction, are now on sale at greatly reduced rates
via the

Scenic Shasta Route

Three Fine Trains Daily

Stop-Overs on One-Way Tickets

Ten days' stop-over will be allowed at San Francisco and Los Angeles on one-way tickets sold to Eastern Cities when routed via the Southern Pacific.

"California and It's Two World Expositions"

A new booklet describing the trip from Portland to San Diego including the two Expositions, the scenic beauties of Oregon, the Siskiyou, Shasta Mountains, San Francisco, the beach and outing resorts of California. Free on application to nearest Agent.

SOUTHERN PACIFIC

John M. Scott, General Passenger Agent, Portland, Oregon

**"WE STARTED RIGHT
AND WE ARE RIGHT"**

6458 Acres
IN OUR ENTERPRISE
4178 Acres
ALL IN APPLES

Nine miles continuous rows of trees, the largest apple orchard ever planted. All are one, two and three years old; the two and three year old all sold, amounting to over 3,000 acres.

We are now offering our one year at terms to suit you.

We give five years', from date of planting, free care. Our company is unlike others in the feature of staying with our purchasers after the free care period. Our plans make our interests mutual; we all work together for the interest of all.

Our Booklet will give you a simple statement of our dealings and methods. Write us for information.

DUFUR ORCHARD COMPANY
Northwestern Bank Building
Portland, Oregon

**The
First
National
Bank**

Hood River, Oregon

**Capital and Surplus
\$135,000**

**4% Interest Paid on Savings
and Term Deposits**

**F. S. STANLEY, President
E. O. BLANCHAR, Cashier**

**Annual Report of the Puyallup and Sumner
Fruit Growers' Association**

The Puyallup and Sumner Fruit Growers' Association was incorporated under the laws of the State of Washington March 22, 1902, with a capital stock of \$2,000. It is conducted entirely along co-operative lines, with a membership of more than 1,600 hundred growers, and has canneries with a floor space of more than 125,000 square feet at both Puyallup and Sumner, in the Puyallup Valley, Washington, between Seattle and Tacoma, on the main lines of the Northern Pacific, Great Northern, Chicago, Milwaukee & St. Paul and Oregon-Washington railways. Financial condition at close of business December 31, 1914, was as follows:

Capital stock		\$ 2,503.00
Surplus December 31, 1913.....	\$ 79,004.57	
Net earnings during 1914.....	25,406.93	
Surplus December 31, 1914.....	\$104,411.50	
*Less depreciation on equipment account authorized by Directors.....	4,411.50	
Leaving net surplus December 31, 1914.....		100,000.00
Capital and surplus December 31, 1914.....		\$102,503.00
Fire insurance (in best companies).....	\$288,500.00	
Accident insurance, covering boiler accidents.....	25,000.00	

FINANCIAL STATEMENT

Cash on hand January 1, 1914.....	\$ 23,910.31
Total cash receipts year 1914.....	1,128,676.12
Total checks issued year 1914.....	\$1,152,586.43
Cash on hand January 1, 1915.....	\$ 28,901.65
Total receipts shown above do not include transportation paid on shipments at receiving end, estimated at \$200,000, making a total year's business of considerably over \$1,300,000.	

ASSETS

Cash in banks.....	\$ 28,644.37
Cash in office.....	260.28
Accounts receivable.....	50,920.56
About \$34,000 of the above total is covered by sights drafts against bills of lading on canned goods en route.	
Merchandise, consisting of corn, wheat, oats, hay, bran, shorts, flour, etc.	19,121.48
Fruits in cans and barrels, part of which is sold but undelivered, including also empty cans, cases, barrels, labels, etc.	156,594.99
Total liquid assets.....	\$255,538.68
Puyallup canning plant.....	\$47,079.10
Machinery and equipment, Puyallup.....	15,606.81
Total Puyallup plant.....	62,685.91
Sumner canning plant.....	\$12,718.92
Machinery and equipment, Sumner.....	5,361.13
Total Sumner plant.....	18,080.05
Feed store equipment, Puyallup.....	\$2,209.66
Feed store equipment, Sumner.....	630.93
Total equipment, both stores.....	2,840.59
Insurance paid in advance.....	1,875.80
Total assets.....	\$311,021.03

LIABILITIES

Money borrowed from banks.....	\$60,000.00
Deposits of members.....	68,548.59
Accounts payable.....	15,216.03
Express certificates.....	666.08
Interest accrued and unpaid.....	2,412.28
Total liquid liabilities.....	\$146,842.98
Capital.....	\$ 2,503.00
Surplus, December 31, 1913.....	\$79,004.57
Net earnings, 1914.....	25,406.93
Total capital and surplus.....	106,914.50
Estimated disbursements to members when all goods are sold.....	87,263.55
Total liabilities.....	\$311,021.03

SUMMARY

Liquid assets.....	\$255,538.68
Liquid liabilities.....	146,842.98
Liquoid assets in excess of liabilities.....	\$108,695.70
Liquid liabilities.....	\$146,842.98
Cash on hand.....	28,901.65

Showing 20% of liquid liabilities on hand in cash, equal to bank requirements. *The Directors voted to charge off to depreciation from equipment account sum of \$4,411.50, leaving a net surplus of \$100,000.

†From the surplus shown must be deducted the undetermined earnings due H. A. Baker in the barrel department for the years 1912 and 1913, based upon the profits derived from fruit in barrels when all is sold, which the books show to be nothing.

Stark Bros. Nursery of Louisiana, Missouri, is mailing out its new catalog, which is very attractive, showing a cut on the cover of the Delicious apple.

The California State Committee of Horticulture is mailing out a very interesting and instructive booklet on "Apple Growing in California."

HAMILTON, MADE SPRAYING HOSE
 WILL SPRAY YOUR TREES FOR SEVERAL YEARS FOR ONE COST

1/2-inch Perfect Spray Hose, 6 p'y., 50-foot pieces compiled, or 1/2-inch STERLING-WORTH Reel Spray Hose in 500-foot lengths.
 Either grade will stand 600 lbs. test and will be satisfactory for any power or hand sprayer.
 \$15.00 for 100 feet. Cash with order.
 Freight paid to your station. Shipped direct from factory the day the order is received.
HAMILTON RUBBER MFG. CO.
 TRENTON, N. J.

Harvey Bolster Springs
 RACING make any wagon a spring wagon. Prevent damage to eggs, fruit, etc., on road to market. Soon save cost—produce brings more—wagon lasts longer.
MADE LIKE FINEST AUTO SPRINGS
 Very resilient and durable. The standard springs of America since 1899. 40 sizes—fit any wagon—sustain load up to 5 tons. If not at dealer's, write us. Catalog and list of proof free.
HARVEY SPRING CO., 704 - 17th St., Racine, Wis.
GUARANTEED

CAXLE & S
 LARGE HANDY GREASE CAN
 SMALL CAN
WHITTIER COBURN CO. S.F. SOLE MFRS.

The Truth About Poultry



Get the facts by reading the **Western Poultry Guide**

A practical treatise on Western Poultry Culture, written by twelve successful Western poultrymen. Complete in twelve parts, printed in one volume. Real work, with real poultry, on real Western poultry farms. The successful methods of twelve of the greatest poultrymen in this country, told in their own words. What others have done you can do. This book tells how. We offer this book free to any reader of our paper. Here is the way to get it:

OUR SPECIAL OFFER.

The Western Poultry Guide, in book form, and the Northwest Poultry Journal, one year, for only 50 cents.

Our paper is handsomely illustrated, practical, progressive and up-to-date. Fifty cents a year, in advance. Three months' trial subscription 10 cents. Sample copy free. Address

NORTHWEST POULTRY JOURNAL
 SALEM, OREGON

Central Selling Agency, Etc.

Continued from page 12

lows: 1. All fruit shall be graded and packed under uniform grading rules and careful and uniform inspection. It is desired and agreed that Extra Fancy, Fancy and C grade, or whatever names used shall have the same meaning in the rules of our respective organizations, and that all fruit to be handled shall reasonably conform thereto. 2. It is agreed that our handling contracts with growers shall be uniform in provisions except as may be mutually satisfactory to all parties hereto. It is understood each organization going into the central selling agency shall finance its own members or clients and render account sales to them direct in the same manner as at present. 3. It is agreed that all fruit shall be handled at an estimated cost per ear of not to exceed thirty dollars, and that any surplus accruing shall be rebated to our respective organizations in proportion to the amount and variety of fruit shipped. 4. It is agreed, as a general policy, that the central organization shall handle all fruit as agents for growers, not buying except to fill orders and steady the market. 5. It is understood and desired that each organization shall be equally benefited by the central selling organization and all policies shall be adopted with that end in view."

Appeal for Co-operation

By W. H. Panlhamus, Chairman of the Northwest By-Products Committee of Ten.

THE development and progress of the fresh-fruit industry is such that there is positive evidence that canneries, evaporators and other by-product factories are not only a necessity but that they will be established in large numbers in the Northwest during the next two years. There is need for many of such institutions in the fruit districts of the Northwest in order to maintain the fruit business on a sound business basis. Unless these plants are controlled most of them will be started wrong and many will be badly managed; many will be organized where there is not sufficient need and the result will be failures with unnecessary loss of money, time and work. If they are not properly organized the markets will be demoralized, and if not properly managed in the selling end of the business low prices will prevail and the injury be serious to the fruit industry. The Northwest By-Product Board believes that its function is just as much to help control the situation as to help communities start plants for the purpose of taking care of their surplus. In this work the by-product committee wishes the help and co-operation of every existing cannery, evaporator, fruit packer or any kind of a plant for any by-products. This by-product industry should be organized as thoroughly as possible for the purpose of establishing standard packs, reasonable, uniform prices and work co-operatively for the purpose of reaching out for new

Every Month in the Year you can use Conkey's POULTRY TONIC for Young Chicks Growing Stock Molting fowls and Laying Hens

Vigorous birds grow rapidly, fatten up fast, and pay a profit, while weak ones are only an expense. CONKEY'S gives them health and stamina and keeps the organs keyed up to their best without overtaxing them.

CONKEY'S WHITE DIARRHEA REMEDY in the drinking water from the start, may save many of your chicks. 25c and 50c. Send 4c. in stamps for Conkey's Poultry Book. Write to dealers for any poultry cover.

THE C. C. CONKEY CO.
 1111 Conkey Building, Cleveland, O.

Have a CONKEY CORNER in your poultry house

HOME CANNERS All sizes. Used by U. S. Government Schools, Girls' Clubs, Collaborators and Farmers everywhere. For Catalog and Special Offer, write **ROYAL HOME CANNER CO., DEPT. P., ALBION, ILLINOIS**

SASH & DOORS WINDOW TRIM

Buy from Factory and Save Money

We operate our own factory and sell direct to the consumer, saving you the retailer's profit. We make prompt shipment anywhere. Quality guaranteed.

Window trim, like-draw—
 ing 80c
 inside door trim 60c

Cottage front windows \$2.50
 3-cross-panel doors, 15 size 1.10
 Cottage front doors 2.45
 3-ply fir veneer doors 2.00
 Craftsman doors 1.50
 Outside door frames 1.25
 Inside door frames75
 Window frames 1.00
 12-light windows 95c up
 Bungalow sash 75c up

We save you money on Builders' Supplies.

Write for Catalog B1.

O.B. WILLIAMS CO.
 1943 FIRST AVE. SOUTH SEATTLE.

YOU WANT THE BEST SPRAYER

You want to save time, temper, trouble and trees. You want to raise fruit that brings the highest prices. You want to know all about our sprayer before you buy. There is more you ought to know. Do You Want To Know The Price? Write for Catalog 86

REITERSON BROS.
 Manufacturers 182 Morrison St., Portland, Ore.

markets. When this is done the industry will be stabilized and the committee can work with the fruit-product plants toward helping take care of the surplus of fresh fruit in districts where it would otherwise go to waste. Many districts are probably not ready for plants for the reason that the volume is not sufficient. Through organization this industry can work with the railroads to secure proper rates, both by express and freight, for fruit that will permit assembling of the output from communities where the tonnage is not sufficient to load out in car lots. It is the intention of the committee to help any districts where there is not a volume sufficient for a plant; for the purpose of helping to promote the organizing necessary for the buying and financing of such plants. The committee believes that, with the organization of all existing plants, it can do a great deal toward controlling the situation. The subject of by-products has been discussed with the growers by the by-products committee in several sections and several conferences have been held. It is expected that others will follow in the near future. The committee wishes those who are interested give the matter consideration and express their views fully and frankly, either personally to the members of the by-product committee or by correspondence to the manager, Mr. W. H. Paulhamus, whose address is Puyallup, Washington.

The proceedings of the fourth annual meeting of the California Association of Nurserymen, which was held in San Diego, October 15th, edited and compiled by Henry W. Kruckeberg, is being mailed out to nurserymen.

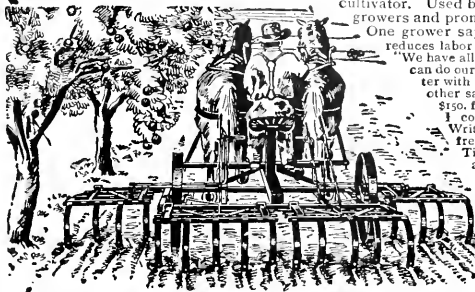
A. R. Weston & Co., Bridgman, Michigan, kindly sent this office their annual catalog. This catalog is devoted to strawberries, blackberries, dewberries and grapes. The color work on the cover page is very attractive.

Fruitgrowers and alfalfa farmers at this season driven with spring work, hardly finding any day long enough to accomplish even a measure of their pressing tasks connected with orchard and field work, are apt to forget the existence of an active, persistent enemy, sleepless and industrious. The squirrel or gopher, native to the Northwest, is one of the most destructive agents the agriculturist has to contend with. Valuable trees are destroyed, alfalfa fields are often ruined, mounds of earth are raised, which interfere with the cutting, irrigation ditches are undermined and damage amounting to millions of dollars in the aggregate ensues. Every effort should be put forth at this season to destroy them. Guns and traps are effective but expensive, in the time they require. Vaccines or virus are of doubtful effect; an efficient poison, preferably a strychnine-coated grain of reliable make, if placed in the burrows of the pests, will accomplish quicker, better and more effective results than anything else, with the advantage that it can be distributed and safely applied at any hour and in a few moments' time.—[Adv.]

FORKNER SPRING TOOTH TILLERS

WORK RIGHT UP TO YOUR TREES

Cultivate entire surface between rows without disturbing boughs or fruit. Does more work—easier and quicker—and leaves better surface mulch than any other cultivator.



Used by thousands of fruit growers and pronounced *invaluable*. One grower says: "The Forkner reduces labor 40%". Another says: "We have all kinds of tools, but we can do our work quicker and better with a Forkner". Still another says: "I wouldn't take \$50. for my Forkner Tiller if I couldn't get another". Write today for catalog and free book—"Modern Soil Tillage"—invaluable to any farmer or fruit grower. Mailed free. Write today.

LIGHT DRAFT HARROW CO.
601 Nevada St.,
Marshalltown, Ia.



"BEST WEED KILLER EVER USED"

The Barker Weeder, Mulcher and Cultivator successfully, in ONE OPERATION, kills weeds and forms a perfect soil mulch

It cuts weeds below the surface, chops them up and spreads them out on top—where they can't grow—to be dried out and turned into plant food. Breaks crust, pulverizes clods, aerates the soil. The REEL KNIVES and STATIONARY BLADE, working in combination, make a loose dust mulch which holds the moisture, forcing plant growth and insuring size and quality. Does more work and better than ten men with hoes. Has shovels for deeper cultivation.

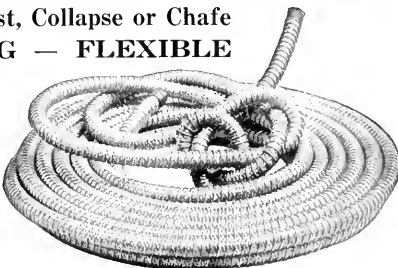
Costs little. Write today for illustrated folder and Special Factory-to-User offer.

THE BARKER MFG. CO., BOX 112, DAVER CITY, NEBRASKA

Mulconroy Flexible Metallic Spray Hose

Can't Kink, Twist, Burst, Collapse or Chafe
LIGHT — STRONG — FLEXIBLE

Answers all requirements for all kinds of spraying, 1000 lbs. pressure will not burst it. Easily coiled in a three inch circle. Tube specially compounded to stand spraying solutions. Hose cannot kink, and therefore delivers full capacity at all times. Outside protected against knocks, dragging over rough surfaces, and sharp turns.



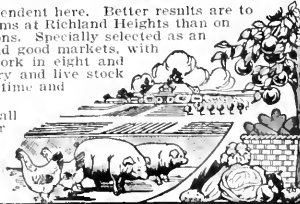
Trial order will show satisfaction and economy.

Manufactured solely by **MULCONROY COMPANY, Inc.** Established 1887
PHILADELPHIA NEW YORK

Buy one of these 5 and 10 Acre LITTLE FARMS IN VALLEY OF VIRGINIA.

You can be happy, prosperous and independent here. Better results are to be had on these 5 and 10-acre Little Farms at Richland Heights than on much larger farms in less favored sections. Specially selected as an ideal location. Near railroad station and good markets, with fast trains to Philadelphia and New York in eight and ten hours. Fine fruit, vegetable, poultry and live stock country—farms \$250.00 and up, on long time and easy payments.

Write now for attractive booklet, "Small Farms for Little Planters," and other interesting literature about the South.
F. H. La Baume, Agricultural Agent
N. & W. Ry.
228 Arcade Bldg., Roanoke, Va.





**J. I. CASE
PLOW-WORKS
RACINE, WIS.**

**All CASE Plows are
GOOD Plows**

but we have had a plow made
up for us that is especially
FINE for ORCHARD WORK

The J. I. CASE VINEYARD PLOW

in the 8 and 10-inch sizes fill YOUR need for a good orchard or vineyard plow. This plow is all steel, with steel handles that are provided with swivel so that the plow can be operated close to the trees or vines without inconvenience to the operator. Has a side chain attachment which enables the hitch to be shifted 7 inches to either side of the center point of the beam. If there is no Case Agent near you a card will bring you price and full descriptive matter on the J. I. Case Vineyard Plow.

We carry a full line of
FRUIT GROWERS' TOOLS

Cutaway Harrows, Planet Jr. Garden Tools, Light Draft Harrows, Orchard Trucks, Hand Carts, Spray Hose, Fittings, etc., etc.



Portland, Ore.
Spokane
Boise

LOOK! MR. FRUITGROWER

One of your choice trees is **Dying!** Why? **Gophers?** Yes, it's one of those Pocket Gophers taking **\$\$\$** out of your pocket. Protect your trees and save those **\$\$\$** by using the



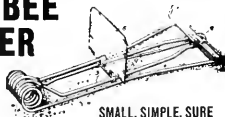
GINCH POCKET GOPHER TRAP

If set by the directions and with placement it will get the gopher and you will get the returns from that tree and others. If your dealer doesn't have the traps, write us at once. Sample trap postpaid **5c**.

Manufactured by

W. C. EMMERSON & CO.
FOREST GROVE, OREGON

**MACABEE
GOPHER
TRAP**



SMALL, SIMPLE, SURE

At all dealers. If your dealer does not handle it, send 20 cents in stamps and mention your dealer's name and get sample by mail, postage paid. Write for prices in larger quantities delivered free by parcel post.

MANUFACTURED BY

Z. A. MACABEE, Los Gatos, Cal.

Black Leaf "40" Spraying, Etc.

Continued from page 9

aphis-control work difficult. Several experiment stations recommend dilutions of "Black Leaf 40" for aphids, varying from 1 part in 800 of water for woolly aphids to 1 part in from 900 to 1200 for the green and purple or rosy aphids.

Treatment for woolly aphids: In setting out new orchards, spray all nursery stock thoroughly, roots and tops, with "Black Leaf 40" one to 800 plus soap (1 pint to 100 gallons of water plus 3 to 4 pounds of soap). For woolly aphids on the tops spray with "Black Leaf 40" diluted 1 to 800 plus soap (1 pint "Black Leaf 40" plus 3 to 4 pounds of soap to 100 gallons of water), using a pressure of 200 to 250 pounds. For treating woolly aphids on the roots we suggest that the soil be removed from around the trees, sufficiently exposing the infested area to enable the spray to permeate the soil and reach the insects so as to thoroughly wet them. Spray with the same solution that is recommended for use on the tops. Use a coarse stream and apply spray liberally.

Don't wait until after the buds have opened before applying your first spray for aphids. Don't wait till the leaves have curled in making later applications. Don't omit the soap when spraying with "Black Leaf 40" uncombined with bordeaux, lime-sulphur or arsenate of lead. Don't forget that thoroughness is half the secret of success in spraying for aphids.

Combination sprays: In spraying for several pests occurring at about the same time, the matter of combining sprays is one of importance and one in which a considerable saving may be effected. "Black Leaf 40," used alone, will be effective not only against aphids, but also for red spider, apple tingis, apple-leaf hopper and apple red bug. "Black Leaf 40" may be combined with lime-sulphur when used for San Jose scale (when bud tips show green), apple scab, moss, lichens, etc. Iron sulphide when used for apple mildew. Bordeaux mixture when used for apple scab and other fungus diseases. Arsenate of lead or arsenite of zinc when used for codling moth, bud moth, tent caterpillars, etc. When using "Black Leaf 40" with lime-sulphur, bordeaux mixture or arsenate of lead omit the soap.

Life Histories.—The four more important species of aphids that attack the apple are tabulated below:

Green apple-aphis (aphis pomi). Eggs laid at base of buds and on twigs in late fall; attacks buds, young leaves and blossoms. Also attacks pear, hawthorn and quince.

Rosy, brown or purple apple-aphis (aphis sorbi). Eggs laid on trunks and larger branches in fall; attacks leaves, tender shoots and fruit clusters.

Woolly apple-aphis (selizoneura lanigera). Eggs laid on elm in fall; attacks roots, trunks, branches and twigs.

European grain-aphis (siphocoryne avenae). Eggs laid on apple and pear trees in fall; attacks foliage. Also at-



"Friend" Queen

BUILT IN TWO SIZES

The Sprayer You Will
Eventually Buy

CALIFORNIA HAS ADOPTED IT
THERE'S A REASON!

California Spray Chemical Co.

COAST DISTRIBUTORS

Watsonville, California

MANY OTHER SIZES AND STYLES

Complete "Friend" Line of
Sprayer Accessories and Repairs



To retail Rawleigh Products, town and country. Some good old vacant territories. Largest and best line. One of the oldest and largest companies in the world. Six Factories and branches. All Products supplied from new Pacific Coast Branch. Quick Service. Low Freight. We want only industrious men capable of earning \$100 and up per month and expenses. Must have means for starting expenses and furnish Contract signed by 2 responsible men. Address W.T. Rawleigh Company, Oakland, Cal., giving age, occupation and references.

H. HARRIS & CO.

Fruit Auctioneers

131 State Street

Boston, Massachusetts

Established 1847

Frank Moseley

Frank L. Ripley

Cutler B. Downer



Ask for Catalogue No. 5

lacks pear, grains, grasses and hawthorn.

Green Apple-Aphis.—When growth starts in the spring the minute, shiny black eggs of the green apple-aphis hatch. All the eggs are hatched generally before the buds have opened. The young green plant lice congregate on the green bud tips and first leaves. These plant lice produce living young and the increase in number is very rapid as the leaves and blossoms appear, upon which hundreds of aphis may be seen feeding. The early generations of the green apple-aphis are wingless. Winged individuals begin to appear at the beginning of summer and the infestation spreads from branch to branch, tree to tree and orchard to orchard. At the approach of cold weather eggs are laid on young twigs and at the base of the buds, and there they remain throughout the winter until the warmth of spring causes the eggs to hatch and the young plant lice to start the seasonal histories all over again.

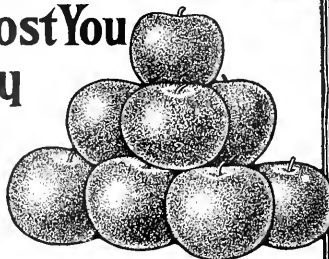
The Rosy, Brown or Purple Apple-Aphis.—The young of this species hatch generally later than those of the green apple-aphis and attack the early leaves. As their popular names imply, they are of several shades of red. These aphids are particularly noticeable on the leaves around the fruit clusters. Curled leaves and distorted fruit show the presence and work of this species. After midsummer the rosy aphis disappears from the trees and reappears in the fall. The eggs are laid on the trunk and older growth and are not generally as plentiful as the eggs of the green apple-aphis. The rosy apple-aphis passes the winter in the egg stage and hatches in the spring as the buds are opening. The Oregon Experiment Station carried on some experiments in the control of this aphis and found that "Black Leaf 40" was effective used alone or combined with lime-sulphur. Lime-sulphur, used alone at a winter dilution of 1 to 10, failed to have any effect on the aphis. Do not wait until the leaves are curled before spraying for this aphis.

The Woolly Apple-Aphis.—This aphis when grown is covered with a white,

What will it cost You Not to spray For Aphis?



APHIS INJURED



PERFECT

The U. S. Dep't of Agric. Says \$30,000,000

is the annual damage done to the American fruit crop by insects. Aphis causes a considerable part of this loss and the standard insecticide recommended by experiment stations and spraying experts for this and many other orchard pests is

"BLACK LEAF 40"

Guaranteed to contain 40% Nicotine

THIS IS THE TIME TO SPRAY for Apple Aphis—just as the leaf buds show green. Don't delay till the foliage gives the Aphis protection. Use "BLACK LEAF 40" when buds are like the one shown in this picture. Write us for Apple Aphis Bulletin.

"BLACK LEAF 40" is not recommended for all insects; but for Aphis, Pear Psylla, Hop Louse, and many other soft-bodied sucking insects it has proven to be a highly effective and a very economical insecticide.



LET US HELP YOU PROTECT YOUR ORCHARD

If your dealer will not supply you with "Black Leaf 40", send us P. O. Money Order for \$2.50 and we will send you, express prepaid, a 2 pound can that will make 200 gallons of effective spraying solution. If you are in doubt about the insecticide you need, write us, send specimens, or give descriptions of your insect enemies and we will help you find the proper insecticide.

KENTUCKY TOBACCO PRODUCT CO. Dept. C Louisville, Ky.

SPECIAL—"Black Leaf 40" is Duty Free in Canada



FREE ON REQUEST—Our Silent Salesman

Quiet and unassuming, but up to date and reliable. Nicely illustrated and printed especially for Western buyers of

SEEDS

OF ALL KINDS, Trees, Roses, Garden and Poultry Supplies, Canaries, Parrots, Bird Supplies, Fertilizers, Sprays, Sprayers, etc.

Don't buy until you read about our new policy—"No agents, but special prices, charges prepaid."—We save you time and money. Ask for Catalog No. 27—the new one.

ROUTLEDGE SEED & FLORAL CO. 169-171 SECOND STREET PORTLAND, OREGON

True-to-Name Nursery

GALLIGAN BROS. Proprietors

HOOD RIVER, OREGON DUFUR, OREGON

Growers of high grade nursery stock, guaranteed true-to-name. Breeders and importers of purebred Big Type Poland China Hogs. Service boars, bred gilts and weaning pigs for sale.

For catalog of nursery stock and prices on swine, write

True-to-Name Nursery

HOOD RIVER, OREGON

YOU CAN EARN \$50.00 PER DAY



with the **Gearless Improved Standard Well Drilling Machine.** Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours.

Another record where 70 feet was drilled on 2 1/2 gal. discharge at 9¢ per gal. One man can operate. Electrically equipped for running nights. Fishing job. Engine ignition. Catalogue W. S. REIERSON MACHINERY CO., Manfrs., Portland, Ore.

HOOD RIVER VALLEY NURSERY COMPANY

Phone 5634 Route No. 3, Box 227 HOOD RIVER, OREGON

Plantation four miles southwest of station, Belmont Road

We will be pleased to show you trees, apple trees that have a heritage, a quality that should be considered by everyone who plants a tree. Our trees are grown in clean hillside virgin red soil with clay subsoil, producing the most vigorous root system. Our buds are selected from the best bearing healthy Hood River trees that make the Hood River apple famous throughout the world. Our trees will give you satisfactory results in vigor, fruit and quality. Ask for catalogue. We guarantee our products. Apples, pears, peaches, apricots, almonds and walnuts. A complete line of the best varieties of all kinds of fruit.

H. S. BUTTERFIELD, President W. J. ENSCHEDE, Manager

DEPENDABLE BRAND Lime Sulphur Solution

The Standard Solution for
The Fruit Growers of the Northwest

Highest percentage of Sulphur in Solution in proportion to Baume test of any brand offered on this market.

MANUFACTURED BY
GIDEON STOLZ CO., Salem, Oregon

Better Crops on Perfect Seed Beds

Prepared with the
ACME Pulverizing Harrow

AFTER plowing sod or stubble, it must be worked down thoroughly and pulverized. Sods, clods and lumps must be broken up; air spaces and voids worked out and filled to insure a good seed bed that will give **BETTER CROPS**. Make available the plant food in plowed manure by thoroughly mixing with pulverized soil. **BETTER CROPS** will result. The "ACME" PULVERIZING HARROW makes possible the perfect seed bed. Sizes 3 to 17½ ft. wide, for one to four horses.

Light Draft—All Steel—Low Price
Write for catalog and name of nearest dealer.
DUANE H. NASH, Inc., 347 Division Ave., Millington, N. I.

No. 23
6½ Ft. Wide



GIANT WINTER RHUBARB Now Best Time to Plant
Should return from \$1,000 to \$1,500 per acre first year. If interested in Rhubarb, Berries or Cactus, write **J. B. WAGNER, Specialist, Pasadena, California.**

has just the right "body"
—body enough to keep the metal surfaces apart—but not to be a drag on the power—light enough to reach the places where needed—and quickly. And it maintains body at cylinder heat.

ZEROLENE
the Standard Oil for Motor Cars

Dealers everywhere.
Standard Oil Company
(California)
Portland



To STRAWBERRY GROWERS

The returns from your strawberries depend upon **quantity** and **size** of the berries.


Beaver Brand Animal Fertilizers
"A Fertilizer for Every Crop"

supplies your land with the constituent elements necessary to grow better and larger quantities of fruit.

Our **Beaver Brand "D" Animal Fertilizer** is prepared especially for strawberry and fruit growers.

Send for fertilizer booklet F37. Contains information of value.

UNION MEAT COMPANY
North Portland, Oregon



woolly material, which is very noticeable and gives the popular name to this species. This aphid is the only one infesting the apple that attacks the roots in addition to the parts above ground. The damage caused by this insect has been so widely recognized, particularly on nursery stock and young trees, that several states have passed laws against its introduction into or toleration within the state. The woolly apple-aphid, unlike the green and rosy apple-aphid, prefers the bark to the foliage or fruit. The roots, trunk, branches and twigs are attacked. Small blister-like swellings are caused on the parts attacked; this does not always occur, however, on the twigs. Roots may be so covered with these growths as to cause the death of young trees. Infested twigs sometimes crack, giving entrance to fungus spores and bacterial diseases. In the spring the plant lice that have spent the winter in cracks of the bark or in wounds become active and attack new, tender bark on young or old parts of the tree. Some of the individuals that have passed the winter at the base of the tree or on the roots will likewise move to the parts of the tree above ground and assist in the attack. Many of the plant lice on the roots remain there the year round.

A Sure Way to Keep Your Tobacco Supply Always Fresh and Pipe-fit

Used to be that a man had to contend with smoking dried-out tobacco that burned like firebrands and seared the everlasting lining out of his mouth, but not so today. Now he can keep his supply just as fresh and fragrant a month or more afterward as it was the day he got it.

A fine scheme to keep the goodness in the tobacco from first to last pipeful has been hit upon by the R. J. Reynolds Tobacco Company, of Winston-Salem, North Carolina, the makers of Prince Albert tobacco. It's a crystal glass humidor with a removable top held on by a patented band that makes it airtight. There's a sponge in the top to keep the tobacco always pipe-fit. The makers pack a pound of Prince Albert in this container and you can buy one at almost every store that sells tobacco.

Almost every smoker this side of the Gulf has seen or heard something about Prince Albert. It's known all over the States as "the national joy-smoke," because a man can smoke as much and as hard as he likes without ever having any sore tongue or throat worries. Simply doesn't nip, that's all. Had its "teeth" pulled out by a patented process controlled exclusively by the Reynolds people.

At present, a series of quaint and interesting advertisements is running in this publication. Everyone of them is chockful of that happy, good-natured P. A. spirit that makes a man look for the next one just natural-like. You'll sure be interested in them; keep a look-out.—[Adv.]

Spraying Economy, Etc.

Continued from page 8

get along without at least applying two sprays for the codling moth. In some years good results are secured without the third spray, yet there is little question but that the third spray for the codling moth will more than pay for itself, and especially if there were many worms the previous season. Often the grower who is accustomed to omitting the third spray is confronted with the appearance of stings and blemishes on his apples late in the summer, and which necessitates culling severely. Our own experiments during the summer of 1914 gave from 5 to 1.5 per cent wormy fruit with the three sprays applied thoroughly and to trees which bore a high per cent of wormy fruit in 1913.

Selecting the Spray.—There are many different brands of spray materials on the market. Consequently the grower has a wide latitude from which to choose his spray. Moreover, we see every year an increasing number of new sprays on the market, and which undoubtedly have merit. These should be encouraged if they give any better results or possess marked advantages over the old and tried sprays. It would be better, however, for the first year to try out the new spray on a moderate scale and check it up with the older spray. Growers are often inclined to blame the spray material for their lack of success, even when the thoroughness of application has been neglected, either with or without the owner's knowledge.

In choosing a spray, its past record should be the point most emphasized, whether secured by the prospective purchaser or by someone in whom he has confidence. It is also well to give a spray credit for being all right until the contrary is proved. One should not select a brand of arsenate of lead because it contains a high arsenic content, supposing it to be better, and without regard to the way the arsenic has entered into combination with the lead. It is better to use an "Ortho" arsenate containing 12 per cent of arsenic oxide than one of another combination with the lead and having 3 or 4 per cent more arsenic oxide. The former is not so apt to give up free arsenic in the presence of neutral or alkaline solvents and thus produce injury to the foliage. It is also advisable, especially when acid arsenates are used, to combine one pound of lime to each pound of the arsenate of lead in the spray tank, in order to lessen the danger of burning. This danger is negligible when either lime-sulphur, atonic sulphur or iron sulphide is combined with arsenate of lead to be used against the codling moth and apple scab, or codling moth and apple mildew.

For the purpose of comparing the results of the use of arsenate of lead, sold both in the paste and powdered form, an experiment was conducted in the Boise Valley during the season of 1911 which had for its object a comparison of results from the practical applica-

Hansen's Gloves



Stay Soft in Spite of Soaking

BECAUSE of the special Hansen-treated leather this glove will remain soft and pliable regardless of wetting. It wears long and **keeps soft**. The *seasonable quality* in Hansen's Gloves, their correct proportions and comfort make them widely popular.

For the *special work* of the spraying season these gloves are exactly adapted. They protect your hands from the solution and dry out soft as new. Never bunglesome or awkward; their perfect fit allows prompt action and nimble fingers as if you had no gloves on.

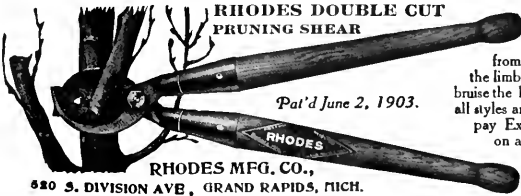
Write for Free Book

Shows many of 500 styles—gloves and mittens for men, women and children—at work or sport, driving, motoring. All at reasonable cost.

If your dealer is not supplied, write us for information where to buy.

O. C. Hansen Mfg. Company
130SP Detroit St. Milwaukee, Wis.





**RHODES DOUBLE CUT
PRUNING SHEAR**

Pat'd June 2, 1903.

RHODES

RHODES MFG. CO.,
620 S. DIVISION AVE., GRAND RAPIDS, MICH.

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

No Matter What Crop You Grow, Your Soil Must be Right Always

The universal soil need is Phosphorus.
The most economical and logical source of Phosphorus is

Finely Ground **SHIELD BRAND** High Grade
Phosphate Rock

The Phosphate of Lime

EFFICIENCY AND ECONOMY ARE INSEPARABLE EVERYWHERE

UNITED STATES PHOSPHATE CO.

405 Marsh-Strong Building, Los Angeles, California

TIE UP



YOUR LABEL CONTRACTS WITH US WE KNOW HOW

TRAUNG LABELS

ATTRACT ATTENTION

We are especially qualified to design and execute attention compelling **LABELS** that are necessary to give the proper selling power to your goods.

HIGHEST QUALITY - PROMPT SERVICE - LOWEST PRICES
SAMPLES AND PRICES UPON APPLICATION

"SATISFY THE CUSTOMER" Is Our Slogan

TRAUNG LABEL & LITHOGRAPH CO.
SAN FRANCISCO, CAL. PORTLAND, ORE.
 SATTERY & GREEN STS. PARK AND STARK STS.

Send for our 1915 Art Calendar. Free on Application



"WOOD-LARK"

TRADE MARK

SQUIRREL AND GOPHER POISON

QUICK, CERTAIN, DEADLY.

Ready for Instant Use. Never Fails
 Destroys Squirrels, Gophers, Prairie Dogs, Sage Rats. Apply now - will save millions in leaky irrigation ditches, destroyed fruit trees and alfalfa fields. Money back if it ever fails. "Wood-Lark" for 25 years has stood the test. It's crop insurance against rodent pests. If your dealer hasn't it, write us.

Clarke, Woodward Drug Co.
 PORTLAND, OREGON

WE MAKE A SPECIALTY OF

Catalogs, Booklets and Circulars

FOR
Nurserymen, Fruit Growers, Manufacturers and Selling Agents

Write us for specifications and information. Quality and Service

F. W. BALTES AND COMPANY
Fine Printing PORTLAND, OREGON

tion of different brands of these spray materials. The trees selected were of the Rome Beauty and Jonathan varieties, eight years old, and producing about 15 per cent wormy fruit in 1913. The plats were selected from the inside of the orchard block, contained about two acres each, and of both of the above varieties. Two standard brands of powdered arsenate of lead and one paste arsenate of lead, all obtained on the local markets, were used in the test. These were selected because they represented the sprays accessible on the local market at that time. Three sprays were applied during the season, with a power sprayer maintaining a pressure of 200 pounds or more, and hose equipped with extension rods and nozzles capable of throwing a coarse driving spray. The work was done by the owner and myself, and care taken to apply all three sprays thoroughly, especial attention being paid to the first or "calyx" spray. An effort was made to reach all of the blossoms with this spray, which was applied May 12th. The second application was made May 29th and the third July 18th. The paste was applied at the rate of 2½ pounds to 50 gallons of water and the powder form applied at the rate 1¼ pounds to 50 gallons of water, or just one-half as much as the paste, since the powder is known to have twice the strength of the paste. The fruit from three trees of each variety in each plat was carefully examined at picking time for evidence of injury from worms and the results are here tabulated:

SPRAYING EXPERIMENTS

	Jonathan	Rome
<i>Sherwin-Williams Powdered Arsenate of Lead</i>		
Number of apples examined.	1,644	1,694
Number of apples wormy	11	24
Per cent of apples wormy . . . . .	.67	1.42
Insecticide rating . . . . .	. . . . .	98.95
<i>General Chemical Co. Paste Arsenate of Lead</i>		
Number of apples examined.	2,621	3,044
Number of apples wormy	17	38
Per cent of apples wormy . . . . .	.65	1.24
Insecticide rating . . . . .	. . . . .	99.03
<i>"Corona Brand" Powdered Arsenate of Lead</i>		
Number of apples examined.	1,681	3,439
Number of apples wormy	9	37
Per cent of apples wormy . . . . .	.54	1.08
Insecticide rating . . . . .	. . . . .	99.10

By careful attention to the manner and time of application of the sprays it has been possible to reduce the percentage of injury from codling moth to less than 1.5 per cent in 1914 where the injury was 15 per cent in 1913, and at the additional cost of but one spray (the third). Two sprays had been given this orchard in 1913 by the owner, who used a heavier strength of arsenate of lead than here given. The experiment further shows that there is little difference in actual results, whether the paste or powdered form of arsenate of lead is used, both giving good results, though the powder has a slight advantage in ease of mixing. The point to note is that good results depend on the lime and thoroughness of application rather than spray material used, and these after all are the most important factors in both the economy and efficiency of our spray materials.

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

Executive Committee, Etc.

Continued from page 7.

came cashier. Later this bank was converted into the First National Bank of Wapato, of which Mr. Jones at the present time is vice-president and manager.

Mr. Jones has developed an orchard of forty acres near Wapato, consisting of peaches, pears and apples, which is now seven and eight years old.

Mr. Jones is also secretary of the Yakima Reservation Water Users' Association.

Mr. Jones was a very earnest worker in the Growers' Council, being a man of many years' experience in connection with large selling agencies, in merchandizing, and many years' experience in the banking business. Mr. Jones is a man exceedingly popular in his own district and has the confidence of the fruitgrowers of the Yakima Valley.

MR. W. H. PAULHAMUS, Puyallup, Washington, Chairman of the Executive Committee of Three of the Fruit Growers' Council of 107.

Mr. W. H. Paulhamus was born on the 4th day of March, 1865, and is 50 years of age. His early days were spent at Altoona and Sharon, Pennsylvania, and Youngstown, Ohio, at which places he attended the public schools. At 18 years of age he left Youngstown, Ohio, for Aberdeen, South Dakota, where he entered the banking business, and later at Sumner, Washington. He followed the banking business up to December, 1894.

Mr. Paulhamus has engaged in farming outside of Puyallup, Washington, and has been manager of the Puyallup and Sumner Fruit Growers' Association since 1902. Commencing with a capital stock of \$2500, Mr. Paulhamus has created a capital and surplus of \$102,503.00. Appreciation of his value to this association is shown in a very forcible way by the fact that the association has his life insured for \$25,000 in case of death and \$75,000 in case of accident. The importance of this association to the State of Washington is shown in many ways. Its value as an industry is shown quite clearly by comparing its payroll with the car shops of the Northern Pacific at Tacoma. The Northern Pacific car-shop payroll in the largest month of 1914 is reported, we are informed, as \$68,000; the payroll of the Puyallup and Sumner Fruit Growers' Association Cannery for the largest month in 1914 was \$238,000.

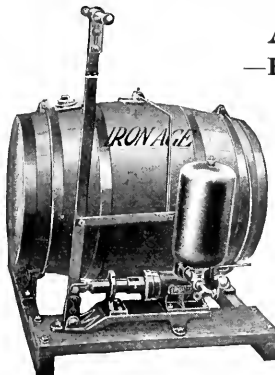
Mr. Paulhamus has built up an immense industry from a very small one. The volume of the industry is indicated by the number of employees; during the berry packing and canning season from 7,000 to 10,000 people are engaged in this work and received their pay from the industry that has largely been created through the able management of Mr. Paulhamus.

Mr. Paulhamus is one of the largest raspberry growers in the Puyallup

IRON AGE SPRAYERS

—The Big Favorite with Northwest Fruit Growers

Thousands of fruit men know that "Iron Age" means the best sprayer on the market. If you are interested in sprayers this spring, you should write now for the Special "Iron Age" Catalogs and name of the nearest dealer.



All Sizes
—Hand or Power

"Iron Age" is the largest line of Spraying Machinery made. Hand Sprayers, Bucket Sprayers, Vertical and Horizontal Barrel Sprayers, and Power Sprayers in all sizes.

"Iron Age" Sprayers are equipped with all attachments for trees and small fruit. Prices range from \$3.50 to \$300.00.

Fill out the coupon or send a postal today for the Special Spraying Catalogs and name of your "Iron Age" dealer.

"Iron Age" Goods are Distributed
in the Northwest by

R. M. WADE & CO.
SINCE 1865
PORTLAND, ORE.

Oldest and Largest Independent Wholesalers
of Farm Machinery in the Pacific Northwest

MAIL THIS COUPON
R. M. Wade & Co.
331 Hawthorne Avenue, Portland,
Send me Special "Iron Age" Spraying
Catalogs.
Name _____
Address _____

"BLUE RIBBON"

(EXTRA FANCY)

"RED RIBBON"

(FANCY)

Famous Brands of Yakima Apples

Packed under our personal supervision
Get in touch with us by wire or letter

Yakima County Horticultural Union

E. E. SAMSON, Manager

NORTH YAKIMA, WASHINGTON

EVERY STUMP HOLDS A DOLLAR

The ground covered by an average stump and its roots will grow 25c. to 50c. worth of food crops per year. A hundred-stump acre will produce \$50 worth of food per year after clearing. Why leave these dollars buried under stumps and pay taxes on stump land when the whole world offers big prices for American farm products?

DU PONT or Repauno Stumping Powder

Will get them out in cold and wet weather, when you have plenty of time. Clear land early and crop it this year. This explosive is low freezing, hence works well while snow is on the ground. It takes less Stumping Powder in wet weather than in dry. Turn the cold wet days of March and April into cash.

Order Red Cross quickly from any hardware dealer or

DU PONT POWDER CO.
SEATTLE, WASH.

1915

How Many Dollars Are Buried In Your Farm?

D. Crossley & Sons

ESTABLISHED 1878

Apples for New York and Export

CALIFORNIA, OREGON, WASHINGTON, IDAHO AND FLORIDA FRUITS

Apples handled in all European markets at private sale. Checks mailed from our New York office same day apples are sold on the other side. We are not agents; **WE ARE SELLERS.** We make a specialty of handling **APPLES, PEARS AND PRUNES** on the New York and foreign markets. Correspondence solicited.

200 to 204 Franklin Street, New York

NEW YORK

LIVERPOOL

LONDON

GLASGOW

Valley and in addition conducts a model dairy at Sumner, Washington.

He is so well known to the fruit-growers of the Northwest, as he has addressed practically every horticultural meeting in the State of Washington and so many conventions that it hardly seems necessary in a brief sketch like this to make any further comment. However, for the benefit of the few who have not met Mr. Paulhamus, it seems proper to say that he is considered one of the able men in the State of Washington; a successful business man for himself and is given credit for the most phenomenal success that has been achieved by any cannery in the Northwest; that he has built up to the greatest magnitude the largest berry-growing district in the Northwest, which shipped some 300 cars of fresh raspberries annually. Mr. Paulhamus is not only noted for his ability, but is a man of power, force and energy, a man who acts according to his own convictions without fear or favor. To him is due in a very large measure indeed the creation of the Fruit Growers' Council, in which the fruitgrowers have the greatest confidence in controlling the marketing concerns in such a manner as will result in securing for the growers far better prices for their fruit in the future than they have received in the past.

It was Mr. Paulhamus who originated the idea of controlling the marketing organizations, similar to the plan of the Interstate Commerce Commission or the Bank Examiner Laws.

Mr. Paulhamus in his able addresses delivered in the Wenatchee Valley, Hood River Valley, Yakima Valley and at the National Apple Show at Spokane, and at the fruitgrowers' conventions in Seattle and Tacoma has won the confidence of the fruitgrowers of the Northwest, and it seems to be the unanimous opinion that the fruitgrowers of the Northwest will unanimously support the Fruit Growers' Council of 107, the Board of Control of Ten and the Executive Committee of Three, of which Mr. Paulhamus is chairman and manager.

MR. TRUMAN BUTLER, Hood River, Oregon, Member of the Executive Committee of Three of the Fruit Growers' Council of 107.

Mr. Truman Butler was born in Ottawa, Kansas, January 4, 1872, and is now 43 years of age. With his parents he moved to The Dalles, Oregon, when he was ten years old, where he resided for eighteen years, attending the public schools there, followed by a course of one year in the famous old educational institution known as the Wasco Independent Academy at The Dalles. Later on Mr. Butler attended Lane University at Lecompton, Kansas, which college was later merged with another small college in Kansas.

After his course at Lane University, Mr. Butler took a position with The Dalles, Portland and Astoria Navigation Company, remaining with this

Company for seven years as purser on the river steamers between Portland and The Dalles, and also as agent for the company in Portland.

In 1900 Mr. Butler came to Hood River, and with his father, Mr. Leslie Butler, established the first bank in Hood River, known as the Butler Banking Company.

Mr. Butler has resided in Hood River for fifteen years, and while not engaged in public life, he has been very active in the development and prosperity of Hood River Valley. With his father he started the first bank in Hood River with a small capital, which has grown to a capital of \$100,000 with a large surplus. He has not limited his field of work here to the upbuilding of the bank alone, but has earnestly worked for the benefit and betterment of the community in which he resides. By those who know him well he is considered a constructive, creative man of ability with good, sound judgment, and a man of conservative methods.

Mr. Butler has assumed a position on the By-Product Committee of Ten, to which he has devoted much time and has already rendered efficient service which is highly appreciated by the fruit districts of the Northwest. It is believed that Mr. Butler will render able and valuable services to the fruit-growers in his position as a member of the Executive Committee.

MR. A. D. MOE, Hood River, Oregon.
Member of the Board of Control of the Fruit Growers' Council of 107.

Mr. A. D. Moe was born in Princeton, Wisconsin, August 31, 1865, and is therefore 49 years of age. His education was received principally in public schools. Early in life he learned the printing trade. In 1891 he established the South St. Paul Reporter, at St. Paul Union Stock Yards, devoted to the livestock industry, which he conducted with success for some eleven years. In 1902 he moved to Grand Forks, where he became proprietor and editor of the Grand Forks Daily Plaindealer, which he ably and successfully conducted for two years. In 1904 Mr. Moe came west and settled in Hood River, purchasing the Hood River Glacier from Sam Blythe, which was the first newspaper established at Hood River. Mr. Moe has been editor and publisher of the Glacier ever since. The paper is recognized as a paper of quality and influ-

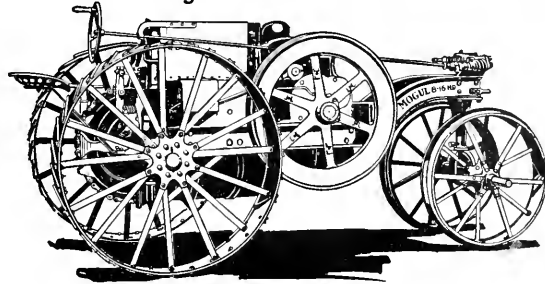
Steam Pressure Canning Outfits

Can your Fruits, Vegetables, Corn, Meats, Fish, etc., for home use and for sale at a big profit. Outfit more than pays for itself the first year. Eleven different sizes. Book of Canning Recipes free with outfit. Tells how to can everything. Write for Catalogue B.

Built by
HENNINGER & AYES MFG. CO.

47 First Street
PORTLAND, OREGON

Our New Year's Announcement A Mogul Orchard Tractor for \$675



We announce for 1915 an all-purpose Orchard tractor with 8-H. P. at the drawbar and 16 on the belt—Mogul 8-16

An Easily Handled, Short Turning Tractor

THIS new Mogul 8-16 tractor will do the work of eight horses in the orchard.

Being a four-wheeled, all-purpose tractor, you can use it every working day.

It will do plowing and seeding as well as orchard cultivating.

It will draw manure spreaders, wagons, mowers or binders.

It will run a corn sheller, feed grinder, small shredder, threshing or ensilage cutter.

Any farmer can buy this new Mogul 8-16 tractor for \$675.00 cash, f. o. b. Chicago.

The man who can use one of these Mogul tractors pays, at this price, the least for which a good, reliable, all-purpose 8-16 tractor can be sold.

If you want to use a Mogul small-farm tractor for spring work, your order should be placed now with the I H C local dealer.

Write us for full information.

International Harvester Company of America (INCORPORATED)

Crawford, Neb. Denver, Col. Helena, Mont. Portland, Ore.
San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah

Arcadia Irrigated Orchards

THE LARGEST AND MOST SUCCESSFUL ORCHARD PROJECT
IN THE ENTIRE WEST

7,000 acres planted to winter apples. Gravity irrigation. Located 22 miles north of Spokane, Washington, directly on the railroad. We plant and give four years' care to every orchard tract sold. \$125, first payment, secures 5 acres; \$250, first payment, secures 10 acres; balance monthly.

SEND FOR BOOKLET

Arcadia Orchards Company

Deer Park, Washington

Save $\frac{2}{3}$ Fuel Cost

With A
Kerosene Burning
Sandow

Investigate!



Without change of equipment, the Sandow runs on kerosene—gasoline—distillate—or alcohol.

On low priced kerosene, the Sandow delivers more power per h. p. of rating, than ordinary engines do on gasoline. With the Sandow you can save the price of your engine in upkeep economy alone. Investigate! Get all the facts.

Write for Free Sandow Book, which shows you by illustrations from photographs why the Sandow is the simplest engine made—the easiest to run—the most free from trouble and repair expense.

Only 3 Moving Parts

Starts at 40 degrees below zero. Starts without cranking—runs in either direction—throttle governed—hopper and tank cooled—speed controlled while running—no cams—no valves—no gears—no sprockets—light weight—can easily be taken anywhere for work—complete ready to run.

THERE'S A SANDOW FOR EVERY FARM

Made in all sizes from $\frac{1}{2}$ H. P. to 18 H. P. Have a Sandow to meet your needs—do the work you want done at greatest economy. Sandow will do your pumping—run your feed grinders—your cream separators—do all the stationary power work of farm or shop, and save you more money than any other engine on the market. Sandow is not just an ordinary engine. Special design for kerosene fuel means more simplicity, greater durability. Send for Free Book and judge for yourself.

TEN YEAR IRON CLAD GUARANTEE

Absolutely protects you—Sandow must make good on every claim. It is because Sandow is making good every day on thousands of farms that we can make this iron-clad, binding guaranty. Users everywhere will tell you how Sandow saves fuel—saves trouble—saves repairs—and can be depended on for power all the time.

FREE TRIAL ON YOUR FARM

Book gives our Free trial proposition. Use the Sandow every day 30 days on your own farm. If you don't say it is the most economical and most powerful farm engine you ever saw—if it does not satisfy you every way, send it back and we will refund every cent you paid for it.

SPECIAL LOW PRICE DIRECT TO YOU

Just compare these rock-bottom prices for Sandow Engine, with those of any other engine manufacturer, and remember Sandow quality is unsurpassed. Sandow prices are: $\frac{1}{2}$ H. P. Bull Pup Engine, \$33.75; $\frac{3}{4}$ H. P. Sandow, \$42.50; 4 H. P. Sandow, \$65.00; 6 H. P. Sandow, \$95.00; 8 H. P. Sandow, \$140.00; 12 H. P. Sandow, \$250.00; 18 H. P. Sandow, \$385. We have no agents—no jobbers—no middlemen—no dealers. You buy of us and keep all the middle profits and commissions in your pocket. Before you get any engine, be sure to have our low figures and see what you can save.

SEND FOR FREE SANDOW BOOK

It is full of plain facts on the farm engine question—illustrated from cover to cover with pictures from photographs showing the simple construction of every part of the Sandow—contains the letters of users of the Sandow. Remember it costs you nothing to get the facts—does not place you under any obligation whatever. Write today. A postal brings the book. Address

Detroit Motor Supply Co.

Detroit Mich

65 Canton Ave.



Book of Sandow Facts

Direct from Factory to User

Send For it today

ence. In 1906 Mr. Moe bought thirty acres of land, which he cleared and set to orchard, which is now in bearing. During his residence in Hood River he was member of the City Council for two years, secretary of the Commercial Club for two years and has been a director of the First National Bank from 1910 to 1915. Being a successful business man is sufficient assurance that Mr. Moe will act with good business judgment in the new position which he has assumed. In addition, being director of the First National Bank is further evidence of soundness of business ideas, his conservativeness and safeness.

Notes on the age of the different members of the Executive Committee and Board of Control:

Mr. C. E. Chase	29	years of age
Mr. C. T. Haskell	37	" "
Mr. Truman Butler	43	" "
Mr. W. M. Sackett	45	" "
Mr. John A. Westerlund	49	" "
Mr. A. D. Moe	49	" "
Mr. W. H. Paulhamus	50	" "
Mr. E. C. S. Braimard	51	" "
Mr. A. W. Simmons	59	" "
Mr. Harry Jones	63	" "

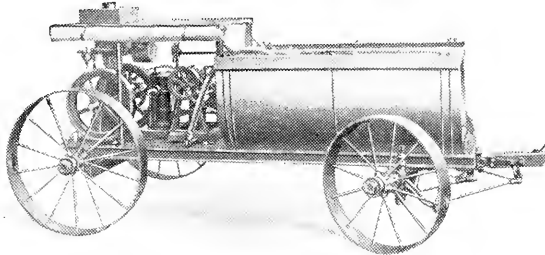
Mr. Chase is the youngest man on the board, being 29 years old, and Mr. Jones is the oldest, being 63 years old. It is evident that all these men are in the prime of life and therefore at the age when they can render the most efficient service.

Mr. C. W. Meldrum, assistant general passenger agent of the Great Northern Railway, Seattle, Washington, has called our attention in the following paragraph to our failure to mention the Glacier National Park in the February edition: "Permit me to call your attention to an oversight in the paragraph on front cover and in the editorial as well—the omission of reference to Glacier National Park. Nationalized by Congress as late as the fall of 1910, Glacier National Park had almost as many tourists during the season of 1914 as Yellowstone Park. We believe there is no question as to Glacier National Park soon becoming the nation's best known and most frequented tourist attraction. It is served only by the Great Northern Railway, which insures that travelers from the East to California stopping off at Glacier Park en route will traverse the Northwestern States with resulting benefit to Oregon and Washington. As you are well aware, there are two entrances to the Yellowstone, of which the southern gateway for several years past has been the more popular, and a glance at the map will show that it is not necessary for tourists en route to California entering Yellowstone Park via the southern gateway to visit the Northwest, but proceed via direct route through Ogden. Therefore we regard Glacier National Park one of the greatest assets of the Northwest in our efforts to secure our share of this Exposition travel."

Chas. A. Cherry Nursery, Rockford, Illinois, has just issued an interesting catalog for its dependable seeds.

SPRAYING EQUIPMENT

In A
Class
by
Itself



There is
no Power
Sprayer
to be
compared
with it

THE HARDIE HILLSIDE TRIPLEX

Lower prices for orchard products bring home to every fruit raiser the question of production cost.

The cost of spraying equipment, the value you receive for your money, its results, cost of operation and upkeep, are receiving closer attention than ever before.

With our sales this year far exceeding our expectations, we are strongly impressed that the Hardie Idea of always and continually giving the most value and service to its customers is the cause.

Our interests are mutual. You are striving to lower your production cost. We are furnishing you the equipment with which to do it.

The various sizes and types of power machines in our line enable you to select the power sprayer best suited to your individual requirements.

Throughout the construction of all we use high grade material and sound, proven design.

The brief description below gives you a slight idea of the completeness and quality we furnish.

ENGINE—Water cooled, four cycle, ample power. Ability to run on sidehills with equal ease as on level ground. Ignition—gear-driven magneto, multiple cell battery or ordinary dry cells.

TANK AND PLATFORM—Pressed high carbon steel platform with choice of size of tank. Fully cabbed with curtains.

EQUIPMENT—Your choice in hose lengths, rods, etc., all of guaranteed quality.

SERVICE—The best in the Northwest. Large stocks of machines and parts in all fruit centers. No delays.

PUMP—Triplex, Duplex, Hardie Junior types. Sizes to suit your requirements. Brass plungers and plunger tubes. Doing away with all excess friction and not affected by spraying chemicals, heat or cold. Valves—Bell metal ball valves with heavy, long-lived seats. Pressure regulator—The most reliable regulator, giving you absolute control of the pressure at all times. No load on pump and engine when nozzles are not in use.

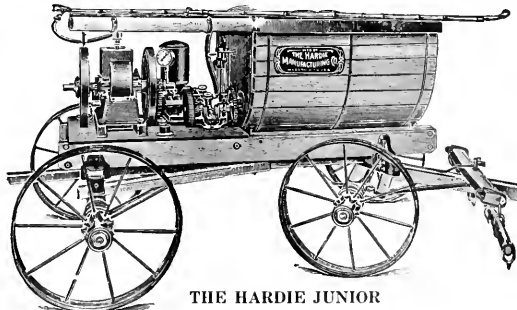
PRICES—The most spray pump value for your money, and a range of prices within the reach of all.

Over seven thousand fruit growers now own Hardie Power Sprayers. Reduced spraying costs. Increase your production. To do this

BUY A HARDIE

For the
small
grower

A two-lead
of hose
machine



THE HARDIE JUNIOR

Price
\$150.00
and
upwards
according to
equipment

You need our catalog—Write for it today.

THE HARDIE MFG. CO.

49 North Front Street

PORTLAND, OREGON

The World — Our Orchard

STEINHARDT & KELLY

101 PARK PLACE
NEW YORK

Unquestionably the most
important factors in
the fruit industry
of the
United States

Our Market — The World

BETTER FRUIT

VOLUME IX

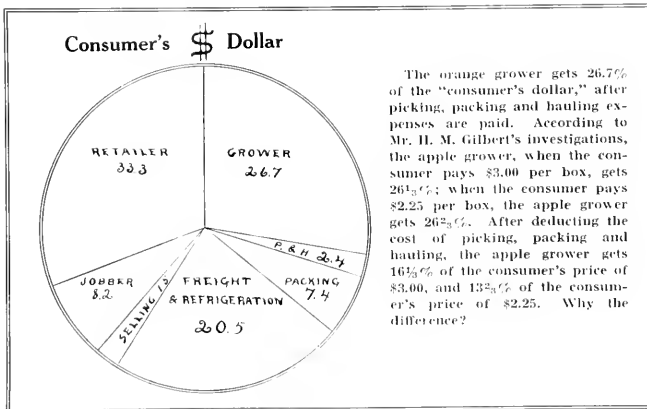
MAY, 1915

NUMBER 11

THIS EDITION contains personal sketches of the lives, with illustrations, of most of the Sales Managers of the largest fruit shipping concerns operating in the Northwest. The feature article is on the cost of distribution of the Citrus Fruit Crop, showing the percentage the grower gets of the "Consumer's Dollar"—the ablest article ever written on the subject, by Mr. G. Harold Powell, Manager of the California Fruit Growers' Exchange, whose picture appears below.



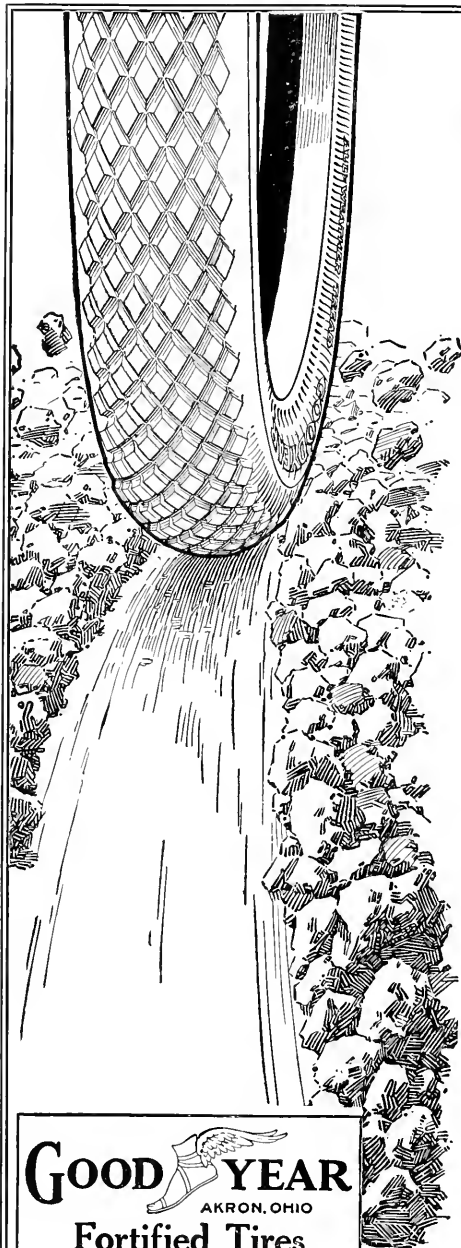
G. HAROLD POWELL
Manager California Fruit Growers' Exchange
Los Angeles, California



BETTER FRUIT PUBLISHING COMPANY, PUBLISHERS, HOOD RIVER, OREGON

Subscription \$1.00 per Year in the United States; Canada and Foreign, Including Postage, \$1.50.

Single Copy 10 Cents



Fortified Tires

Have Pushed Millions of Rocks from The Tire Road

Stop and think how Goodyear Tires have held top place for years. There are a hundred rival makes. Yet Goodyear last year sold 1,479,883 automobile tires—about one for each car in use.

The reason is, they are super-tires. They excel in five vital ways. They have brought new enjoyment to hundreds of thousands of motorists. They have saved millions of dollars in needless tire troubles.

Give Them Credit

Don't expect a Goodyear Fortified Tire to be entirely trouble-proof. No tire can ever be. Mishap and misuse affect all of them.

But give Goodyears credit for the rocks they avoid for you, and you are bound to adopt these tires. Note these exclusive features:

Rim-cuts are almost unknown in tires with our No-Rim-Cut feature.

Blowouts due to wrinkled fabric have been ended by our on "On-Air" cure. That process used by us alone, costs us \$450,000 yearly.

Loose tread risk is reduced 60 per cent by our patent method. The 126 braided piano wires in each tire base have made the tires secure.

Our All-Weather tread combats punctures, skidding and wear. It is tough and double-thick. It has a sharp, resistless grip.

Lower Prices—Better Tires

Our last big price reduction came February 1st. It was the third in two years, totaling 45 per cent.

Yet not an item has been skimped. On the contrary, we spend \$100,000 yearly on experts to find ways to build tires better.

You are wronging yourself when you don't use Goodyear tires. You lose all these extra protections. You are missing all that won this tire the ruling place in Tiredom. Any dealer will supply you.

GOOD YEAR
AKRON, OHIO
Fortified Tires

Fortified
Against

Rim-Cuts—by our No-Rim-Cut feature.
Blowouts—by our "On-Air" cure.
Loose Treads—by many rubber rivets.
Insecurity—by 126 braided piano wires.
Punctures and Skidding—by our double-thick All-Weather tread.

THE GOODYEAR TIRE & RUBBER CO., Akron, Ohio

Makers of Goodyear "Tire Saver" Accessories; also Goodyear "Wing" Carriage Tires and Other Types

(2/21)

The Paris Fair

Hood River's Largest and Best Store

RETAILERS OF

EVERYTHING TO WEAR

AGENTS FOR

HAMILTON & BROWN AND
THE BROWN SHOES

HART, SCHAFFNER & MARK
CLOTHES

MANHATTAN SHIRTS

JOHN B. STETSON HATS

NEMO CORSETS

Strictly Cash—One Price to All

Things We Are Agents For

Knox Hats

Alfred Benjamin & Co.'s Clothing

Dr. Jaeger Underwear

Dr. Deimel Linen Mesh Underwear

Dent's and Fownes' Gloves

Buffum & Pendleton

311 Morrison Street

PORTLAND, OREGON

Store Your Apples in Spokane

The Natural Storage Center

Take advantage of storage in transit rate and the better market later. Write us for our dry and cold storage rate and information.

**Ryan & Newton
Company**

SPOKANE, WASHINGTON

IF YOU WANT TO MARKET
YOUR

FRUIT

RIGHT

ALWAYS SHIP TO

W. B. Glafke Co.

WHOLESALE FRUITS
AND PRODUCE

108-110 Front Street
PORTLAND, OREGON

W. H. DRYER

W. W. BOLLAM

DRYER, BOLLAM & CO.

GENERAL
COMMISSION MERCHANTS

128 FRONT STREET

PHONES: MAIN 2348
A 2348

PORTLAND, OREGON

LEVY & SPIEGL

WHOLESALE

FRUITS AND PRODUCE

Commission Merchants

SOLICIT YOUR CONSIGNMENTS

Top Prices and Prompt Returns

PORTLAND, OREGON

STORAGE

Ship your Furniture
to us to be stored
until you are located

TRANSFER & LIVERY CO.
Hood River, Oregon

The Old Reliable

BELL & CO.

Incorporated

WHOLESALE

Fruits and Produce

112-114 Front Street
PORTLAND, OREGON

Richey & Gilbert Co.

H. M. GILBERT, *President and Manager*

Growers and Shippers of

**YAKIMA VALLEY FRUITS
AND PRODUCE**

Specialties: Apples, Peaches,
Pears and Cantaloupes

TOPPENISH, WASHINGTON

Established 1893

W. P. KRANER & CO.

Importers and Tailors

2nd Floor Couch Bldg.

109 Fourth Street
Portland, Ore.

Geo. E. Kramer

C. W. Stose

Mark Levy & Co.

COMMISSION
MERCHANTS

Wholesale Fruits

121-123 FRONT AND
200 WASHINGTON ST.

PORTLAND, OREGON

Orchardist Supply House

Franz Hardware Co.

HOOD RIVER, OREGON

W. F. LARAWAY

DOCTOR OF OPHTHALMOLOGY

EYES
TESTED



LENSES
GROUND

Over 30 Years' Experience

Telescopes, Field Glass

Magnifiers to examine scale

Hood River
Oregon

and

Glenwood
Iowa



English Tested Flower,
Vegetable and
Grass

SEEDS

Write
for Catalog "B"

CARTER'S TESTED SEEDS, Inc.

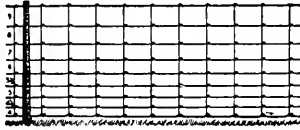
DEAN BALLARD, Mgr.
3000 Arcade Building SEATTLE

CLOVER SEED

The very finest seed grown in the valley at the lowest possible prices. Write and tell us how much you need and we will quote.

D. A. WHITE & SONS
SALEM, OREGON

DIRECT TO CONSUMER



39-INCH FENCE 28 CENTS A ROD

Made of high-grade galvanized wire. Write for catalog and prices

NATIONAL FENCE COMPANY
Columbia and Water Sts. PORTLAND, ORE



The New Era Auto-Irrigator—Works While You Sleep

The thing you have been looking for—something which will distribute your water into furrows with a uniform rate of flow and not require your continued attention. It has been thoroughly tested for two years and its users speak in enthusiastic praise of its work. The more rough and more difficult your land is to irrigate the more the advantages of this irrigating device appear. It consists of a canvas hose with apertures along one side, spaced about 20 inches apart, from which the water escapes into the furrows. These apertures are fitted with a regulating device to regulate or stop the flow of water. The hose is tapering in form to conform to the gradually diminishing volume of water. The standard size is 75 feet long and 6 inches in diameter at large end, and tapers to 1½ inches diameter at small end, which is open. It has a capacity of about one-half cubic foot of water per second when the water in the ditch is raised about 8 inches above the level of the land. This will require that your ditch banks be thrown up a little higher than they generally are at present. The hose is easily and quickly set in operation by connecting it with a pipe set into the ditch bank. The end of pipe in the ditch has a cylindrical screen fitted over it to prevent the entrance of leaves, etc. The hose is light and when one strip of land is irrigated it is easily carried to the next strip. Where more than one hose is needed they can be used in a series, according to the number needed. This device will pay for itself in two months' use or less, besides saving from 20% to 50% in your water and producing better crops by the uniform application of water, and also preventing your land from washing. For fuller details send for descriptive circular. Will make a special discount on the first five irrigators bought and used in any community. We desire implement dealers to sell this great labor and water-saving device in every town, or agents to demonstrate and sell it. Good money for live men. Can be mailed anywhere in the United States by parcel post.

For particulars and prices address

THE AUTO-IRRIGATOR MFG. CO., Box 609, Denver, Col.

How to Use the KIMBALL CULTIVATOR

to keep your Orchard in Perfect Condition



THE first thing in the spring, as soon as the ground is dry enough, it should be well plowed or disc'd both ways, or diagonally if the trees are planted in that manner.

The rest of the season nothing is needed but the KIMBALL, which should be run over the ground at least twice each month during the summer, or as soon as the ground is dry enough after a hard rain, or after irrigation.

This will break up the crust and stop evaporation, for when the soil bakes and opens in cracks is the time of the greatest evaporation.

More cultivation and less irrigation will produce better fruit, and it will keep longer than where too much water is used.

It is now for fruit growers to be thinking of how they can keep their orchards in good shape at the least possible expense.

For this work there is nothing that will equal the Kimball Cultivator.

While we know the fruit market is bad, we also know it will not always be in this condition, and the grower who neglects to cultivate his orchard at this time will lose the years of labor he has already put in on it, for an orchard that is not cultivated is soon a total loss.

Therefore get a Kimball and continue the good work.

MANUFACTURED BY

W. A. JOHNSTON, The Dalles, Oregon

BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

The Cost of Distributing the California Citrus Fruit Crop

By G. Harold Powell, General Manager California Fruit Growers' Exchange, Los Angeles, California

THERE are approximately two hundred thousand acres of citrus fruits in California, representing an investment of \$200,000,000. Eighty-three per cent of the total acreage in 1913 were oranges and seventeen per cent were lemons. Two-thirds of the groves were of bearing age in 1913; 85 per cent of these were oranges and 15 per cent were lemons. There are now 32,556 acres of lemons in California, 14,500 of which are non-bearing age. When the non-bearing lemon groves come into bearing, the lemon production of the state, even with a moderate yield, will exceed the present total lemon consumption of the United States and Canada.

There has been a steady increase in the acreage devoted to citrus culture in California since the introduction of the Washington navel orange in 1873. In the ten years from 1903 to 1913, the citrus area increased from 83,657 acres to 191,357 acres, an increase of 128.9 per cent; oranges increased 138 per cent and lemons 82 per cent during this period. In the five years from 1908 to 1913, the total area increased 29.1 per cent, the increase for oranges and lemons being 23.3 and 67.6 per cent respectively.

The shipment of citrus fruits has also increased rapidly. The increase in five-year periods in the number of carloads of oranges and lemons is as follows: From 1895 to 1900, 225 per cent; 1900 to 1905, 71.5 per cent; 1905 to 1910, 10.9 per cent, and 48.5 per cent from 1910 to 1914. A normal crop now is 50,000 carloads, one-seventh of which are lemons. Of the oranges, approximately 63 per cent are Washington navels, 27 per cent Valencias and 10 per cent miscellaneous varieties. The Valencia shipments increased 60 per cent in 1911 and will increase rapidly in the near future.

There has always existed a fear since the beginning of the California citrus industry lest the increase in production might outrun the increase in consumption; or, to state it differently, that there might be more citrus fruits produced than the people could consume at a price that would pay the producer. The total consumption of citrus fruits is increased in two ways: first, through the increase in population, and second, in the increase in the per capita consumption. The increase in population is not rapid enough to absorb the increase in the production of citrus fruits. The population of the United States increased 20.7 per cent from 1890 to 1900; the shipments of citrus fruits

increased 195 per cent during the same period. From 1900 to 1910 the population increased 21 per cent, while the shipments increased 292 per cent during the same period. The consumer is using more fruit than in former years, and is using it more and more as an article of food rather than a luxury. It is through the increase in the fruit-eating habit of the people that the enormous increase in fruit production is taken care of.

In order to stimulate consumption and to insure a fair return on the investment, the industry has been obliged to eliminate speculative distribution by placing its own agents in the different markets of the United States and Can-

ada, through whom the grower sells the fruit to the jobber after the latter determines its condition, or sells it to him subject to condition on arrival. In some markets the fruit is sold on an f.o.b. California basis. The industry is creating a public consciousness of the food value of citrus fruits by advertising on a national scale; it is stimulating the sale by co-operating with the retail dealers and with the jobbers and traveling salesmen by furnishing them with display and advertising material and information on the citrus industry.

solved by scientific research. Through better handling methods the industry has lessened decay and has thereby reduced the risk of the jobber and retailer.

There are few American industries that have been benefitted more by the application of systematic, organized business methods to its problems than the California citrus industry. Until recently, its investigations ceased with the production of the fruit and with its distribution to the jobbers of the country. But as the prosperity of the industry always waits upon the increase in consumption of the fruit at prices profitable to the producer, the industry has undertaken an investigation of the distribution after the fruit reaches the market in order to see how the handling of its own problems can be improved and how its co-operation with the jobbers, the retailer and the consumer can be made more effective, its advertising more direct, and the wastes of distribution eliminated. The distribution of the nation's food supplies is far more complex than the problems of production, because of the intricate, interwoven relationships of transportation, finance, the assembling and distribution to the consumers after a product reaches the market. The standard of living of the American consumer has changed radically in the last generation and the demands of the consumer impose a series of conditions upon the distributing agencies that are increasing in complexity.

The investigation of the distribution of the citrus fruit crop has been made in the principal cities of the United States and Canada through the co-operation of the jobbers and retailers with agents of the industry located in these places. It has not yet been extended to the rural districts. The method of investigation, so far as it relates to the costs, follows: Beginning in January, 1911, the agents, starting with the delivered price of oranges, to the jobbers, of the 126, 150, 176 sizes, and of the 300 and 360 sizes of lemons, determined the price which the leading jobbers in each place charged the retailers on the same grades and sizes, and then determined the retail price to the consumer, both on the box and dozen basis. The data were accumulated every two weeks on the same grades and sizes during the entire year, thereby giving a large number of consistent reports from many places. To illustrate the results of the investigation, thirty representative cities and towns were selected. There are 5,185 reports on oranges from jobbers and

Features of this Issue

COST OF DISTRIBUTING CALIFORNIA CITRUS CROP

REPORT OF NORTHWESTERN FRUIT EXCHANGE

SALES MANAGERS OF NORTHWEST FRUIT SHIPPING CONCERNS

NORTH PACIFIC FRUIT DISTRIBUTORS BY-LAWS

INTER-CROPPING ORCHARDS

ORCHARD COSTS

OUTLOOK FOR PRUNES

ada, through whom the grower sells the fruit to the jobber after the latter determines its condition, or sells it to him subject to condition on arrival. In some markets the fruit is sold on an f.o.b. California basis. The industry is creating a public consciousness of the food value of citrus fruits by advertising on a national scale; it is stimulating the sale by co-operating with the retail dealers and with the jobbers and traveling salesmen by furnishing them with display and advertising material and information on the citrus industry.

The industry has also made a searching investigation of the cultural and labor costs of production, in order that it may better understand its problems; it has organized on a co-operative basis, the purchase of materials used in the packing houses and in the groves, and it has secured the aid of the state and federal governments in order that its business may be conducted economically, and cultural and fruit handling difficulties that confront it may be

retailers. By taking the average price paid by the consumer, it is possible to make a distribution of the consumer's dollar back to the grower and to show the different factors which enter into the consumer's price. Taking the thirty representative markets as a whole, including the 5,485 reports extending over the year 1914, the factors entering into the consumer's dollar are as follows:

Retail distributing cost (gross).....	33.3%
Jobber's distributing cost (gross).....	8.2%
Grower's selling cost.....	1.5%
Freight and refrigeration.....	20.5%
Packing house cost.....	7.4%
Picking and hauling to packing house..	2.4%
Proportion returned for fruit on the tree	26.7%

Consumer's Dollar represents.....100 %

Summarized, the data shows that 36.5 per cent of the consumer's dollar is returned to the grower in California, of which 9.8 per cent represents the proportion allotted to picking, hauling and packing; 20.5 per cent represents the allotment to transportation; 1.5 per cent the grower's cost of selling the jobber, and 41.5 per cent the proportion represented by the jobbing and retail gross distributing costs, the latter representing four times as much as the former. The amount of the consumer's dollar allotted to each factor referred to in the table should not be confused with the cost of handling each of these items. The average cost of picking and hauling a packed box of oranges from the grove to the packing house is 10.5 cents; the average cost of packing and loading on the cars is 32.4 cents per box; the average cost of freight and refrigeration is 90.7 cents per box; the average grower's cost of the co-operative method of selling, including advertising, is 6.6 cents per box; the average mark-up of the jobber is 14.2 per cent on the purchase price; the average mark-up of the retailer is 49.8 per cent on his purchase price, both of the latter figures including the loss from decayed fruit.

A considerable variation has been found in the proportion of the consumer's dollar that goes to the jobber and retailer in different parts of the country. West of the Rockies and in Canada, for example, the jobbers' costs are higher than in the East or in the Mississippi Valley, on account of higher labor costs, higher rents, higher interest and greater geographical distances to be covered by the traveling salesmen of the jobbers. These costs are reduced in the older, more densely populated parts of the country, where interest rates are lower and where the various costs of distribution are more economically accomplished. The jobbing costs of the eastern half of the United States are often not more than one-half the corresponding costs in the West. There is an equally wide variation in the distributing margins in different cities, sometimes due to the efficiency of the men engaged in the jobbing business, sometimes to natural local conditions, and sometimes to understandings between different jobbers through which a minimum margin is established. The record shows that in one city the average mark-up of the jobbers is ap-

proximately 10 per cent. There is the most active competition there, turnovers are quick, the margin on each transaction is small, and the per capita consumption is high. In another city in one of the richest, most fertile states, where a few friendly jobbers work together, buying cars of fruit jointly and selling at a high margin on each turnover, the average mark-up for the year is 22 per cent. The consumption there is restricted, sales are slow, and the business is transacted on an artificial competitive basis. There is apparently a considerable variation in the margins, due to the number of times a jobber or a retailer turns over his capital. Quick sales at a small margin of profit is the policy usually followed by those who specialize in the citrus fruit business. They make their annual profit on a large, steady volume of business. They attract the consumer with fruit that is always fresh, attractively displayed and at reasonable prices. They stimulate consumption by advertising and in other ways. Others, especially among the country retailers, or among jobbers who carry citrus fruits as a side line, do not specialize or push sales. Their losses from decay and off condition are large and their margin on each turnover must necessarily be large to protect themselves against fluctuation in prices. These dealers are not important factors in increasing the per capita consumption. The margins charged by the retailer may run as high as 75 per cent above the cost in some cities, while in others it drops as low as 20 per cent.

We desire to bring out another phase of the orange distributing business. It relates to the fluctuations in the jobbers', retailers' and consumers' prices. The impression is widespread that the consumer's price does not fluctuate with the retail purchase price, and that the jobbers' price to the retailer does not fluctuate with the price paid the producer. In order to determine the facts, we have taken the carlot, the jobbers' and the retailers' prices in twelve representative cities for one year and have charted the fluctuations in the respective prices. They are shown in the diagram herewith.

From this chart it will be seen that the three prices, taken as a whole, do follow each other with almost exact regularity, and this must necessarily follow where the competition between the different wholesale and retail dealers exerts itself naturally. There are many exceptions to the general rule, where the retailers or the jobbers maintain a somewhat uniform price throughout the year, and especially where the jobbing and retail prices are held abnormally high after the producer's delivered price has been reduced. This is especially true where the fruit is carried as a side line to meet the ordinary demands of the customers of a store. It may be more true in the country districts where there is not so active a competition in the sale of fruit and in markets where the forces of competition do not operate naturally. When the producer's price is low, the con-

sumer reaps a benefit only when the price of the jobber and retailer is reduced correspondingly.

No attempt will be made to interpret these figures at the present time except in a general way. The citrus industry is vitally interested in seeing the cost of production and of distribution reduced to a minimum by a more efficient organization of every distributing process, and by a better understanding of the problems of each factor, to the end that a more effective co-operation between them all may be brought about. The industry recognizes that the distribution of a food product is a series of complex operations; that the railroads, the jobbers and the retailers each perform a vital economic and social service in bringing the producer and consumer together; that each should receive a fair return for the service he performs, and that a more efficient and direct service should be the aim that each should strive for, if the basic factor, the industry which furnishes the fruit, is to prosper. It also recognizes that many of the conditions under which food supplies are distributed in the cities are created for the jobbers and retailers by large economic forces and by the requirements of the consumer, which are beyond their power to influence or control. But if the producer, as well as the distributing agencies, the railroads, the jobbers or the retailers are not effectively organized, or if they are not following sound merchandizing practices, their overhead cost are excessive and they impose an undue burden on both the producer and the consumer, consumption is restricted, the investment of the producer is jeopardized, and the stability of the industry is threatened. We may suggest in a general way some of the conditions which seem desirable to be brought about.

First, on the part of the producer, it is essential that he furnish the jobbers and retailers a uniform supply of citrus fruits of dependable grade and pack and of good keeping quality if a stable merchandizing business is to be developed by either. Variable grades, packs and keeping quality increase the hazard of fruit merchandizing and the jobber and retailer must necessarily add a margin large enough to cover these risks. Uniformity in grades and supplies stabilize trade and the margins naturally adjust themselves on a lower level. This is a fundamental requirement in fruit merchandizing often overlooked by the producer, difficult to handle on account of the large number of growers involved, but one in which progress is being constantly made. The producer must utilize every known agency under his control to produce a higher grade of fruit, at a lower cost of production. To this end he is also making progress, with the aid of the state and federal governments, though there is no immediate prospect that the costs of production will be reduced. Rather are they growing higher on account of the higher costs of material and labor. If now costs the producer an average of \$1.29 per box for oranges

and \$1.90 per box for lemons to produce the fruit, handle it, and place it on the cars for shipment.

Whether the cost of transportation will be reduced only the future can develop. At the present time the industry is shipping the fruit under rates established by the railroads and sustained as reasonable by the Interstate Commerce Commission. They represent \$1.00 per hundred pounds on lemons and \$1.15 per hundred pounds on oranges. The orange rate represents 20.5 per cent of the consumer's dollar, based on the representative prices of 1914. The average haul of oranges is approximately 2,500 miles, absorbing thereby a larger proportion of the consumer's dollar than other products contribute where the sources of production and consumption are closer together.

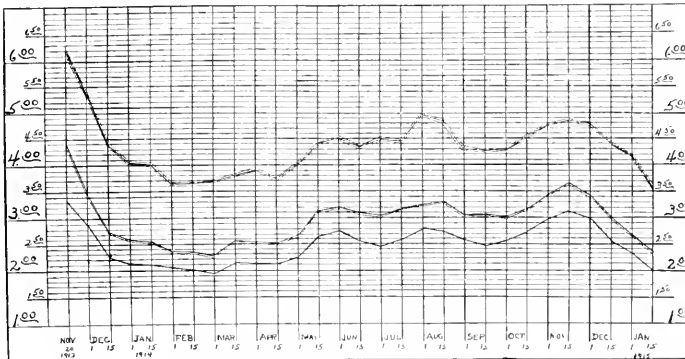
The position of the jobber in the distributing system is widely misunderstood. To the so-called middleman the high cost of distribution is popularly ascribed, and there is a widespread agitation that he be eliminated. This investigation shows that 8.2 per cent of the consumer's dollar, or a mark-up of 14.2 per cent, represents his margin, and that he is not the leading factor in the cost of distribution. The jobber performs a distinct function that must be performed by someone in assembling the fruit in the towns and cities, in developing trade with the countless retail dealers in the rural districts and cities, and in blanketing the credit and other distributing risks for the producer. His function is somewhat similar to the banker, who furnishes the money through which trade can be conducted, except that his business is not so highly organized, is not under state and federal direction and control, the abuses are not so easily corrected, and they are therefore featured in the popular mind out of proportion to their true relation to the business of the middleman as a whole. The jobbing interests of the country owe it to themselves to see that the unprincipled middleman is eliminated; that practices of every kind that are unfair to the producer are cut out; that any practice that slows down the natural forces of competition and thereby reduces consumption be brought under strict regulation. In no other way can the legitimate function of the fruit jobber in bringing the producer and retailer together be properly developed and safeguarded against radical legislative action that may in the end be undesirable for both the producer and the consumer alike. We would suggest that the jobbing interests of the country seek the co-operation of the Bureau of Markets of the United States Department of Agriculture, to the end that a co-operative, systematic investigation of all the conditions surrounding the function and the practices of the jobbing trade be made. This investigation would reveal the wastes in the wholesale distributing system and it would furnish the basic facts on which the jobber's relationship to the public and to our modern industrial life could be more clearly understood. Other

industries, such as the cold storage interest, the railroads, the handlers and shippers of fruit, poultry and eggs, have been greatly benefitted by co-operative investigations with the constructive branches of the federal government. It is not too much to hope that such a co-operative investigation would have a far-reaching influence on the economic phase of the wholesale distributing business and on the relationship of the jobber to the producer, to the retailer and to the public at large.

This investigation brings out clearly that the most important factor in the cost of distribution, next to the cost of transportation, is the retail distribution, which represents one-third of the consumer's dollar. The amount of the

demands, and the cost of the fruit is but one of the factors in the consumer's price. The simpler the service, the less the overhead cost, and, in those cases, the consumer pays primarily for the fruit, with only a comparatively small overhead charge added for service and profit.

The retail distributing business is a vital link in the chain between the producer and the consumer. The desire for fruit is awakened by suggestion, by seeing attractive displays of fresh, luscious fruit in the windows of the store, on the counters, or in other forms of display. It is stimulated by the attractive fruit stands and by the push carts laden with golden oranges, by advertising in the magazines, the newspapers,



Fluctuations in Carlot Jobber's and Retailer's Prices.

— Jobber's Cost - - - Jobber's Selling Price ····· Retailer's Selling Price

consumer's dollar represented by the gross retail cost is four times the amount represented by the jobber's cost. It is more than the proportion absorbed by the cost of transportation and the jobber's cost combined. It is nearly equal to the amount returned for the fruit on the tree, which includes the cost of production and the grower's profit, and the cost of picking, hauling and packing.

There are several classes of retailers engaged in the fruit business: the fancy fruit store, the high class grocery store, the average grocery store, the chain store, the fruit stand and the fruit vender. The present retail system is largely the result of the demands of the consumers which each class serves. A retailer's overhead charge includes store rents, salaries and wages of employes, interest on capital, cost of purchasing, re-sorting, displaying, storage, and delivering goods, taking orders, telephone, light, heat and other store expenses, losses from decay and deterioration, taxes, insurance and other necessary expenses. Most of the expenses are also included in the jobber's overhead costs. Where the fruit is sold from push carts and street stands, some of the expenses are eliminated or are reduced. In the fancy fruit stores and in the large grocery stores which cater to the well-to-do, these overhead charges are naturally larger. They make up the cost of the service which the consumer

the street cars and other advertising mediums. It is promoted by prices which bring the fruit within the reach of the average consumer. The retail dealer, more than any other factor, creates this appetite appeal, because he comes in direct contact with the consumer, and he stimulates or retards it by charging reasonable or exorbitant prices.

The retail dealer must therefore know how to make artistic fruit displays if he is to catch and sustain the interest of the consumer. The fruit must always be fresh in appearance, free from decay and appetizing in every way, and the price must be reasonable. If the appeal to the consumer's appetite is not strong and continuous, the retailer does not increase the consumption. If the price is not reasonable, the fruit cannot be purchased by the average consumer. If the sales are not rapid, it wilts, loses color, decays and is a drag on the hands of the retailer. Under these conditions the retailer, unless he is a fruit specialist, does nothing to encourage sales. The unattractive fruit is destroying the desire on the part of the consumer, the losses from bad condition are excessive and the retailer must add a margin large enough to cover these losses and risks. Attractive displays and quick sales, at a reasonable margin of profit on each transaction, increase the per capita consumption and make a satisfactory profit for the dealer at the end

of the year. Any other system jeopardizes the interest of the producer, reduces the volume of business of the jobber, and keeps the net profit of the retailer below what it otherwise might have been.

The retail fruit business needs the same careful investigation as that suggested for the fruit jobber, with a view to improving the entire retail business system, to developing better methods of creating an increased consumption, and of putting the entire retail system on a basis which will make it the most vital factor in handling the rapidly increasing fruit crop. To accomplish this end, the average retail fruit dealer needs the co-operation of the producer and the jobber. The consumer demands a service that imposes a heavy overhead charge on the retailer's operations—a condition which the producer does not usually appreciate. In all of these operations the consumer is king. By gaining his confidence and serving his best interest, the interests of the producer, the jobber and the retailer are assured. Without the interest of the consumer, all merchandizing efforts must fail. The aim of every factor in the fruit business should be to stimulate the desire of the consumer for fruit, and then to give him an attractive, fresh, wholesome supply at a price which pays a reasonable profit to every factor in-

involved and yet be well within the consumer's reach.

Whether the jobbing and retail fruit business is organized along economical and efficient lines, whether the purchasing, the deliveries, the credits and other features of the business are handled with the fewest number of steps and with a minimum of economic waste, and whether the handling of the business by producer, jobber and retailer serves the best interest of the consumer the author is not prepared to say. It is recognized that both the wholesale and retail systems are products of modern industrial and social life and that changes in the system must progress slowly. The facts outlined in this discussion are not presented in a spirit of criticism, but in the hope that they may lead to investigation and to a clearer understanding of the different phases of distribution; that they may induce the jobbing and retail fruit interests, the railroads and the producer to study their own problems more carefully, and to study the problems of every other factor as well, to the end that the fruit distributing system from the producer to the consumer may be made more stable, more direct, more efficient, with every wasteful step and process eliminated and all handled to gain the confidence of the consumer and to serve his best interests.

Northwestern Fruit Exchange Report

ALTHOUGH Northwestern apple growers are discouraged because of low prices in 1912 and 1914, it is now discovered that the average for five years, including these two disastrous seasons, is around one dollar per box net to the grower. This is a fair indication that the same average will be maintained for the future, assuring affluence and independence if orchardists take proper precautions to meet inevitable fluctuations from year to year. The situation is thus summed up by W. F. Gwin, vice-president and general manager of the Northwestern Fruit Exchange, in announcing today the general average returns both for the current season and the past half decade. All selling charges deducted, the Cashmere Fruit Growers' Union realized 69 cents per box on 189,167 boxes, which is all of the 1914 crop for which accounting was completed on December 31st, 1914. It is not expected that the final results will change this average much, but it might be a few cents less. For five years the Cashmere average is 97½ cents on 677,982 boxes, all grades and varieties. The only other growers' organization which has used the Exchange central selling agency for five years is the Rogue River Fruit and Produce Association of Medford, Oregon. The average for 1914 is 81 cents per box; for the five-year period it is \$1.04 on total shipments of 317,580 boxes. Judging from averages for other districts computed on December 31st it is expected that the general crop average for 1914 to all Exchange ship-

pers will be between 60 and 65 cents per box.

"The orchardist must take the excess above a dollar per box in the good years," declared Mr. Gwin, "and create therewith a sinking fund to finance himself in the poor years. Having received this warning, he should not complain if bankruptcy overtakes him as a result of dissipating his reserve in land and stock speculations, automobiles, fine residences and trips abroad. These things are all right when we can afford them; but the last thing we can afford is to gamble with the capital required to operate our business. Just now the grower is suffering a severe headache, the result of a prolonged speculative debauch. The thing to do is sober up and face the situation the same as other business men are doing. The result is sure to be lasting prosperity. The troubles with apple growers are chiefly due to their own misapprehensions," insisted the marketing official. "They have proceeded on the theory that production and prices from year to year are stable. Nothing in the history of the industry, either here or elsewhere, justifies such supposition; nevertheless, orchardists have adopted this false assumption quite generally and have followed it to inevitable grief. The figures we give out today afford both explanation and remedy for existing conditions. In the future there will be years when prices will fall as low as they did in 1912 and 1914. There will also be seasons of high prices like those of 1910, 1911 and 1913.

Therefore it is of vital importance to the apple grower to figure his business, not from year to year as he has been doing, but on the basis of not less than a five-year period."

The fluctuations of the apple market from year to year are very apparent in the following tabulation of returns net to the Cashmere Fruit Growers' Union of the Wenatchee Valley, selling charges of the Exchange having been deducted, showing total apple shipments and average prices per box for all three grades by years (to get the net returns to the individual grower, deduct five cents per box, the local assessment to cover cost of assembling, loading, etc.):

	<i>Extra Fancy</i>		<i>Fancy</i>	
1910	32,543	\$1.35	8,396	\$1.11
1911	36,240	1.62	8,770	1.27
1912	113,322	.75	40,468	.54
1913	97,899	1.58	58,013	1.31
1914	100,007	.79	57,616	.64
5 years	380,011	\$1.11	173,263	\$0.90
	<i>Choice</i>		<i>General</i>	
1910	11,576	\$0.85	52,515	\$1.20
1911	15,486	.93	60,496	1.39
1912	39,764	.61	193,551	.68
1913	26,388	.83	182,250	1.38
1914	31,514	.46	189,167	.69
5 years	124,708	\$0.68	677,982	\$0.97½

It will be noted that the average of the yearly averages is \$1.06, whereas the average on the total tonnage of 677,982 boxes is 97½ cents. This seeming discrepancy is explained by the fact that the shipments in 1910 and 1911, when prices were good, were about a third of the tonnage in the poor years, 1912 and 1914. Manifestly, if the tonnage had been the same in all five years, the average to the Union would have been \$1.06 per box, or \$1.01 net to the grower. As a matter of fact, some members of the Union have actually received more than an average of one dollar because they had exceptionally good varieties and grades. The reason for the superior average of Rogue River is that most of its apple tonnage consists of Yellow Newtown Pippins and Spitzenbergs, varieties which command good prices, whereas Cashmere has also a big volume of varieties like Ben Davis, Black Twig, Jonathan, Stayman and Gano, very prolific and profitable, but showing a low net average per box.

The following gives total tonnage and grand average per box for five years from Spitzenbergs and Newtowns from the two districts:

	<i>Variety</i>	<i>Cashmere</i>	<i>Rogue River</i>
Spitzenbergs	153,725	\$1.40	61,507
Y. N. Pippins	20,701	1.17	165,150
			\$1.07
			1.19

Statistics have been collected which show average annual yield of 500 boxes per acre in the Cashmere district. Trees above six years of age which do not yield this equivalent are regarded as defective. Scores of orchards have a record of better than 800 boxes for many seasons. Opinions differ on cost of production. Some claim the expense is less than 50 cents per box, while others say 65 cents. It depends on widely varying conditions. Growers generally say they can pay themselves a good salary, provide comfortable homes for their families and realize 12 per cent on their investment if prices will average a dollar per box.

Sales Managers of the Northwest Fruit Shipping Concerns

MR. W. F. GWIN, vice-president and general manager of the Northwestern Fruit Exchange, was born in Baltimore, August 16, 1880, being now nearly 35 years of age. Mr. Gwin during his boyhood school days attended the public schools in the City of Baltimore, afterwards attending the Baltimore City College. Mr. Gwin began his business career with The H-O Company, the big cereal mills of Buffalo, New York, made famous by originating and introducing the breakfast food known as "Forcee," of which the famous "Sunny Jim" campaign was the leading advertising feature. Mr. Gwin was with this company during the campaign and continued with them for seven years, starting in as sub-salesman, later working up to the position of territorial sales-manager. Later upon the invitation of Arbuckle Bros., the celebrated Arbuckle coffee manufacturers of New York, he entered their employ, organizing a field sales force. In his comment upon his experience in connection with Arbuckle Bros., he presents some serious thought for the fruitgrowers, which is so well expressed in his own words that it seems wise to quote:

"When you and I were boys and for many years prior to that Arbuckle's Ariosa Coffee was an article of almost universal consumption in every part of the United States. It was sold alike in mining camps and fashionable groceries in the large population centers. It was the most extensively advertised commodity on the domestic market. Millions had been spent to advertise it. It became an article of such universal sale that it was naturally adaptable as a trade leader. Grocers began to cut the price in order to attract customers to their stores, hoping to sell them

other articles at the same time. Finally it became customary to sell the article at cost. After a good many years of this sort of thing the grocers began to make determined efforts to root the article out of their trade. No effort was made by the manufacturers to

maintain a total of 5,000 cars annually. While associated with this firm Mr. Gwin took his first trip to the Northwest and states he became much interested in this country. While in the Northwest he organized the Kenmar Orchard Company, of which he is secretary and treasurer, which owns eighty acres of orchard property in Southern Oregon near Medford. He finally decided to cast fortunes with the Northwestern Fruit Exchange, coming out in 1910, being instrumental, together with a number of prominent orchardists, in organizing the Northwestern Fruit Exchange, of which he was elected manager, which position he still continues to hold. Mr. Gwin draws a conclusion in connection with the Arbuckle story already related which is well worth repeating to the fruit-growers for their consideration:

"That whereas fruitgrowers out here are tremendously exercised over the condition that undoubtedly exists, of exorbitant profits being exacted by retailers, they should remember that they themselves are responsible for the organization of the industry in all of its relations, and that these conditions will never be satisfactory until they themselves study the causes and seek to remove them. They can be removed not by any arbitrary dictation, but only through intelligent co-operation with the trade. They must approach the whole question in a spirit of sympathy and fairness. Arbuckle's Ariosa went down to defeat because the dealers did not get profit enough, an exactly opposite cause, you see, to the fruitgrowers' complaint, and yet both extremes converge to the same issue. In other words, it is just as dangerous to the producer for the trade to



H. M. GILBERT

President and Manager of the Bichey & Gilbert Company, North Yakima and Toppenish, Washington, which is now in combination with the Yakima Horticultural Union and the Yakima Fruit Growers' Exchange in the selling forces under the head of the Yakima Fruit Sellers, with Mr. Gilbert as general manager.

overcome this condition and consequently at last the sales began to diminish and in large sections of the country almost entirely vanished. My job was to put the article back into the trade on a plan which took cognizance of the situation and was designed to protect the dealers who handled the brand. The State of Iowa was selected for the test because that territory was absolutely as near zero from a sales standpoint as anywhere in the country. It was the hardest sales proposition I ever tackled. I had a pretty free rein and eventually bought eight horses and had Studebaker build special wagons and put a crew of salesmen with a stock of coffee on the wagons and covered every store, crossroads and all, in the State of Iowa. We put the brand back into 75 per cent of the stores of the state and extended the campaign into other states."

Mr. Gwin's introduction into selling green perishables was in 1907 when he entered the employ of the California Vegetable Union. While in their employ he was invited by Crutchfield & Woolfolk of Pittsburg, one of the largest produce houses in the United States, to assume the position of sales-manager for their carlot distributing business, which included a wide variety of fruits and vegetables originating in all parts of the country and approxi-



W. F. GWIN

Vice President and General Manager of Northwestern Fruit Exchange, with headquarters in the Stuart Building, Seattle, Washington.



FRED EBERLE

Sales Manager for the Horticultural Union, now combined in selling forces with the Yakima Fruit Sellers, North Yakima, Washington, of which Mr. Eberle is assistant manager.

make too little profit on his products as too much. It is a regrettable fact that whereas the retailers in Northwestern fruits have perhaps been charging too great profits the direct customers of the growers out here, that is the wholesaler dealers, have in the past five years made too little profit. The consequence is that they become harder and harder to interest each year. This whole question of the equities and the balances in the commercial relations of producer, jobber and retailer is one which is worthy of mighty serious study."

Mr. Gwin is so well known by the fruitgrowers of the Northwest and the trade in general any personal remarks on the part of the editor would be



B. A. PERHAM
Sales Manager for the North Pacific Fruit
Distributors, with headquarters at
Spokane, Washington.

faint praise. Mr. Gwin, in addition to having experience and training with two very large commercial companies, The H-O Company and Arbuckle Bros., has had eight years' experience in selling green fruits, being connected with some of the largest institutions in the United States in this line, viz., The California Vegetable Union, Crutchfield & Woolfolk and the Northwestern Fruit Exchange. Mr. Gwin is regarded by all who know him well as being a man of splendid ability, a good organizer, an expert on system and accounting and has the highest ability as salesman and sales-manager. It was in recognition of these qualities, which he possesses to the fullest extent, that he was selected as general manager of the Northwestern Fruit Exchange.

MR. H. M. GILBERT was born near Geneseo, Henry County, Illinois, on a stock farm, October 22, 1862—52 years old. Graduated from six-years' classical course at Knox College, Galesburg, Illinois, in 1885, with an A. B. degree. His wife also graduated in the same class. Mr. Gilbert was honored

with an A. M. degree a few years later. Came to North Yakima, Washington, in the fall of 1897. Planted his home orchard in 1898.

Organized Richey & Gilbert Company in 1900, of which he has been president and manager continuously and made it a large and efficient marketing agency. Mr. Gilbert has accepted the position of general manager of a new selling agency, the Yakima Fruit Sellers. This company combines the selling forces of the Yakima County Horticultural Union, Yakima Fruit Growers' Exchange and Richey & Gilbert Company, which together shipped nearly 2,500 cars of fruit last season.

Main interest is that of a grower, having nearly 400 acres of apple orchards. Is president of Tieton Water Users' Association, a government project, irrigating 34,500 acres near North Yakima. President of Central Bank, Toppenish. Did some good advertising in the Orient for boxed apples in a trip around the world in 1913 with his wife and family of seven children. Believes positively in the Growers' Council movement and in an efficient, economical arrangement on a reciprocal basis to harmonize the marketing of fruit in the Northwest.

MR. FRED EBERLE, whose photograph appears in this issue, is a native of Missouri and was born in that state thirty-eight years ago. His education was obtained in the high schools of Wathena, Kansas, and at the University at St. Joseph, Missouri. He began his business career with the firm of John A. C. Gordon of Wathena, who was at that time an extensive shipper of Northeastern Kansas fruit, no doubt acquiring at that time a taste for that line of business, which has made him so successful at the present time. Mr. Eberle is considered one of the best posted and efficient sales-managers of the Northwest, having had experience for years as traveling salesman. He has a large acquaintance among the trade and this acquaintance is of great value to him in his present position. He has been with the Yakima County Horticultural Union for five years, four years as salesman on the road and the past season as assistant manager, and has naturally had considerable influence in shaping the policies of the Union. Beginning with April 1st of this year, he takes up the duties of sales-manager for the Horticultural Union and assistant manager for the Yakima Fruit Sellers, who will handle about 3,000 cars the present season. As a man, Mr. Eberle has a friend in every acquaintance and inspires confidence with both grower and shipper alike by his alert and businesslike methods and well-balanced judgment.

MR. H. F. DAVIDSON was born on his grandfather's farm in Knox County, Ohio, near Mt. Vernon, July 20, 1868, and is now nearly 47 years of age. His father, Charles Davidson, was a carriage manufacturer near Lima, Ohio. Mr. Davidson spent his early boyhood

days in Lima, where he attended school. In 1882 his father moved to Canton, Illinois, with the family. Mr. Davidson continued his school work, later taking a commercial course in a private school, afterwards attending the Indiana Normal School at Valparaiso, and after graduation teaching school for several terms in the State of Illinois. In 1890 Mr. Davidson came to Oregon, settling in Hood River. In 1891 he became active in developing the irrigation system on the west side, now known as the "Farmers' Irrigation Co." Mr. Davidson was one of the original incorporators and the first manager of the Hood River Fruit Growers' Union, which was organized in 1893, being the first co-operative



H. F. DAVIDSON
President and Manager of the Davidson Fruit
Company of Hood River, now combined with
the Apple Growers' Association of Hood River.
Mr. Davidson was for two years president of
the North Pacific Fruit Distributors. He is
president of The Fruit Sellers and Board of
Control and will have an official position with
the Apple Growers' Association of Hood River
for the coming season.

fruitgrowers' association formed in the Northwest, afterwards merged with the Hood River Apple Growers' Union, which is now included in the Apple Growers' Association of Hood River. In 1907 Mr. Davidson resigned as manager of the Hood River Fruit Growers' Union, incorporating the Davidson Fruit Company, which continued to be a prominent factor in fruit growing and shipping for many years. In the year 1912 Mr. Davidson, becoming convinced that the future prosperity of the fruitgrower, he being a fruitgrower owning a large acreage, depended upon co-operative work and that better prices could be obtained through co-operation, there being a number of competing individual shipping concerns, so therefore he merged the Davidson Fruit Company with the Hood River Apple Growers' Union, forming the Hood River Apple Growers' Association, the latter buying out

Continued on page 14

Loosen up a bit on this say-so:

You lay-to long enough to buy some Prince Albert tobacco. Jam your old jimmy pipe brimful to the spilling-spot, or roll a makin's cigarette, make fire with a match—and go on. *For you've got yours!*

That's all there is to it—this digging fun out of a pipe or a cigarette—if you follow suit and play the game via P. A., *because then* you've switched to the right track! And your tongue will be fine-like-silk whether you smoke one load or a hundred!

For Prince Albert is made by a patented process that *cuts out* tongue-bite and throat-parch! Now, you just let it sift in that no tobacco ever was, or can be made like

PRINCE ALBERT

the national joy smoke

Quit teasing your smokeappetite. Don't let your palate protest every time a whiff of jimmy pipe joy or cigarette makin's happiness breaks into the atmosphere!

Cut-loose with a pipe or cigarette and a tidy red tin of P. A. and

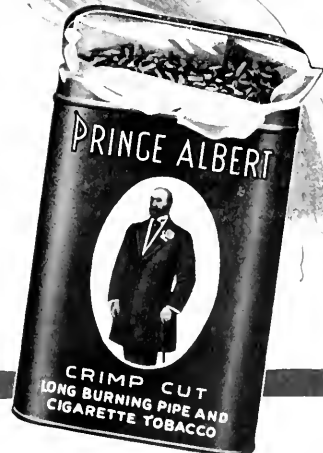
swing open your chest to some spring smoke-sunshine. For then you'll qualify to be a real and true pipe-r on the P. A. band wagon, which means 33d degree tobacco happiness—and a guarantee that you'll be jimmy pipe joy'us and cigarette cheerful!

Prince Albert smokers everywhere are enthusiastic over the classy pound crystal-gloss humidor with the sponge-moistener top which keeps the tobacco in fine fettle—always. It's a thing of joy for every man who smokes a pipe or rolls his own cigarettes. Prince Albert is also sold in toppy red bags, 5c (handy for cigarette smokers); tidy red tins, 10c; and handsome pound and half-pound tin humidors.

R. J. REYNOLDS TOBACCO COMPANY, Winston-Salem, N. C.



Copyright 1915
by R. J. Reynolds
Tobacco Co.



Let us furnish you estimates
on your

Fruit Labels

DISTINCTIVE AND ARTISTIC DESIGNS FURNISHED
THE SIMPSON & DOELLER COMPANY
NORTHWESTERN BANK BLDG.
E. SHELLEY MORGAN, N.W. MANAGER. PORTLAND, OREGON.

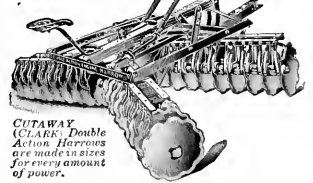
Change in By-Laws North Pacific Fruit Distributors

THE North Pacific Fruit Distributors, at a meeting held in Spokane on April 6th and 7th, have incorporated into their by-laws many important changes, which were made for economy, efficiency and equality of control, which in the minds of the trustees will make this institution much stronger during the coming year than in the past. The purpose of the organization is to provide a co-operative, non-profit selling agency for the fruit-growers of Oregon, Washington, Idaho and Montana. It is the object of the Distributors to maintain the highest efficiency possible and to work in harmony for the purpose of avoiding competition of one selling concern with another. The membership shall consist of associations, corporations or other organizations of fruitgrowers formed for the purpose of assisting the growers in harvesting and assembling their crops. The corporations, associations or organizations of fruitgrowers holding membership in the Distributors shall be known as "Sub-centrals." The election of trustees or directors of the sub-centrals is changed and instead of each district having one trustee each district will now be given two trustees for the first 500 cars or fraction thereof and an additional trustee for every 500 cars marketed in a normal year. The members so elected shall represent the sub-central in the Distributors and together shall constitute the board of trustees. The number of trustees shall be determined each year on the amount of tonnage marketed the previous year. The Distributors instead of sending representatives to the different districts for the purpose of organizing sub-centrals will expect this work to be done by the fruitgrowers in the different fruit-growing sections. However, if any sub-central requires an official of the Distributors to assist in this work the sub-central shall bear the expense. The system of revenue charges for selling fruit has been radically changed. During the last two years the charge has been so much per box. From now on the cost of selling fruit and conducting the business of the North Pacific Fruit Distributors and

the expense incurred by it shall be pro-rated among the sub-centrals in proportion to the tonnage marketed through the Distributors. No endeavor shall be made to fix such costs and expense in advance. Before the close of each month the Executive Committee of the Distributors will prepare a budget of expense and expenditures for the coming month and collect the same from the sub-centrals pro rata on the proper basis, to be determined from time to time by the Executive Committee. At or before the close of each fiscal year the expenses shall be adjusted and pro-rated among the sub-centrals entirely upon the tonnage basis, each sub-central paying such proportion of the expense of the year as the tonnage marketed shall bear in proportion to the whole tonnage marketed during the year. If in any month any sub-central shall pay less than the proper amount it shall be called on to pay up the deficiency. If, on the other hand, any sub-central shall have paid more than the amount it will be refunded. The annual meeting was scheduled for the last Monday in April. In the future the annual meeting will be held the first Monday in March of each year at the main office of the Distributors or at such other place as shall be determined by the Board of Trustees. Officers, members or stockholders, as well as any fruitgrowers belonging to the sub-centrals marketing the fruit through the North Pacific Fruit Distributors, shall be privileged to be present at the annual meeting. The manager shall present in full detail report of the business and affairs of the Distributors and the officers during the preceding year at each annual meeting. These reports and policies shall be subject to discussion by those entitled to be present as designated. The Board of Trustees shall hold regular meetings in August and December of each year, the dates to be determined by the Executive Committee. Special meetings of trustees may be held at any time, subject to the call of the president or, in his absence, by the vice-president. The president or secretary of the corporation shall call a meeting of the trustees

at any time upon the demand of all the trustees of any sub-central; notice of the meeting will be given by mail to each trustee at his last known address five days previous to the meeting. The Executive Committee of this corporation shall hold regular meetings the first and third Monday of each month unless otherwise determined by the Executive Committee. When they hold such other meetings as the manager may determine upon or require each sub-central may send to said executive meetings its manager and shall be expected to send the manager to the last regular meeting each month. The managers of sub-centrals will be allowed to participate in discussions and express views and opinions upon all matters coming before the meeting. The trustees shall elect or appoint from their own number an executive committee of three; no two shall come from the same sub-central, nor shall more than one member of the Executive Committee be appointed from any one of the following districts: Wenatchee, Yakima, Western Oregon, Walla Walla, Southern Idaho, Lewiston and Clarkston, Spokane and Montana. The Executive Committee shall have supervision and manage the business affairs of this corporation. It shall be vested with all the power of the Board of Trustees relating thereto. The Executive Committee shall have power to elect and discharge all officers and employes other than those appointed by the Board of Trustees as provided; to make contracts, establish rules for packing and grading, develop markets and establish market connections, inspect and sell fruit, with power to do everything that is necessary for carrying on the business of the North Pacific Fruit Distributors, subject to the control of the Board of Trustees. Every member of the Board of Trustees shall be a duly elected representative from his sub-central. The Board of Trustees shall require each officer, agent or em-

Engine Harrow



CUTAWAY
CLARK Double
Action Harrows
are made in sizes
for every amount
of power.

Whether for a pair of small horses or for a large tractor, you can get the right size

Cutaway
CLARK

Double Action Harrow

You are not limited to a certain amount of horse or engine power. With only two very small horses you can do the same class of work as with four big horses. Or with tractor power you can do the same intensive tillage as with horse power. Ask your dealer about them. Write us. We ship direct where we have no agent.

Send for new catalog today
THE CUTAWAY HARROW COMPANY
Makers of the original CLARK dual harrows and plows
940 Main Street Higganum, Conn.

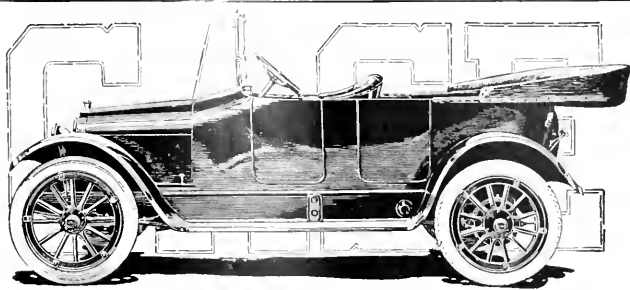
ploye of the company handling money to give bond for the faithful performance of his duty to such amount as the trustees shall determine. Each bond to be given by a surety company, approved by the Executive Committee, and be paid for by the North Pacific Fruit Distributors. The president shall be the executive officer of this corporation and shall preside at all meetings of the trustees and, with the secretary, he shall sign all certificates of membership and other documents like deeds, mortgages, etc., in reference to the property as may be recommended by the Board of Trustees. The president shall call a meeting of the trustees when requested by the trustees as provided for. He shall have custody of all bonds executed by any officer or agent of the corporation, except his own bond, which shall be deposited with the secretary. The president must be a grower and a member of the Board of Trustees. He shall not draw his salary or receive any pay from the Distributors other than such sum per day as may be allowed when employed in the business of the corporation. He shall not have managerial power by virtue of his office, nor take active part in the management of the business of the Distributors other than as a member of the Executive Committee or as he may be employed in the service of the corporation by order of the Board of Control.

Pruning the Gooseberry and Currant

Pruning the gooseberry to a bush form in this country is recommended by Professor C. I. Lewis, chief of the Division of Horticulture, Oregon Agricultural College. Berries are borne on the two, three and four-year-old wood, but occasionally the fruit grows too small on the four-year-old wood and it should be pruned out. The currant bears most of its fruit on the two and three-year-old wood. All canes of either of these fruits should be cut out when they begin to droop toward the ground, and all canes that are weak. The plant should be reduced to the number of canes that will grow in a vigorous condition. When canes tend to grow gnarly, old and weak they should be removed. The entire planting should be renewed in from six to ten years. While the bushes will fruit for a longer time the fruit tends to grow too small to be profitable.

"Our railway management has many faults and abuses in detail; but taking its work as a whole it has brought down rates to a cheapness which is unequalled elsewhere and has developed the business of the country on a scale which would have been impossible under any system of rates based on cost of service."—Arthur T. Hadley, President of Yale University.

The Oregon State Horticultural Society has just issued the proceedings of the twenty-ninth annual meeting, held at Medford, December 2, 3 and 4.



The Name Behind the Goods

Judge Your Car Year-After-Next

Time is the big test that your car must meet. No matter how well it performs the first year—it is next year and the year after that tell the story of service or disappointment.

The time really to judge the CASE "25" is at the end of the third or fourth year. Then you will fully understand why we are so particular to build mechanical perfection into every CASE car.

Our catalog tells in detail of the many parts of this car where we spend just to keep your cars out of the repair shops and to give you complete confidence and satisfaction in your investment.

Least in Price—Greatest in Value

Of the popular-priced cars the CASE "25" costs you least, we maintain, because we include extra accessories to the value of \$110.25. Our price is \$1350—less 5 per cent if cash—and the CASE comes equipped with Extra Tire and Tube on Rim with Tire Cover, Weed Non-Skid Tire Chains and 8-Day Clock.

These items are necessary—particularly for country driving. Other cars do not include them. Deduct their value—\$110.25—

from the CASE price, and then compare it with other cars.

CASE cars offer an extra value because we can afford to put more money into their materials and workmanship. We save on selling expense where others must spend, for CASE cars are sold by the same world-wide organization that handles the entire CASE line of farm power machinery. And this saving goes into the cars in added value.

Send for Catalog and learn about the CASE—"The Car With the Famous Engine."

Case "25" Complete \$1350—5% Discount If Cash



CASE

The Car With the Famous Engine

NOTE: Ask us for 1915 catalog detailing and describing our entire line of CASE Steel Threshing Machinery, Saws, Gas and Oil Tractors, CASE-RAPINE Tractor Gang Plows, Corn Shellers, Baling Presses and Road Machinery. Yours on request. Mail a postcard.

J. I. CASE T. M. COMPANY, Inc. Founded 1812 Dept. 548, Racine, Wis.

Branch House at
Portland, Oregon, 322 East Clay Street

Practical PUMPS
Permanent — 300 styles —
Powerful — one for every
 purpose: hand, power, single-
 acting, double-acting, force, lift;
 for shallow wells, deep wells,
 cisterns, etc. Backed by 65 years
 pumpmaking experience.
 Our service Department helps
 you select right pump or system
 — free. Our free book, "Water
 Supply for the Country
 Home" fully describes

**GOULDS
 RELIABLE
 PUMPS**

— simple, durable, effi-
 cient. Send for your
 free copy today.

The Goolds Mfg. Co.
 Main Office & Works
 Seneca Falls, N. Y.
 BRANCHES:
 New York
 Boston
 Chicago
 Houston
 Atlanta



Sales Managers, Etc.

Continued from page 10

the National Apple Company of Hood River, thus combining the three plants into one, thereby eliminating self-competition. The various fruit corporations controlled by Mr. Davidson, including his private holdings, amounted to 425 acres of orchard, about 60 per cent being in bearing at the present time, which produced in 1914 60 cars, the crop being estimated by Mr. Davidson at 90 cars for 1915. Mr. Davidson was one of the original incorporators and the first president of the North Pacific Fruit Distributors in 1913, being re-elected in 1914, at the same time being one of the nine trustees representing the Hood River district in April. After the Hood River district had withdrawn from the North Pacific Fruit Distributors Mr. Davidson sent in his resignation as president of the North Pacific Fruit Distributors, which was accepted. Mr. Davidson represented the North Pacific Fruit Distributors in New York City in 1913-14, looking after the Atlantic seaboard apple business and the exports to European countries. Mr. Davidson will take charge of the marketing of the Hood River strawberry crop during the season of 1915, which will amount to about 80 cars. Mr. Davidson was active in organizing the Fruit Growers' Council and the Northwest Fruit Shippers' Council. At a meeting held in Seattle in January and in Tacoma in February and at a meeting of the fruit shippers held in Seattle, March 12, 1915, the Fruit Shippers' Council was organized and Mr. Davidson elected as president. Mr. Davidson believes that the fruit-growers in the Northwest are justified in expecting the Northwest Fruit Shippers' Council will effect a much wider and more systematic distribution of the future crops of the Northwest than

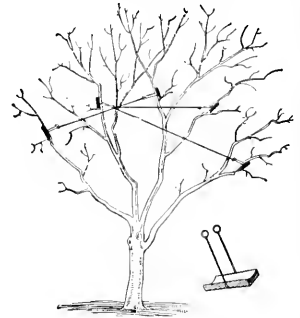
could be done in any other way. Mr. Davidson was 22 years of age when he came to Hood River in the year 1890, and has spent 25 years as a grower and marketer of apples, strawberries and other fruits, devoting practically all of his time to this kind of work. He has held many positions in connection with the fruit industry both in executive capacity and sales capacity. He has made many trips throughout the fruit-producing sections of the United States, visiting nearly every one of importance, and has also visited practically every city of importance in the United States where there is jobbing trade and fruit handled in quantity. He has spent two seasons in New York City in looking after the fruit business, where a greater quantity of fruit is consumed annually than in any other city in the United States. Mr. Davidson is a close observer and with 25 years has accumulated experience, gained in knowledge and developed judgment about growing, shipping and selling fruit that means ability and is ably recognized by the fruitgrowers honoring him with positions which he has held, and he is generally recognized as one of the very ablest men in the fruit business of the Northwest.

M R. B. A. PERHAM, sales-manager for the North Pacific Fruit Distributors, located at Spokane, is one of the genuine, original Hood Riverites, having been born at Hood River, Oregon, April 16, 1879, now 36 years of age, being a young man still in the prime of life. His father crossed the plains, leaving Indiana in the spring of 1850, being a pioneer, arriving at Oregon City in the fall of that year. His mother left Harrisburg, Pennsylvania, with her folks in the spring of 1851, traveling by boat to Panama, thence across the Isthmus of Panama on the backs of mules, the general mode of traffic across the Isthmus at that time, to the Pacific Ocean, going straight to



H. E. SMITH
 Sales Manager North Pacific Fruit
 Distributors

Tree Supports



WRITE FOR FOLDER

Thompson Mfg. Co.

Eighth and Santa Fe Ave.
 Los Angeles, Cal.

Portland, Oregon, and from there to Linn County, where her family settled. In 1884, at five years of age, Mr. Perham moved with his parents to Portland, living in and near Portland until 1898, attending the public schools of that city and also the high school. In 1898 he took a position as a boy with the Goodyear Rubber Company, one of the largest companies in that line of business in the United States, remaining with them for some time, acting as floor salesman. On account of poor health he gave up this position, moving in the spring of 1899 to Butte, Montana, feeling that the higher altitude would benefit his health. At 20 years of age in the year 1899, with his brothers who had already an established business, he engaged in general contracting business in Idaho. He was employed by his brothers mostly in outdoor work for a short period, afterwards returning to Butte, taking a position as traveling salesman with W. S. Nott & Company, jobbers in rubber goods and fire apparatus. In 1901 he took a position with Ryan & Newton, fruit and produce merchants of Butte, as city traveling salesman, remaining with them until 1903, when on account of a severe illness he decided it was advisable to remove to a lower altitude. Ryan & Newton, by the way, are one of the oldest and biggest firms in the City of Butte, also operating the biggest houses in Spokane and Seattle, doing an immense business. With this company Mr. Perham received a splendid educational training in salesmanship. After spending several months in Portland regaining his health Mr. Perham decided to remove to Seattle, which he did late in the spring of 1903, taking a position with the firm of Ariss, Campbell & Gault, fruit and grocery merchandise brokers. This firm not only did a large

business but had a splendid reputation with the trade people whom they represented, giving Mr. Perham an opportunity to secure valuable and educational experience and judgment in the fruit business, as this firm handled many hundreds of cars of fresh fruit annually. Mr. Perham was in charge of the office of Ariss, Campbell & Gault, managing their business for several years, and later taking an interest in the firm, remaining with them until the spring of 1912, having charge of their fruit department. In the spring of 1912 Mr. Perham took the position of sales-manager of the Yakima County Valley Fruit Growers' Association of North Yakima, Washington, remaining with them until the organization of the North Pacific Fruit Distributors in June, 1913, when he was transferred to Spokane, accepting the position as sales-manager of the North Pacific Fruit Distributors, which position he has held and is holding at the present time. Mr. Perham is popular with the growers and the fruit trade. He has had splendid experience and is regarded by all as a high-class salesman.

M. R. CONRAD ROSE, Wenatchee, Washington. Member Shippers' Council. Mr. Conrad Rose was born in St. Clair County, Illinois, February 6, 1862, and is now 53 years old. He attended public school until he was 14 years old, at which time he started out for himself, working in general merchandise stores and on farms. He arrived in the West in 1883 at Sprague, Washington, where he was employed by the Northern Pacific Railroad Company in capacity of fireman and engineer until 1888, at which time, after severing his connection with the company, he crossed the mountains to



CONRAD ROSE
President The Wenatchee Produce Company
Member Shippers' Council

Wenatchee, where he has since been raising fruit and vegetables on his seventy-acre tract, and since 1899 has been engaged in the merchandise business, and in addition has been the most important factor in the valley in the shipping of fruit and vegetables. He has served as county commissioner and as a member of the school board, and has taken an active part in all commercial activities. He is generally referred

LOOK FOR THE NAME MYERS

**ON PUMPS FOR EVERY PURPOSE
HAY UNLOADING TOOLS — DOOR HANGERS**

This is an important mark—it is for your guidance when you purchase a new Pump, Hay Unloading Outfit or Door Hanger. Equipment. A guarantee of quality, high standard in construction and excellent service. Insist on getting a MYERS. Your dealer can supply you. Write for attractive booklets and—Remember the Name MYERS.

F. E. MYERS & BRO. 120 ORANGE ST. ASHLAND, OHIO.

ASHLAND PUMP & HAY TOOL WORKS

to as the ranchers' friend. He is an unassuming man of few words. He has raised a family of seven children, of whom five are now living. Three of his boys are married and comfortably located on orchard tracts at Wenatchee. The Wenatchee Produce Company, of which he is president and principal owner, has grown to be the largest concern of its kind in the Northwest, and in addition to doing a very heavy merchandise business during 1914 shipped to exceed two thousand cars of fruit.

M. R. E. E. SAMPSON came to North Yakima, Washington, in the year 1904, taking a position as bookkeeper for the Horticultural Union, which he filled for a year, after that becoming manager. Under his position as manager the union prospered, doing a very large and successful business. In 1909 Mr. Sampson left the Yakima Horticultural Union to accept a position as manager for the Vernon Fruit Growers' Union in British Columbia, which he occupied for two years, returning to North Yakima in 1911 and again becoming manager of the Yakima Horticultural Union in 1912, which position he has filled up to the present season. He has recently organized the E. E. Sampson Company, of which he is president and manager, Mr. C. H. Oliver being vice president and Mr. C. D. Sampson secretary and treasurer.

Mr. Sampson has an extended acquaintance with the fruit growers in the Yakima Valley and throughout the Northwest in general, having been frequently in attendance at the different gatherings of fruit growers throughout the Northwest. For ten years Mr. Sampson has been engaged in marketing and handling fruit and during this time he has formed a very extensive acquaintance with the fruit dealers throughout the United States. Mr. Sampson is recognized as a very conservative and able man with a wide acquaintance and many warm personal friends.

M. R. FRED E. THOMPSON, of the Thompson Fruit Company, is justly entitled to the distinction of being considered an early pioneer in the fruit industry of Yakima County, having shipped the first carload of fruit that passed the Mississippi River from the Yakima Valley. He is a native of the State of Washington and his education was obtained in the public schools of Pierce County, after which he took spe-

cial training in a business college in San Francisco for one year.

At twenty years of age he entered business as a hop grower in the Puyallup Valley and followed this enterprise until 1893. In connection with his brother, W. L. Thompson, the Bank of Summer was incorporated in 1888.

In this same year he purchased 160 acres of land in the Yakima Valley and during the spring of 1889 planted the first commercial orchard in the county, consisting of ten acres of mixed fruits,

GREAT SUGAR SALE!

100 LBS NET

PURE CANE SUGAR

\$6.20

Another great shipment of fruit and Berry Sugar for our customers at less than wholesale! Lowest price in the West. Order now—100 lb sack **\$6.20**

OTHER GROCERY BARGAINS

A few examples from our big catalog!

Economy Blend Coffee, lb.	15c
Standard Tomatoes, doz. cans	93c
Jones Leader Soap, 36 cakes	96c
Canned Pineapples, 6 cans	85c
Fancy Head Rice, 10 lb. bag	75c
Navy Beans, 10-lbs sack	73c
"Whitehouse" Bluestem Flour, bbl.	\$7.00
Fancy Eastern Hams, pound	18c

TRAVEL FREE

Jones Travel Scrip with every purchase—a mile for each dollar spent. Get our big new Free Catalog No. 63. Everything brand new, ordered since our great fire. Prices lower than ever.

Jones Cash Store

**E. Burnside and Union Ave.
Portland, Oregon**

JONES CATALOG
SPRING SUMMER
WINTER
NO. 63
ST. LOUIS, MO.
JONES CASH STORE

FREE CATALOG!
Jones Cash Store, Portland, Oregon

Please send your new Catalog No. 63

Name: _____ Address: _____

Pacific Coast Agents
**United States Steel
 Products Co.**
 San Francisco
 Los Angeles
 Portland
 Seattle

J. C. Pearson Co., Inc.
 Sole Manufacturers
 Old South Bldg.
 Boston,
 Mass.



PEARSON

ECONOMY in buying is getting the best value for the money, not always in getting the lowest prices. PEARSON prices are right.

ADHESIVENESS or holding power is the reason for PEARSON nails. For twenty years they have been making boxes strong. Now, more than ever.

RELIABILITY behind the goods is added value. We rely on our record of fulfillment of every contract and fair adjustment of every claim.

SATISFACTION is assured by our long experience in making nails to suit our customers' needs. We know what you want; we guarantee satisfaction.

ORIGINALITY plus experience always equals excellence. Imitation's highest hope is, to sometime (not now) equal Pearson—meantime you play safe.

NAILS

Tells why chicks die

E. J. Reifer, the poultry expert of 505 Main St., Kansas City, Mo., is giving away free a valuable book entitled "White Diarrhoea and How to Cure It." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent of every hatch. All poultry raisers should certainly write Mr. Reifer for one of these valuable FREE books.

the Elberta peaches and d'Anjou pears being the first of those varieties to be set out in this district. In 1890 further additions were made to the orchard, increasing it to fifty acres, and in 1891 the planting was augmented to a total of ninety acres. This property was sold in 1903 for \$23,500, which was the highest price per acre for farm property in the Yakima Valley ever attained up to that date.

During 1904 and 1905 he represented the North Yakima branch house of Ryan & Newton in the capacity of manager. The output of the Yakima Horticultural Union was also handled by him in 1904. The firm of Thompson, Kain & Vaughan was organized in Billings, Montana, in the year 1900. Wholesale fruits, produce and provisions were handled by this company until Lindsay & Co. succeeded the firm.

In 1903 the firm of Carpenter & Thompson was formed to deal in fruits and produce in Butte, Montana. This was not a paying venture and was discontinued three years later.

At the present time Mr. Thompson is president of the Thompson Fruit Company, treasurer of the Cascade Orchard Company, and secretary of the Sunset

Orchard Company. All this property is located in the Yakima Valley and consists of 700 acres, 400 acres being in orchard. The combined properties are only in partial bearing, but are producing about 200 cars of fruit annually. Buying and shipping of fruits is prosecuted on quite a large scale, also handling accounts for growers.

MR. WILMER SIEG was born in Philadelphia August 3, 1859, and is now nearly 56 years of age. In his early life he attended the public schools, graduating from the high school at Harrisburg, Pennsylvania, in 1875. The same year he went to Chicago and accepted a position with the firm of Franklin, McVeagh & Co., which at that time was one of the largest wholesale grocery houses in the West. He rendered efficient service to this house, being promoted from time to time, finally being given a position as traveling commercial salesman, in which position he made good. Not being fond of commercial life on the road, he decided to make a change, and accepted a position with A. Grossenbach & Co., Milwaukee, Wisconsin, which is one of the largest fruit houses in that city. He was identified with this house twenty-five years, acting as secretary. The fact that he occupied only two positions in a lifetime before he came West is a good recommendation of his ability. Mr. Sieg has always taken an active interest in public matters and public institutions for the welfare of the people. For five years he was pres-

ident of the Citizens' Business League, an organization that stood for the advancement of Milwaukee; for fifteen years a director of the Milwaukee Gas & Light Company, and for five years president of the Milwaukee Athletic Club, which was a creation of his own starting, with a membership of the best and biggest business men in Milwaukee, developing into one of the largest and most successful clubs in the middle West. Mr. Sieg is a Mason, having taken his thirty-second degree, and also belongs to the Mystic Shrine. As a Shriner he was elected potentate of the Milwaukee Shrine for six terms in succession, which is an indication of the very high esteem in which Mr. Sieg is held by the Mystic Shrine. Mr. Sieg was also president of the National League of Commission Merchants a few years ago, which indicates the very high esteem in which he is held by the fruit dealers of the United States.

In 1912 the Hood River Apple Growers' Association sent a delegation East to secure the best ability obtainable for manager and sales manager. After looking the field over thoroughly the committee from the Hood River Apple Growers' Union finally decided on Mr. Sieg, submitting the proposition to the board of directors of the Hood River Apple Growers' Union in Hood River, which resulted in a contract being made with Mr. Sieg for three years. The first year Mr. Sieg acted as manager and sales manager of the Hood River Apple Growers' Union. In 1913 the North Pacific Fruit Distributors was organized, of which Hood River became a part. Four sales managers were selected, Mr. Sieg being the one chosen to represent



WILMER SIEG
 Sales Manager North Pacific Fruit
 Distributors

the Hood River district. In 1914 the same arrangements were continued. Mr. Sieg's contract with the Apple Growers' Union and the North Pacific Fruit Distributors expired this year. In the year 1915 the Hood River Apple Growers' Association decided that as their output of apples was confined principally to Newtowns and Spitzenbergs a special effort would be required in order to market these to the best advantage. They felt that this could be accomplished better by a selling organization limited to the Hood River product, and therefore decided to withdraw from the North Pacific Fruit Distributors. The board of directors of the Hood River Apple Growers' Association, composed of eight of last year's board who were re-elected and three new ones added, were familiar with the accomplishments and ability of Mr. Sieg, and decided that his services had been so satisfactory and his ability so great that he was selected to act as sales manager for the Hood River Apple Growers' Association. In the spring of 1915 Mr. Sieg was sent to New York to look after the apple trade of the North Pacific Fruit Distributors of that city, and also the export business, carrying on the work that was started by Mr. Davidson in the fall of 1913. Mr. Sieg will return to Hood River on May 1, and will immediately become active in arranging a selling plan and campaign for the coming season.

The fact that Mr. Sieg has occupied only three positions during a lifetime is evidence of the fact that the people he has served desire to retain him; each change was made because in each instance he felt he was bettering his opportunities. The fact that he was selected as one of the four sales managers of the North Pacific Fruit Distributors is another testimony to his ability. Being selected this year by the directors of the Hood River Apple Growers' Association, which handles the largest output of Newtowns and Spitzenbergs of any association in the United States, which have always sold for remarkably good prices, according to market conditions, is final evidence in recognition of Mr. Sieg's ability as an apple salesman. Mr. Sieg probably has as extensive an acquaintance with the apple dealers of the United States as any man engaged in this line of work. He is not only a hard worker, but an enthusiast, and has a very extensive acquaintance of personal friends, being an extremely popular man with all those who know him well, and those who know him best believe that the apple growers have made a wise selection in the person of Mr. Sieg to act as sales manager for the coming season.

REMOVAL NOTICE

We have moved our offices to our old location over the Citizens Bank (122 1/2 Grand Avenue) Rooms 6 and 7. Write now for prices on advance orders for

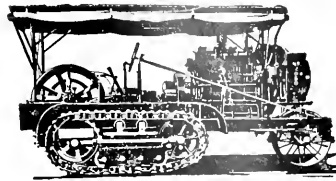
Oregon Champion Gooseberry

Perfection Currant and

Coast Grown Mazzard Cherry Seedlings

PORTLAND WHOLESALE NURSERY CO.

Rooms 6 & 7, 122 1/2 Grand Ave. Portland, Oregon



5 Years

180 days—150 nights

each year, and owners say

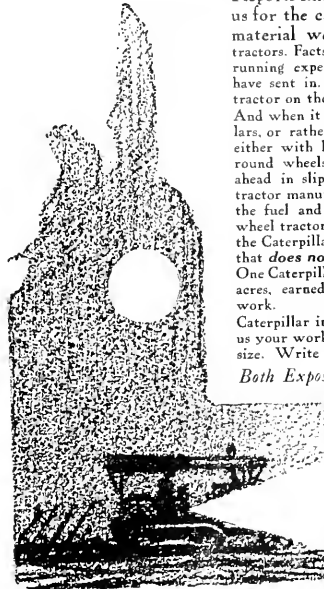
"Good for a Lifetime"

Reports like this from Caterpillar owners repay us for the careful workmanship and high-grade material we've been building into Caterpillar tractors. Facts and figures don't lie. We *know* the actual running expense of Caterpillars from reports owners have sent in. We'll back the Caterpillar against any tractor on the market when it comes to low upkeep.

And when it comes to cost of doing the *work*—in dollars, or rather cents, per acre—there's no comparison, either with horses or round-wheel tractors. Where round wheels slip and lose 8% to 20% of their get-ahead in slippage (actual figures from a round-wheel tractor manufacturer's report) the Caterpillar turns all the fuel and oil into actual mileage. While round-wheel tractors are laid up because the ground is too soft, the Caterpillar tractor with its long, wide, endless track that *does not* slip or mire is out earning good money. One Caterpillar owner last year, besides farming 1500 acres, earned \$10,000 with his Caterpillar on outside work.

Caterpillar in sizes to save money on any ranch. Tell us your work and your acreage, and we'll tell you your size. Write for Bulletin "BE" 273.

Both Expositions—San Francisco and San Diego



CATERPILLAR

Reg. U.S. Pat. & TM. Off.

Don't say Caterpillar unless you mean Holt's

THE HOLT MFG. CO.

(Incorporated)

Spokane, Wash. Portland, Ore.

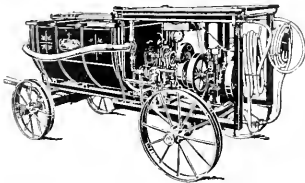
Stockton, Cal. Peoria, Ill.

Cons. Wgn. & Mch. Co. Sales Agts.

Salt Lake City, Utah

M R. J. H. ROBBINS, general manager of the North Pacific Fruit Distributors, was born on Salem Prairie, near Salem, Oregon, in the year 1859. His parents crossed the plains a few years previous to this time, being real pioneers in the Northwest. His father, Harvey Robbins, served in the Indian wars of 1865-66, first in the Rogue River war and next in the Snake River war, and now bears the badge of service in the form of a burl arrowhead embedded in his thigh. When Mr. Robbins was two years old his family moved to Eastern Oregon, locating in the old town of Umatilla, on the Columbia River, and at the age of 19 years Mr. Robbins participated in the last Indian war of the Northwest, making a sensational ride from Monumental mine in Grant county to Pendleton for arms and ammunition for the defense of the settlers in his own community in July, 1878. Finding neither percussion caps or muskets, he left there, making one dash on horseback passing alone between two battles that were raging at Willow Springs and Umatilla Agency, in a stretch of country that was infested with war-painted redskins. His chance of breaking through was so slim that he was counted among

the dead in early reports. Mr. Robbins' ride to and from Pendleton is a part of the history of those early pioneer days. From the time Mr. Robbins was a boy until manhood he bore the arduous responsibility endured by pioneer families. His father was alternately engaged in farming, mining and merchandising, and being the eldest child and the only person available, the duties of a grown man were usually thrust upon him while he was yet a boy. A trading post in those days comprehended a store, hotel and a good many other things. Mr. Robbins, Sr., operated five or six of those along the highways and trails of Eastern Oregon, and Mr. Robbins was frequently sent out, sometimes 100 miles or more into the wilderness, to buy beef cattle for his father and drive them home, and to deliver supplies with a packtrain to miners and settlers in isolated places. He was entrusted with the position of bookkeeper by his father, which created an ambition to engage in business. His education was obtained principally in the district schools and the old Baker City Academy. Working between times, he obtained the money with which to pay his own way, and later attended the Portland Business



Downright Good Service

—is built into the Bean line—from the wonderful little one-man Eureka right up to the matchless Bean Giant, the king of all sprayers.

Will it do the work right?

Will it do it inexpensively?

Will it stand up under hard field usage and do the work season after season—and season after season?

You'll get the answer—Yes—from any of the thousands of owners of

Bean Power Sprayers

These outfits are built complete under one roof, from the raw pig iron to the finished rig. The only exception to this is the engine—we equip all our power outfits with the NVO, because we couldn't build a better sprayer engine.

Every Bean part is accurately machined and finished—and every part fits its corresponding part perfectly.

Bean power sprayers are built like a high-grade automobile. That's why they wear and wear and wear—and are in good serviceable condition long after cheap assembled outfits would have been consigned to the scrapheap.

We are ready to make immediate deliveries from favorably located Northwest distributing points.

SEND FOR CATALOG 28-A.

It illustrates and describes the entire Bean line of Hand and Power Sprayers, Hose, Nozzles, Fittings, Bamboo Rods, Sprayer Parts, etc. It describes in detail the 21 distinctive features that put the Bean into a class by itself.

Don't fail to visit our exhibit in the Palace of Horticulture at the Panama-Pacific Exposition.

Bean Spray Pump Co.

213 West Julian St.

SAN JOSE, CALIFORNIA

12 Hosmer Street, Lansing, Michigan

College, where he took a commercial course. Probably these early experiences account for the courage which Mr. Robbins possesses. During his early pioneer life business had to be created and developed. Things were not found "ready made." His early training developed the constructiveness and cour-



J. H. ROBBINS
General Manager North Pacific Fruit
Distributors

age which fitted Mr. Robbins for the big transaction of developing the mammoth Northwestern marketing machine on a purely co-operative basis, of which he is the head, which has been successfully operated for the past two years, known as the North Pacific Fruit Distributors.

After the Indian war Mr. Robbins played an important part in the development of Eastern Oregon. During the winter of 1880-81 he was a member of the surveying crew which made the preliminary survey from Pendleton for the railroad that later became a link in the transcontinental line of the Oregon-Washington Railroad & Navigation Company. In 1882 Mr. Robbins started upon his business career, taking charge of a general merchandise store at Pilot Rock. A little later, with practically no assets but his word, he bought out the store and continued to operate it for two years. From 1881 to 1887 he was engaged in various mercantile pursuits in different places in Eastern Oregon. During that time he married Miss Edith V. Carr of Portland. Mr. Robbins is the father of two sons, J. Frank Robbins, a partner in the Robbins, Company, a furniture and hardware concern of Spokane, and Charles H. Robbins, passenger and traffic superintendent of the Yakima Valley Transportation Company. In 1888 Mr. Robbins became active in political affairs, developing prominence in this line, being elected a state central committeeman of his party. In 1887 Mr. Robbins was appointed superintendent of the Pendleton City Water Works. He was elected treasurer of Umatilla County in 1888 and re-elected in 1890. During that time he became assistant cashier of the Pendleton Savings Bank, which position he resigned in 1893 to accept a

government appointment as receiver of public moneys and disbursing agent at the United States Land Office at La Grande. He was one of the first of Cleveland's appointees and one of the last to be retired, serving under McKinley. Again in 1898 he engaged in the mercantile business, organizing the Chicago Clothing Stores in La Grande and becoming vice president of the Traders National Bank of that city. A year later he established the First National Bank at Sumpter, serving as president until 1893, and for a term was mayor of that city, and also represented Baker County in the Oregon Legislature. He was largely connected with mining operations in Eastern Oregon of considerable magnitude and was connected with several other banks in Eastern Oregon. His business ability next led him into the organization of several independent hardware stores, known as the Basche-Sage Hardware Company. In 1903 Mr. Robbins closed out all of his business interests in Eastern Oregon and after taking a year's vacation went to Spokane, where with his brothers he put together and built up the furniture business of Robbins, Pratt & Robbins. Three years later on account of ill-health he disposed of his interests and went to California. In 1910 the Yakima fruit growers became anxious for a united marketing concern in that valley and after looking over the field thoroughly decided upon J. H. Robbins as the proper man to carry on the development and organization of what is now known as the Yakima Valley Fruit Growers' Association. Mr. Robbins was brought from California to carry on this organizing work. This is one of the strongest associations in the Northwest. A plan was procured in California and readjusted to apply to Northwestern conditions by Mr. Robbins.

Western Agents
A. I. Root
Co.

Portland Seed Company

Bee Hives and Supplies

If you own an orchard or keep bees you should have a copy of our Catalog. It lists everything for the successful handling of bees and the production of honey.

We are pioneers in the bee supply business in the Northwest, are thoroughly familiar with local requirements and carry a large and complete stock.

Tested Queen Bees at Short Italian Notice

Ask for Catalog No. 203.

PORTLAND SEED
COMPANY
PORTLAND, OREGON




Having successfully organized the Yakima Valley Fruit Growers' Association, Mr. Robbins in 1912 was elected general manager of the Yakima Fruit Growers' Association, directing the sale and distribution of the largest tonnage ever handled by any one association or any one man up to that time in the Northwest. It was therefore more or less natural that Mr. Robbins should be selected as manager of the North Pacific Fruit Distributors, which was organized in 1913. Mr. Robbins took the helm and during the last two years over 100 local organizations have connected themselves with the North Pacific Fruit Distributors, having a membership of approximately 9,000 growers. Mr. Robbins has directed the sale of over 10,000 cars of fruit, exceeding in value \$6,000,000. The system organized by this institution has been so thorough that in two years only 8400 has been lost by the concern through the failure to make collections. Mr. Robbins is one of those who has assisted largely in changing the method of selling fruit on consignment to f.o.b. basis. It was stated previously to 1913 that about 70 per cent of the entire tonnage of the Northwest was shipped on consignment, frequently bringing low returns. Mr. Robbins has stood steadfast for straight f.o.b. business and has met with success.

MR. H. E. SMITH, sales manager for the North Pacific Fruit Distributors, came to Payette, Idaho, a few years ago to engage in the fruit industry. On account of his wonderful business ability he was soon selected as manager of the Payette Valley Fruit Growers' Association, the largest growers' co-operative organization in Southern Idaho. This business he conducted with success and with credit to himself and satisfaction to the growers. He was the unanimous choice of the Idaho people as their representative in the North Pacific Fruit Distributors when Southern Idaho districts associated themselves with that body. He was selected by the trustees of the North Pacific Fruit Distributors to represent Southern Idaho as one of the four sales managers, which position he has filled for the past two years, with headquarters in Chicago, looking after the surrounding territory. Mr. Smith is a man of recognized ability, careful, conservative, with an immense number of personal and business friends, who esteem him very highly.

Our endeavor to secure a further personal history of Mr. Smith's life has met with delay, which will explain the omission in this short personal sketch of some of the details which have been given in reference to the other sales managers.

MR. G. HAROLD POWELL was born February 8, 1872, at Ghent, New York. Graduated Union Free High School, Chatham, 1891. Graduated Cornell University, College of Agriculture, degree bachelor of science, 1895. Fellowship in horticulture, Cornell, 1896.

TAKE OFF YOUR HAT TO THE N.Y.S.



PUMPS THAT PUMP
Hand, Windmill and Power Pumps, Horse and Gistern Pumps, Tank Pumps, Spray Pumps and Accessories for Every Pumping Service.

HAY UNLOADING TOOLS
Unloaders, Hooks, Slings, Pulleys and Fixtures—Staples and Tubular Door Hangers, Hay Rack Brackets, Gate Hangers, Etc.
OLD ESTABLISHED LINES—DISTRIBUTED BY OVER 25,000 DEALERS
Let us mail you Circulars and Dealer's Name.

YERS

F.E. MYERS & BRO. 120 ORANGE ST. ASHLAND, OHIO.

ASHLAND PUMP & HAY TOOL WORKS

Master's degree in agriculture, Cornell, 1896. Entered Delaware Experiment Station, Newark, September, 1896, as horticulturist and entomologist, and worked there five years on various commercial and scientific horticultural problems, results of which were published in bulletins and reports of the Delaware College of Agriculture Experiment Station. Entered employ of United States Department of Agriculture, Bureau of Plant Industry, September, 1901, as assistant pomologist. Organized investigations in cold storage of fruits and carried on these investigations for several years in different parts of the country on the effect of the different methods of handling in the field and the warehouse treatment, on the keeping quality of fruits; reports published in bulletins and reports, Bureau Plant Industry, Department of Agriculture, and in the reports of the chief of the Bureau of plant industry. In 1903 made pomologist in charge of fruit transportation and storage investigations. In 1904 organized investigation of the causes of the losses in California citrus fruit while in transportation from California to Eastern markets. With a corps of assistants these investigations were continued for six years and nearly one thousand experimental shipments were forwarded from California to Eastern markets under exact methods of handling, in order to de-

termine transportation conditions and market handling on the carrying quality. These investigations showed that losses in transit were due primarily to the improper handling of the fruit in preparing for shipment. The results were accepted by the industry and the methods of handling in the fields and in the packing houses were completely revolutionized within the next few years, resulting in a saving to the industry variously estimated from a half to a million dollars a year. Similar investigations were organized in the transportation of deciduous fruits in California and a similar investigation in Florida citrus fruits.

One phase of this work had to do with the study of temperature changes in refrigerator cars while in transit from California to the East. It was shown that the losses in deciduous fruits in transit are due not only to improper methods of handling, but to the slow cooling down of the fruit under ordinary icing methods. Through the co-operation of the railroads, investigations were started to determine the effect of cooling the fruit quickly after packing and before loading in refrigerator cars. This work was followed by the building of enormous precooling plants by the railroads of California and by the erection of a number of cold storage plants in the packing houses of the shippers. The precooling methods are completely changing the methods of handling fruits and vegetables in the United States.

In 1910 Mr. Powell was made assistant chief of the Bureau of Plant Industry of the United States Department of Agriculture and acted as chief of the bureau for one year, during the absence of Dr. Galloway, the chief. In 1911, manager of Citrus Protective League of California. In that capacity he made an exhaustive investigation of the cost of producing citrus fruits in Spain and Italy, a similar investigation having been made by him for the federal government in 1909. In 1912 he was elected general manager of the California Fruit Growers' Exchange.

Mr. Powell has a very wide and extensive acquaintance among fruit growers in all parts of the United States, formed during the time he was connected with the Department of Agriculture. He has a host of friends and is esteemed for his courteous manner and gentlemanly ways and admired by everyone for his ability. No man that has ever been connected with the Department of Agriculture of the United



FRED S. THOMPSON
President Thompson Fruit Company
North Yakima, Washington

Farm Telephones

Time was when calling a neighbor by telephone meant ringing every party on the line.

Now there is a simple arrangement on the telephones being installed in farm homes whereby central may be called—and only central hears.

Aside from the privacy this arrangement gives, it insures freedom from the continued ringing that would result from a big party line.

The Kellogg Switchboard and Supply Company, a telephone company of San Francisco, California, has this secret arrangement on their telephones. As a matter of fact, Kelloggs have gained world-wide reputation in telephony. They commenced early in the game, when a telephone on the farm was an almost unheard-of thing, and when telephones were badly needed there.

Now the ring of Kellogg's telephone is abroad in the land, and farmers wonder how they ever got along without it. Is there a time when a quickly ripened crop demands immediate attention? The farmer gets in touch with all sources of help for miles around. Does a member of the family fall ill? No racing of tired horses for the doctor. He uses the telephone. The farmer keeps in touch with the market. He keeps in touch with the entire world more easily than ever before. Telephones on the farm have really proved a blessing.

The Kellogg people have particularized on farm telephones. Their instruments are constituted for the heaviest farm service. Thirty-seven distinct tests are given each instrument before it is declared O.K. No repair bills. Telephone experts assist in planning the lines for farmers.

Those interested would find the Kellogg literature and bulletins splendid and instructive reading. Address the Kellogg Switchboard and Supply Company, Mission and Third Streets, San Francisco, California. [Adv.]

"Key to the Families of North American Insects," by Dr. A. L. Melander, professor of entomology, State College of Washington, Pullman, and Charles T. Brues, assistant professor of economic entomology, Harvard University, is the name of a new publication just off the press. The book is prepared for determining the different insects in such a way that it is valuable and practical for the fruit grower, the inspector and the modern farmer, as well as for the student in classroom work. It is issued with a special glossary defining unusual terms and contains 427 drawings of anatomical details and representative insects, which make the book self-assisting. Anyone who has had elementary training in botany or zoölogy should be able to determine the name of any insect by the use of pocket lens and this book. To make the book as practicable as possible the important insects are cited as they occur in various families, giving their common and

scientific names. In addition to this, that the reader may connect up the various books and bulletins on insects, many of which do not agree in their nomenclator, a list of synonyms, that is, a list of names, has been bestowed on various groups and species, which has been added. It is important that every fruit grower should have a knowledge of the different insects and be able to recognize them, and in order to obtain the best results he should understand their life history and habits. For determining the different insects this book is very valuable. It is privately printed by the authors and can be obtained from each postpaid for \$1.50.—Adv.

The Montana State Horticultural Society has issued a very interesting report of the sixteenth annual session of the Montana State Horticultural Society.



WINANS' PATENT

FIRST AID TO FRUIT TREES Winans' Net Tree Support

Prevents fruit-laden trees from breaking, holding the limbs up more efficiently and at much less expense than propping. Holds limbs in place, preventing damage and dropping when the wind blows.

Meshes are large enough so fruit can be picked through them—open at bottom so picker can get inside the net, or net can be removed at picking time.

This net of finer mesh will keep the birds from eating the blossoms or fruit in districts which are thus troubled.

For further particulars, descriptive circulars and price lists, write

W. ROSS WINANS, Hood River, Ore.

States government has rendered more efficient service. The service rendered the orange growers of California and the work which he conducted in ascertaining the cause of decay in transit of oranges has saved the orange growers of California hundreds of thousands of dollars. Today Mr. Powell draws the largest salary and handles the greatest number of cars of fruit of any manager of any co-operative fruit growers' association in the United States.

Practically all of the peaches grown in Georgia, Delaware, Connecticut and Michigan and various other peach-producing sections of the Middle West and East are shipped in baskets, which is considerably more economical than shipping in boxes, for the reason that quite an expense is saved in the packing. Some people have suggested that it would be advisable for the Northwest to ship peaches in baskets instead of boxes. It seems the suggestion is well worthy of consideration. Sufficient trial should be made to find out if peaches can be shipped in this way satisfactorily and more economically than in boxes. Information as to the cost can be obtained from the Burlington Basket Company of Burlington, Iowa.

The Washington State Experiment Station at Pullman has just issued a very valuable spray calendar for the year 1915, which can be secured on application.

Grubs! Grubs! Grubs!

Killed by the thousands. We can do it for you. Let us show you how the Ottawa County peach growers are doing it by the use of Kilo-Grub, a poisonous pine tar product, put up in gallon pails ready for use. Apple growers in this locality are using Kilo-Grub to dope over all cuts after trimming instead of paint. Try it.

\$1.60 per gallon, f.o.b. Port Clinton, O.

Sample free.

D. W. PAYNE & SON
Port Clinton, Ohio

Fruit Growers Profit by Dairying—

Hundreds of fruit growers are turning to dairying as the most profitable side line. Oregon's dairy products last year exceeded \$18,000,000.00.

Even if you have only a few cows, our Service Department can give you valuable ideas and assistance.

We carry the most complete line of Dairy Supplies in the Northwest.—Sole Oregon agents for



Barrel Churn



Milk Can

Simplex Separators
Buh Milk Cans
Entire Simplex Line
Papek Ensilage
Cutters

Inspect our modern dairy equipment.

Free Catalogs
gladly sent upon request.

MONROE & CRISSELL

The Simplex Line

DAIRY EQUIPMENT AND ACCESSORIES
MACHINERY AND SUPPLIES
145 FIRST STREET
PULLMAN, WASHINGTON

Orchard Costs—First, Marketing; Second, the Production

Professor C. L. Lewis, Corvallis, Oregon, before Fruit Growers' Conference, Spokane National Apple Show, 1914

THE problems confronting the fruit-grower can be divided into two natural heads—first, marketing; second, problems of production. Marketing includes standardization, distribution and the utilization of by-products. The following points are included under problems of production: Our aim should be to produce a large crop of high-class fruit at a minimum cost, while at the same time we maintain the vigor of the trees. The production of a large crop of first-class fruit depends upon a happy combination of soil, variety, climate, and personal skill. The cost of production will depend very largely upon two factors, namely, the advantage of location and the business ability of the owner.

To obtain such results the owner must have his work well organized; he must have made a systematic study of details, and must have had a good previous knowledge of costs. In attacking the problem of the production of fruit there are many sides which should be taken into consideration, such as size of unit, economic management and orchard operations. There is undoubtedly a true economic size for an orchard, for each type of fruit. This is very apt to be a one-team unit or combinations of one-team units. That is, an area on which one team and one man can do the greater part of the work, or a combination of such units. In very small acreages, unless one is very careful, the overhead charges become so high as to become almost prohibitive.

Orchards should be well laid out so as to facilitate work and to make an attractive appearance. They should be divided into blocks of not too large area; these blocks may be divided according to age of trees, type of fruit, variety of fruit, soil or any other such factor. The accounts of the costs of each block should be kept separately. In laying out the orchard very careful attention should be given to pollination, so as to enable the grower to get the maximum set of fruit and at the same time care should be taken to maintain the orchard with the greatest economy of management. That is, it would be best to lay it out in solid rows of two to six rows of each variety rather than in a miscellaneous scattering of varieties.

Tillage.—Much money is being lost in tillage. This is due to wrong methods of tillage on the one hand or the employment of wrong tools on the other hand. Much money is lost by those who handle clay soils through neglect to harrow promptly after plowing. When large areas are left unharrowed it materially increases the cost of putting this land into good tilth. Poor tools and insufficient horsepower are the Waterloo of many an orchardist. He has not worked out, for example, the relationship between two, three and four horses on certain tools, neither has he worked out the relationship of

the work the tools will do and the comparative cost of certain tools. This must be done if the cost of tillage is to be kept down.

Inter-Cropping.—We hear a great deal of the possibilities of inter-cropping, and many men are making a great deal of money; others are losing money or breaking even, simply because they have not definitely determined the cost of the production of such inter-crops, or the increased cost of maintenance of the trees where crops are grown among them. The inter-crops in an orchard should, as a rule, be something which should sell at a high price.

Fertilizers.—While we have not been using fertilizers very extensively as yet, much money is being lost by the application of mixed fertilizers. The only way to test out your land is to choose small blocks of trees and apply the separate high-grade fertilizers, such as nitrogen, potash and phosphoric acid, and if you desire, combinations of the two and on one plot, a combination of all three of such elements. In this way, by taking six or seven plots, one can easily determine what plant foods will be of value on your orchard. You cannot determine this by the use of a mixed fertilizer.

Pruning.—The subject of pruning is almost too large to dwell on at this time. The greatest loss, however, I believe, in the cost of production, as far as pruning is concerned, comes from excessive pruning of trees just reaching the bearing age. In addition to this a great loss comes from careless pruning, leaving wounds unprotected, etc.

Spraying.—We have heard a great deal from the entomologists and plant pathologists of the tremendous toll that insects and diseases take from our crops, and undoubtedly their statements are true, although the damages are probably purely estimated. However, while it is true that money is lost by not giving ample protection against diseases and insects, there are a great many men who are losing money in other ways. First, by not knowing what they are spraying for. Second, by spraying the entire orchard where only a few trees need attention. I know one man who sprayed a large young orchard seven times in one year, and yet he had very little in his orchard to spray for. Money is lost by mixing combinations which don't work well together; by discarding well-known sprays for new, untried mixtures. We should be willing to try new sprays which come out, but should do it on a conservative scale. Money is also lost by investing money in outfits that are not suited to the work, and by using excessive power and coarse nozzles when they are not needed. There are certain conditions where coarse nozzles are most effective to use, but there are other conditions where they are not effective and certainly are very wasteful.

Handling the Crop.—Money is lost in handling the crop by not systematizing the work; by not studying the proper location of the packing house, and its best arrangement. The packing house should always be centrally located and should be so planned that the fruit always moves in one direction, after it arrives in the building. Much money is being lost in the Pacific Northwest at the present time by allowing much of the fruit to hang on the trees too long before harvesting, and our horticultural communities as a whole are meeting with great loss because we do not have the proper facilities for storage.

Labor.—Enormous sums are lost by the poor handling of labor. To get the best results the owner or foreman should be a student, one who plans his work carefully, who has planned out the work for each man for the entire day as much as it is feasible to do so. He must make a close study of his actual costs from day to day. Above all he must be a good student of human nature and understand men. He should be of an experimental type of mind, so that he is willing to try out, on a conservative scale, some new methods.

The Star Boarder.—There are too many star boarders in our orchards, trees that are eating their heads off, so to speak. These trees come under several classes: First, trees of very low vitality, that are weak and always will be. Second, the trees of wrong varieties. The competition is going to be so keen that all orchardists must find the varieties that do well under their conditions and grow to the highest degree of perfection. An examination of some of the apples on exhibition at this show demonstrates that if these apples are typical specimens from the communities in which they are grown then there are certain communities which should drop some varieties.

Let us all get together and work hard on this problem of determining the costs, and then strive to reduce them. If we could have saved one cent a box on each box this year on our orchard costs in the Pacific Northwest, we would have a fund of \$90,000 to \$100,000. Such a sum would go a long way toward solving some of the marketing problems of the day, and certainly would prove a magnificent advertising fund for the apple. I am confident that with the hearty co-operation of all we can reduce this loss very materially.

—
"The conference (International Railway Congress) established beyond question, I think, the supremacy of the American railroad from the standpoint of efficiency."—Hon. Franklin K. Lane.

—
The Sprague Canning Company of Chicago issues a very attractive little organ called "Cannery Notes." This is issued monthly and can be secured by writing for it.

BETTER FRUIT

HOOD RIVER, OREGON

Official Organ of The Northwest Fruit Growers' Association
 A Monthly Illustrated Magazine Published in the
 Interest of Modern Fruit Growing and Marketing
 All Communications Should Be Addressed and Remittances
 Made Payable to

Better Fruit Publishing Company

E. H. SHEPARD, Editor and Publisher
 H. E. VAN DEMAN, Contributing Editor
 STATE ASSOCIATE EDITORS

- OREGON
 C. J. Lewis, Horticulturist.....Corvallis
 H. S. Jackson, Pathologist.....Corvallis
 E. P. Wilson, Entomologist.....Corvallis
 WASHINGTON
 Dr. A. L. Meinander, Entomologist.....Pullman
 O. M. Morris, Horticulturist.....Pullman
 COLORADO
 C. P. Gillette, Director and Entomologist.....Fort Collins
 E. B. House, Chief of Department of Civil and Irrigation
 Engineering, State Agricultural College.....Fort Collins
 E. P. Taylor, Horticulturist.....Grand Junction
 IDAHO
 W. H. Wicks, Horticulturist.....Moscow
 W. S. Thornber, Horticulturist.....Lewiston
 UTAH
 Dr. E. D. Ball, Director and Entomologist.....Logan
 MONTANA
 O. B. Whipple, Horticulturist.....Bozeman
 CALIFORNIA
 C. W. Woodworth, Entomologist.....Berkeley
 W. H. Volek, Entomologist.....Watsonville
 Leon D. Batchelor, Horticulturist.....Riverside
 BRITISH COLUMBIA
 R. M. Winalow, Provincial Horticulturist.....Victoria

SUBSCRIPTION PRICE:
 In the United States, \$1.00 per year in advance
 Canada and foreign, including postage, \$1.50

ADVERTISING RATES ON APPLICATION
 Entered as second-class matter December 27, 1906, at the
 Postoffice at Hood River, Oregon, under Act
 of Congress of March 3, 1879.

The Consumers' Dollar.—The article on this subject by Mr. G. Harold Powell, manager of the California Fruit Growers' Exchange, should be read by every fruitgrower of the Northwest. Mr. Powell is known by the fruitgrowers all over the United States, having at one time been chief executive in the Department of Horticulture, Washington, D. C., United States Government. He is manager of the California Fruit Growers' Exchange, located at Los Angeles, which handles more cars of fruit than any other association. Mr. Powell receives a higher salary than any other man engaged in marketing fruit on a co-operative basis. While the article refers to the consumers' dollar in connection with the orange business, it is valuable for comparison and gives some information that may be utilized to advantage by the fruitgrowers producing every other kind of fruit. In the percentage table as compiled by Mr. Powell the orange grower gets 26 2/3 per cent after deducting the cost of picking and hauling to the packing house, which is 10 1/2 cents per box. The percentage net to the grower also is made after deducting the cost of packing, which is 32 1/2 cents per box. Mr. H. M. Gilbert of North Yakima delivered an address before the Washington State Horticultural Society meeting in North Yakima in January, 1913, which was published in the April edition of "Better Fruit" of that year. It is one of the ablest articles that has ever been written in reference to the "Consumers' Dollar" on deciduous fruits, and is condensed herewith, with the editor's apology for so doing, as lack of space necessitates it: "Mr. Shepard stole most of my thunder yes-

terday in what I consider the most comprehensive paper we have ever had on marketing before the state association as long as I have been connected with it." (Mr. Shepard's address was published in full in the March edition, 1913.) Mr. Gilbert said: "I started two years ago to make a rigid investigation about prices paid by the consumer and prices received by the grower and what the man in between secured. I believe my conclusions are conservative and I think they are reliable as they are the result of about 500 actual investigations made in a large number of markets in the different states. I find that where the consumer paid \$3 per box for apples the grower has been getting 80 cents; where the consumer paid \$2.25 for medium grades the grower received about 60 cents. The following tables illustrate the percentages, etc.:

Retailer sells best grades at.....	\$3.00	
Grower gets.....	.80	26 2/3%
Shipper, association or grower's agent gets.....	.10	3 1/3%
Railroad gets.....	.50	16 2/3%
Brokerage and commissions, receiving end.....	.25	8 1/3%
Retailer gets.....	1.35	45 %
		100 %

Consumer pays \$3.00, or 375% on what the grower gets; shipper gets 12 1/3%, railroad 6 2/3%, commission 3 1/3%, retailer 37 5/8% of price the grower receives.

Retailer sells medium grades at.....	\$2.25	
Grower gets.....	.60	26 2/3%
Shipper, association or grower's agent gets.....	.07	3 1/4%
Railroad gets.....	.43	19 1/3%
Brokerage and commissions, receiving end.....	.25	11 1/6%
Retailer gets.....	.90	40 %
		100 %

Consumer pays \$2.25, or 375% of price the grower gets.

"Everybody knows the grower gets too little and the consumer pays too much; that it costs too much to get fruit from the grower to the consumer, but instead of squarely facing the facts and finding a remedy by mixing brains with our business the grower denigrates the local buyers, the commission men, the association or shipping concerns, in fact everybody except himself and the retailer as the big trouble. While the railroads have given good service I believe that the service could be improved, and in my opinion 50 cents per box is too much to pay on peaches to the Middle Western Cities from the Northwest. I believe that the Panama Canal will reduce the freight rate on apples to Atlantic ports to a figure approximately about 25 cents per box." Mr. Gilbert stated: "That while the railroads take 50 cents per box the retailer takes \$1. How can this be remedied? In the first place the retailer must be persuaded to get rid of the idea that Northwestern fruits are a luxury to be sold to the rich by the dozen. For years we have allowed our apples to go to the speculator and the speculator has resold them to other speculators with a profit added, and sometimes as much as seven profits have been made by actual tracing. The retailer has paid an exorbitant price and therefore considers our fruit a luxury. The old days for speculators

were passed. The deal is too big and the quantity and tonnage too great, but with new adjustment will come lower retail prices. The retailer must be persuaded that it is good business to handle a greater number of boxes of apples at a smaller profit and make more money than to handle a few boxes at a higher profit and make less. There is the problem. Upon this problem the retailer must be educated. The retailer controls the situation. The grower cannot sell to the consumer; it is impossible. The grower cannot fight the retailer. What can be done? We must join hands with the retailer; we must study his problems; we must show him our fruit is not a luxury, but of real value as an every-day article of diet. In good-sized cities the retailer is frequently able to purchase in carlots. By so doing he can secure his fruit at much less cost than he can by obtaining it by express in ten-box lots from some large distributing center. Much can be done along this line to increase consumption. The retailer ought to be educated as to what varieties of peaches, pears and apples and other fruits are best to eat in the different months of the year. The retailer is not mean or vicious. He is a man like the rest of us, quick to catch an idea and anxious to be shown. Mr. Shepard in his remarks yesterday said and reiterated, 'There's a remedy.' So say I, 'There's a reason,' and a reason on reason why the retailer charges such large profits. No one can correct his attitude as easily as the grower and his shipping agents. Some of the pleasantest work I have done has been in changing the attitude of reliable retailers and wholesalers. There are thousands of them; get their attitude corrected, treat them right and you will find they are your best business friends."

Again the editor desires to call the attention to the comparison of the percentage of the "Consumers' Dollars" obtained by the orange grower compared with the apple grower. The orange grower's percentage of 26 2/3 per cent is after deducting the expenses of picking, packing and hauling; the percentage of the "Consumers' Dollars" on apples, according to Mr. Gilbert's analysis, is 26 2/3 per cent without the cost of picking and packing being deducted. In the first instance, where the apples are retailed at \$3 to the consumer, at least 30 cents should be deducted for picking and packing (and they most frequently cost 35 cents) from the consumers' dollar, which would be 10 per cent reduction in the percentage the growers get, reducing his percentage to 16 2/3 per cent of the consumers' dollar as compared with 26 2/3 per cent received by the orange growers. Why? That is the problem for the apple grower to study and solve. In the second analysis, where the consumer pays \$2.25 and the grower gets 60 cents, or 26 2/3 per cent, the price of picking and packing being 30 cents and, as before stated, frequently 35 cents, it would reduce the grower's price per

box net to approximately 30 cents and reduce the percentage received by the grower of the consumers' dollar to 13% per cent. Again the editor calls the attention of the apple grower, asking the question, Why? The matter needs serious investigation and study in order that the problem may be solved and the apple grower of the Northwest should receive as high a percentage of the consumers' dollar as has been obtained by Mr. G. Harold Powell, manager of the California Fruit Growers' Exchange for the orange growers of the State of California.

Apple Grading.—Grading machines were introduced into the Northwest four years ago when the editor of "Better Fruit" placed on order for the first grading machine that was ever sold in the States of Oregon, Washington, Idaho and Montana. Since that time a number of new grading machines have been manufactured and placed on the market, all meeting with pretty good success and giving pretty good satisfaction. Each year each one is improved. Thirteen different grading machines are being manufactured. The main point to present for the fruit-growers' consideration at this time is: That grading machines, according to the experience of different users and operators, have saved the growers from three to ten cents per box in grading and packing the apple crop. Many of these graders have been found practical for grading pears and even fruit that can be bruised as easily as peaches. In fact it is claimed by some manufacturers that their machines will grade every variety of fruit without bruising. The opinion seems to generally prevail that every fruitgrower who has 2,000 boxes of apples can save enough in one or two years to more than pay the cost of the machine. When the crop is larger he can save the price of the machine and considerably more in one season. While the item of saving, as already suggested, is an important factor during the present time when stringent economy is necessary, another fact well worth the attention of

Avoid Mistakes in Pump Buying

LET US SEND YOU THIS FREE BOOK WHICH IS A SURE GUIDE TO PUMP VALUES

Most articles can be judged with fair accuracy at the time of purchase but some cannot, for instance pumps. Unless you have had previous experience with a brand or make of pump, you don't know until you have the pump in service for some time whether it is worth the money you paid for it. We want to help you to full value by sending you this pocket Myers Pump Catalog. Be guided by the little booklet, and you will make no mistakes in pump buying. It shows in a brief way the big Myers line of well pumps, power pumps, tank pumps, for deep wells, shallow wells and for every service. Each year for many years we have been shipping a tonload of Myers goods into this territory, the trailload is constantly getting longer and longer, it is only a question of time until every pump user will know by his own experience or through the word of neighbors that MYERS signifies the largest value possible to build into a pump.

We handle the largest and best line of pumping and water supply goods on the Pacific Coast

Mitchell
LEWIS & COMPANY
Portland, Spokane, Boise

The Myers Patented Glass Valve Seat

If the Myers Pump had no other advantage than the Myers Patented Glass Valve Seat, you would be sure to buy it. This glass seat is so made that it is practically impossible to leak water from a glass glass valve seat.

Other Myers advantages: big capacity, easy operation and extra long life.

This booklet also shows the MYERS Line of Hand and Power Spray Pumps. Get it by checking and sending the coupon. Then see the pumps you select at the local Myers store.

More dealers handle Myers Pump than any other make

Dear Sir—Without obligation to me, send you pocket Myers Pump Catalog. I am interested in pumps as checked below:

Well Pump, Power Pump for Shallow Well Tank Pump, Spray Pump

Name _____
P. O. _____

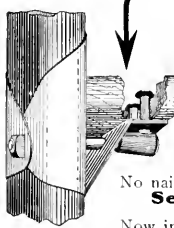


the fruitgrower is that with a good grader the fruit can be graded more uniformly to size and the grading, as far as blemishes are concerned, can be done more perfectly for the reason that the man operating the grading machine has his mind concentrated on his work and is therefore in a position to do better work, but it must be remembered, particularly when packers are paid by the box, if the grading is not properly done then the packing will not be up to grade, because the packer who is paid by the box who is anxious to earn money will not take time to sort out

apples that are below the grade. However this statement is just as true if apples are graded by hand as if they are graded by machine. Grading by machine is in no way responsible for apples not being graded according to standard, but poor machine grading is due entirely to the fact that the graders are either careless or the grower is not particular in his requirements.

Markets for Potatoes.—Hon. H. B. Miller, Director of the Department of Commerce and Industrial Survey University of Oregon School of Commerce, has just written a bulletin on "Markets for Potatoes," which is published by the University of Oregon. It is the most complete and thorough research of anything that has been published on the subjects covered in reference to potatoes, containing an immense amount of valuable and interesting information, as well as much statistical matter. The first chapter is a summary of salient features; a table is given showing the number of acres and the number of bushels with the average yield per acre in every foreign country as well as United States; a table showing the acreage, production, prices, exports and imports into United States is complete from 1901 to 1914. Another table shows the acreage yield in bushels and the average per acre for every state in the Union for the years 1912-13. The average price is also shown for ten years, from 1900 to 1909. The average price is also shown for each state from

"See that joint — That's the point"



Security galvanized step-joints, used in **Security** ladders only, assure rigidity and stability.


The sense of safety will encourage your pruners and pickers to do their best work.

When steps most used wear out, you can readily replace them without weakening the ladder—if it's a **Security**.

No nails, no rods, no blocks and no mortising in **Security** step-joints.

Now in service in more than 4,500 Coast orchards. Sold in 80 Coast fruit centers.

Ⓜ A postal brings you 1915 illustrated booklet and the WHYS of **Security** Success



SECURITY
8-foot Tripod

J. B. PATTERSON
82 Franklin Street, Oakland 517 Union Oil Building, Los Angeles

The Label Helps the Sale of Your Fruit



We are originators and producers of distinctive and artistic labels. Our Apple and Case labels will make your fruit more attractive and help the sale.

Let us know your needs and we will submit estimate. Write nearest office.

Schmidt Lithographing Co.

SAN FRANCISCO

Los Angeles Fresno Portland Seattle Salt Lake

Get Rid of the Destructive Gophers by Using an Efficient Trap

E. J. Chubbuck Co., San Francisco, California— I have found the Ideal Gopher Trap to be the best thing in the trap line. I have used many different kinds of traps but have put them all aside for the Ideal. Consider the trap as the surest and safest way of exterminating the gopher, having caught 104 gophers in the month of February with five of the Ideal Gopher Traps.—E. D. G., Lathrop, Cal., March 16, 1925.



The only trap guaranteed to catch small or the large pocket gopher. Being round with thin edges gopher walks into trap before detecting anything in runway. 100 per cent efficient—catches gopher every time. Far safer and surer than poisons or gas. Farmers say it's worth dozen other makes. Price 50c. If your dealer can't supply you, will be sent postpaid upon receipt of 60c; two traps \$1.00; six for \$5.00. Money back if not satisfied. E. J. CHUBBUCK CO., Dept. C, San Francisco, California

1900 to 1909 and the farm price also for the years 1912-13. The next chapter deals with conditions in reference to the potato business on the Pacific Coast, while another shows competition for Oregon potatoes. Another chapter deals with possible markets for Oregon potatoes. In addition to this much interesting matter is contained in chapters on Varieties, the Industrial Use of Potatoes, Potato Starch, Alcohol from Potatoes, Products from Dried Potatoes, Potatoes as a Stock Food, etc.

Fruitgrowers during the months of April and May are kept pretty busy with spring cultivating and early sprayings. During the balance of the summer, while the fruitgrower has plenty to do cultivating, spraying and irrigating, he frequently has some time to spare, and it seems well worth while to suggest that during these odd moments he should begin to think of preparing for harvesting his crop this fall. It is no unusual occurrence for the fruitgrower to drive to town and find that

the dealer is all out of picking buckets or ladders. Every fruitgrower should make up his mind how many new picking receptacles he needs and purchase them early in the season. He should estimate his crop and determine about how many pickers will be required to gather it; repair his ladders that are worth repairing and purchase the necessary number of new ones in advance of the season, otherwise he may be disappointed and be unable to get what he wants and either have to go without or take some ladder or bucket that is unsatisfactory.

1914 Grading.—The complaint from the dealers, and it seems well to include our own salesmen who handle the apple crop, is to the effect that the 1914 grading was not as carefully done as has been done in the past. The fruitgrower has a reputation to sustain. He must sustain that reputation and put up a pack that meets all requirements as to grade if he expects the dealer and the consumer to pay the price. It seems

wise to caution every fruitgrower along this line in advance of the harvesting season, urging him that it is to his interest to see that all kinds of fruits are properly graded and carefully packed, beginning with strawberries, including cherries, apricots, peaches, plums, prunes, pears, apples, etc.

Diversity in Fruit Growing.—The fruitgrower today is becoming more of a diversity farmer. There are many crops that can be grown between the trees, particularly in young orchards, which will bring in some extra money between seasons and pay a good profit. An interesting article on this subject, entitled "Inter-Cropping of Orchards," by Professor Thornber, appears in this edition and should be read by every fruitgrower.

Strawberry growers who want good picking and packing done should look to the comforts of their help, by seeing that they are provided with good camping accommodations in the way of comfortable tents, wood and water, making harvesting season attractive and comfortable.

THE WAY TO PREVENT DROUTH--

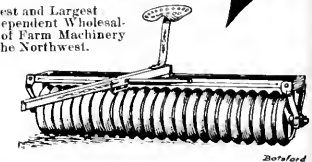
Is to keep your orchard thoroughly pulverized. Gives seed a quick start, aids cultivation of growing crops, saving moisture in dry season, prevent blowing away of soil, etc.

THE WADE CORRUGATED PULVERIZER

Is scientifically built for crushing lumps, firming loose soil, and stirring the surface like a cultivator. Made in single, double or triple gang. Hundreds of them are now in use by orchardists of the Northwest. Send a postal today for Free Booklet, and name of nearest dealer.

RMWADE & CO.
SINCE 1865
PORTLAND, ORE.
321 Hawthorne Avenue

Oldest and Largest Independent Wholesalers of Farm Machinery in the Northwest.



THIS 2 UNIT PLANT "Did Wonders"

Last Summer

Built in Various Sizes



It is the MOST EFFICIENT EVAPORATOR

It dries "Fancy" Dried Fruit of all kinds in record time, which brings "Fancy" prices, with low production cost. None "just like it." None "just as good."

It makes Apples at 8c dry pound worth \$15 per green ton. Inquire
 PERFECT CONTROL OF TEMPERATURE, HUMIDITY AND CIRCULATION.

Inquire
 1005 CHAMBER OF COMMERCE, PORTLAND, OREGON.

The Outlook for Prunes

By H. S. Gile, Salem, Oregon

THE subject of this article is not in any sense new, and in approaching it one naturally wonders what new thing can be said. Perhaps a look behind may give us some suggestion as to the possibilities of the future. Oregon prunes, like many other products possessing much merit, have passed through their period of storm and the producers have had their times of trial and tribulation. Their dark days, however, were not of long duration and may be said to have begun and ended between the years 1902 and 1904. The cause may be attributed to over-promotion in the sale of lands and planted young orchards at the very inception of the prune-growing idea in the Northwest, or perhaps to be more correct, we should say under-development of the markets in anticipation of the coming new product. It was not a small task to introduce, or rather to force upon the market, a competitor of the California French prunes, which at that time had just about reached the height of its popularity.

The Oregon prune was not wanted by the wholesale merchants of this country and there was good business reasoning in their objection to placing in their stock another variety of prune entirely different, unknown, and according to their argument of doubtful quality. The result was that for a time when the majority of prune orchards had reached the stage of full bearing that there was overproduction, measured by the demand. In fact there was no demand. The demand had yet to be created. It would be a long and not uninteresting story to recite the experiences through which we passed at about that period, but that is another story. Suffice it to say that the sales of the product at less than cost of production forced matters in two ways: First, it forced some of the most unlikely orchards and their owners out of the business, and, second, the very cheapness of the fruit forced consumption. Then we began to learn some things concerning the necessary appli-

cation of sterilization processes to the fruit in order to properly fit it for keeping. Also by that method we soon found that the fruit was improved in quality so that there was much less danger of the careless cook serving the fruit improperly prepared.

Orchardists have also learned that there were certain sections, certain elevations, certain soils, certain slopes, where the fruit produces most regularly and ripens the best quality of prunes for evaporation, while other districts can produce the same fruit better for fresh shipment. All of these experiences may be had by the amateur who may wish to become a grower of prunes. He can start assured that he will avoid some of the rocks which have caused wrecks in the past. Not only had the home markets to be cultivated, but it soon became apparent that if any large success was to be gained we must get into the large foreign markets, and there again those of us who may be said to have pioneered the marketing of the Northwest prune industry had a still harder struggle, coming as we did in direct contact and opposition with the (then called) Turkish prune and the French prune and carrying the battle very close to the base of their supplies. A foothold was gained first in England and from that it has spread

until practically all of the European countries, in a greater or less extent, have received our fruit, and had it not been for the war, Italy, France and Switzerland would this year have taken considerable shipments of Oregon prunes. Small shipments only have gone to these countries heretofore. I am referring now entirely to the so-called Italian prune.

During the last several seasons the demand may be said to have exceeded the supply and it should be said frankly that horticulturists should not base their calculations upon these extreme values in forming their personal estimate of the outlook for prunes. However, it is not necessary that they should. The truth concerning the net results of the prune product in Oregon, based upon a fair average of several seasons, makes the story quite good enough.

Just a word here concerning Oregon French prunes. They seem to be strong growers and certain producers in any place where the other variety of prune does well, but there are sections in Oregon where the French prune seems to be especially at home and the quality produced is not surpassed by any French prune grown in any country in the wide world. Having recently spent several months in the heart of the pro-

Portland Tent & Awning Co.

MANUFACTURERS OF

Tents, Awnings, Covers

Canvas Goods of All Descriptions

Hammocks, Camp Furniture, Etc.

Telephone: Main 1550

16 North Front St., corner Burnside, PORTLAND, OREGON

Special tents to order for housing fruitgrowers' extra help during strawberry and apple picking seasons. Extra large tents to order for apple growers, suitable for storing apples as they come from the orchard; also, suitable for grading machines and apple packers. Weather-proof canvas wagon covers a specialty.





Buy "Corona Dry"

One pound of "Corona Dry" will do the work of three pounds of Paste Arsenate and do it better

Imitated but not duplicated

But economy is not everything. Efficiency is more important. What would it mean to you to have a spray mixture of standard strength and be absolutely sure that all of one spraying or of many sprayings was absolutely the same strength? Evaporation, difficulty of perfect mixing, make this impossible with a paste arsenate. You can have a standard efficiency if you use *Corona Dry*.

Largest and most progressive growers have rendered the verdict

A large practical usage in every section of the country has proved that "Corona Dry" is unequalled in efficiency or as "easy mixing." It does not freeze, dry out or cake; always retains its original strength. A perfect mixture, a perfect standard of unvarying strength is assured with

"CORONA DRY"

Arsenate of Lead
Patented June 30, 1913

The "Standard" for Convenience, Economy, Efficiency

Quickly and easily mixed. No working up—no straining needed—no sediment. No lumps. No waste. Never clogs spray nozzle. Highest per cent. of actual killing power. Absolutely safe, will not burn. Sold in net weight packages: 200 lbs., 100 lbs., 50 lbs., 25 lbs., 5 lbs., 1 lb. No shrinkage, seepage, evaporation. Every package contains actual net weight of "Corona Dry" paid for. Remember, "Corona Dry" means no guesswork, but a standardized spray in which the mixture is always the same strength and efficiency

Write for Booklet. Ask for Corona "Tree Insurance" Policy. Address

CORONA CHEMICAL CO., Dept. E, Milwaukee, Wisconsin

MANUFACTURERS OF

Insecticides and Fungicides, Arsenate of Lead, Lime and Sulphur, Bordeaux Mixture, Paris Green, Etc.

Distributing Agents: Boston, Mass.—Joseph Breck & Sons Corporation
Philadelphia, Pa.—Pittsburg Plate Glass Co.

Memphis, Tenn.—Hessig-Ellis Drug Co.
New Orleans, La.—Finlay-Dicks & Co.

Spokane, Wash.—Spokane Seed Co.
Portland, Ore.—Portland Seed Co.

Northwestern Sales Agents **Portland Seed Co., Portland, Oregon** Catalogues and prices on request

ducing district in France in the study of prune production, I feel competent to speak upon this matter. The grower should aim to produce good-sized fruit, first by proper selection of stock and later by proper methods of pruning. Such an orchard, especially if carried in connection with an orchard of Oregon prunes, will prove profitable and satisfactory in its results. It is distinctive in quality from any other French prune and decidedly superior.

In turning now to the future, there is visible no cloud of any serious consequence except that caused by the war, both in its present effect and its possible after effect, both of which are worthy of serious thought. While it is true that our own country has enormous consuming power, it is also true that we must have the help of the foreign consumers to absorb the present enormous cured-fruit supply of the Pacific Coast. Without them we shall constantly have the menace of unsteady prices, too low perhaps at times for profit to the producer. We all know

what happened to our markets this season during September and October when the war automatically annulled great numbers of foreign dried-fruit contracts, though England at least is again taking a limited quantity of our fruits. The most serious question is, however, relative to the purchasing power of the masses in England and on the continent after the war is over. This is an unknown condition upon which we can only venture a guess. With cheaper transportation under normal conditions abroad we have every reason to anticipate greatly increased demand, and were it not except for this one very serious condition there could be nothing in the market situation which would not easily justify the demand for doubling as speedily as possible the present prune acreage of the Willamette Valley and in other districts where the best evaporated product is now being made.

This writer more than six years ago advised increased prune planting in more than one public address and at the same time advised against the planting of apples in districts where prunes could be successfully produced. Some may feel that apples, having reached a very low level of value on account of, shall we say, overproduction or under-development of markets, will reduce the demand for prunes and

consequently additional planting will be a mistake. I hardly think so. Except for the limited effort of the Willamette Valley Prune Association, a small co-operative organization in Salem, nothing has been done yet to advertise the excellent food value of Oregon prunes to our own people in the United States. A very small percentage only of the wholesale merchants of the United States carry Oregon prunes as a regular item of stock, and I seriously doubt if 10 per cent of the retail merchants in the United States have ever sold them. One reason for this situation is that we have in the Northwest no other considerable amount of any other variety of cured fruit which we can include with our prunes to make up carloads and not many wholesale merchants,—only the very largest of them,—can afford to purchase Oregon prunes exclusively in carloads of 40,000 pounds. When it was possible to ship 20,000 or 21,000 pounds as a minimum it was not so bad. Fruit-

WANTED—The following Editions of **BETTER FRUIT**

for which I am willing to pay \$1.00 each for good copies:

Vol. 1, Nos. 1, 2, 4 and 9

Communicate with JOHN C. WISTER
Wister Street and Clarkson Avenue
GERMANTOWN, PHILADELPHIA, PA.

Western Pine Box Sales Co.

HIGH GRADE FRUIT BOXES
APPLE, PEAR AND PEACH BOXES
Fruit and Vegetable Crates
GOOD SERVICE—Write us
SPOKANE, WASH.

men of the Pacific Coast, especially in the Northwest, must strenuously resist in the future any effort on the part of the transportation companies to increase the minimum to any figure above 40,000 pounds.

The discrimination of transportation companies against dried fruits in the rate charged, as compared with canned salmon and some other Coast products, has already cost them the bulk of this traffic, which is now being forced to find its way east by water. Growers should prepare to make some large general effort to advertise their product. This was seriously considered in 1903 by many of the growers in Oregon under the direction of the Willamette Valley Prune Association, but had to be abandoned because at that time it was impossible to secure the necessary funds. You have noticed today the national publicity which is being given through the magazines to raisins, oranges, grapefruit, etc. There can be no doubt that national advertising where there is national distribution is today being handled in a scientific business manner, and that it pays tremendously goes without saying. Can we improve the quality of our product? Most emphatically we can. In fact we must do it, and there are many methods of preparation and packing the fruit for market as yet untried by the Oregon packers.

Great progress has been made, especially in improving packing methods, but I must speak plainly here concerning the greatest evil which the industry has to contend against today. It has been with us from the very beginning. In the early period of the industry there may have been some excuse because people did not then know any better. They had to learn how to properly cure their fruit. It must in fairness be said that the great majority of the prune growers in the Northwest do today exercise their very best knowledge and to place upon the market a well cured, clean, good, wholesome product, but there is another class who not only will not learn but evidently do not want to know. In fact they are too dishonest to turn out an honest product. These men care nothing for the future of the industry or for the troubles of the various men through whose hands their product must pass before it is finally consumed or dumped, mouldy and rotten, into some retail merchant's waste barrel. It affects them not at all to tell them that their fruit will not keep, that it will make enemies forever of perhaps a great many merchants who will innocently get hold of this trash, to say nothing of thousands of consumers who will eventually get the half fermented, mushy stuff upon their tables and forever swear off from eating Oregon prunes.

If this condition continues, what avails it to spend money to advertise our product when a certain percentage of the goods go upon the market annually in this shape? You say, "Don't buy it"; we don't and reliable packers don't, but there is in the packing busi-



The Phone for My Home

WITH a Kellogg Telephone
in your home, you are ahead of trouble and losses that come when sudden illnesses develop or long trips are taken to town only to find the markets gone to pieces.

The man with the good telephone in the house is in quick touch with the voice of the entire world. In a minute he knows the markets. In case of fire, tramps or illness, he can call the whole community. If he has an orchard and the fruit ripens quickly, he can scour the country for help in harvesting. The whole community becomes a living thing to him and that old dread of country life—isolation—is gone forever.

Kellogg Telephones

End Telephone Troubles

They are made in the largest independent telephone factory in the world and have to undergo the most rigid inspection for quality ever devised. 37 distinct tests given every instrument before it is O. K.'d for shipment.


You may find that Kellogg instruments cost slightly more than ordinary ones. But a huge trade has been built on them all over the world because they do away with repair bills and because after years of service the voice is transmitted as clearly and plainly as when they are new. Just the other day a customer wrote us that he had a Kellogg phone in service fifty-n years.

The instrument shown here is Kellogg Favorite. Less wall space, stronger ring, reliable lightning standard, auto switch receiver and mouthpiece, secret service push button to call "Central" without calling neighbors.

Send in your name and address and we will put you on our telephone bulletin list. Let our expert department help you in your telephone troubles. Get free the kind of information that will save you money. Write for Bulletin 21.

Kellogg Switchboard & Supply Co.
Mission & Third Streets, San Francisco, Cal.





BARKER
WEEDER, MULCHER
AND
CULTIVATOR

For Home or Orchard Garden

One man with a Barker Weeder, Mulcher and Cultivator does more and better work than ten men with hoes. Beats any other implement made for weeding and cultivating vegetables and similar plants. Fine for strawberry culture, too.

The Barker kills weeds and makes a perfect soil mulch, in ONE OPERATION, by the combined working of its reel knives and stationary blade. Forces plant growth, insuring size and quality. Has SHOVELS FOR DEEPER CULTIVATION—adjustment simple. Runs light. Works right up to the plants without injury. Leaf guards for larger plants. Three sizes.

Costs little. Write today for Illustrated folder and Special Factory-to-User offer.

THE BARKER MFG. CO., BOX 112, DAVID CITY, NEBRASKA



To California and the Expositions

"North Bank" Rail and 26 Hours' Ocean Sail

Steamer train leaves Portland 9:00 A. M. Arrives Payel 12:30 Noon. Lunch on ship. S.S. arrives San Francisco 3:30 P. M. next day.

Palace of the Pacific

S.S. "Northern Pacific"

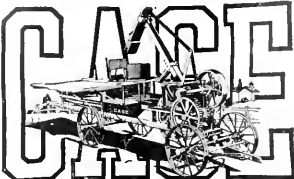
Fastest ship on the Pacific.
Built in America for the Stars and Stripes.

Sails April 29, May 3, 7, 11, 15

Same Time and Rates as All Rail
Fares Include Meals and Berths
Between Portland and San Francisco

All agents Great Northern, Northern Pacific Rys., Burlington Route and
THE NORTH BANK ROAD

A. B. JACKSON, G. A. Davenport Hotel, Spokane
R. H. CROZIER, A. G. P. A., Portland, Ore.
SAN FRANCISCO—665 Market St. C. E. STONE, Traffic Manager



The Name Behind the Goods
Baling Presses
Different from the Others
 CASE Steel Belt Power Baling Presses are built in two sizes—14 x 18 inches and 17 x 22 inches, capacity of 3/4 to 5 and 4 to 6 tons per hour. Require only 6 to 10 Brake horsepower to operate.
 Just to illustrate how they are built, remember this—the boxes of all gears are carried on a single casting. No chance then for gears to get out of line. Do you want to know more about the details of their construction? They are built like all CASE machinery, to do the best work in the shortest time at the least cost—and they do it.
 The safest, best look to operate. You can't choke it. Every bale compact and smooth. Operates with 2 less men when CASE Hay Forks are attached.
CASE Sweep Power Baler
 Just right for home use. 3 men and 2 horses will bale from 14 to 25 tons per hour. Automatic feed. Bales 60% faster than any hand-fed machine. Strongly built. 12-inch tying chamber, wheels cannot hauler. Send for catalogue and prices.
J. I. Case Threshing Machine Co.
 Dept. 827, Racine, Wis.

Build a Better Home for Less—


Do away with all middlemen's profits—I have cut the profit of architect, contractor and retail lumber dealer by my

New System of Ready Cut Houses

The houses that come to you cut to fit, every thing complete—ready to put together, with full instructions—an intelligent boy can build one.

Write for my **FREE BOOK NO. 18.**

J. BRYSON MOORE
 1020 Northwestern Bank Bldg. PORTLAND, OREGON



This 4-Room House Cost \$394.24



Have a Conkey Corner
 in your poultry house. **Conkey's Remedies and Tonics** are good, and if you have them on hand, you can laugh at disease. Send 4c. in stamps for "Conkey's Poultry Doctor."
THE G. E. CONKEY CO.
 111 Conkey Bldg., Cleveland, Ohio

Porto-PANAMA Hats
 COOL as a drop of dew

Hand-woven, soft, durable, comfortable. Good as the South American Panama but cooler, lighter, more dressy. Direct from maker to you \$1.50 postpaid. State size and send money order. Money refunded if you are not perfectly satisfied. Very stylish for ladies this year.
MARTIN LOPEZ & CO.
 P. O. Box 148—E50. San German, Porto Rico.
 Reference: Bank de Economias, San German.

ness, and perhaps there always will be, a certain element so hungry to do business that they too have lost sight of all the higher principles of business and these unfit prunes are always bought by them. Of course the inevitable end of that packer is failure sooner or later, but by a run of fortunate market conditions he may last through several seasons and during that period can do the industry untold injury. I could point you to any number of wholesale dealers and to the trade in more than one entire city where they have quit buying Oregon prunes for no other reason than that above stated.

It seems to me that the time has come and that there is no other alternative except to compel this small minority to become honest. We must have some sort of legislation which will fix a fair, reasonable standard for Oregon cured fruit, to which both grower and packer shall be compelled to measure up, and with this law there must be provided the necessary machinery to make it decidedly effective. Give us this and I believe the outlook for prune growing in the Northwest is decidedly bright. Without it the majority cannot build up the trade fast enough to overcome the counter effects of the careless, dishonest operator. The outlook for the Oregon prune as a steady, profitable horticultural industry is decidedly bright except for the two exceptions noted above, both of which will eventually be eliminated.

Notice

The American Association of Nurserymen will hold their annual convention at Detroit, Michigan, June 23, 24 and 25. Further information can be obtained by addressing John Hall, secretary, Rochester, New York. The conventions of this association are very instructive and valuable to the fruit growers as well as the nurserymen and all those who can find it convenient to attend this meeting should do so.

Fruit Distributors Elect

Wenatchee, April 20.—The Sub-Centrals of the Wenatchee-North Central Washington Fruit Distributors held their annual meetings. The Cashmere Fruit Distributors elected the following trustees: C. G. Carey, H. E. Tibbetts, J. M. Francisco, Earl Babcock, O. M. Torrence. The Entiat Fruit Distributors elected: L. Auvil, S. J. Santmeyer, T. I. Jones, J. W. Bonar, L. C. Sage. Monitor elected: A. J. Baker, C. C. Moore, C. W. Moore, Walter Richardson, H. J. Mohler.

The Oregon Countrymen, published by the Oregon Agricultural College, Corvallis, is one of the most instructive and attractive magazines issued by any of the agricultural colleges. The cover page for February contains a very attractive cut of the Oregon State building.

The Western Fruit Jobbers' Association of America held its eleventh annual meeting in Los Angeles, February 15-19.

Increase Your Strawberry Crop Next Year

It can be done by using

“Beaver Brand Animal Fertilizer”

Every strawberry raiser who has ever used this quality brand of fertilizer will attest that *splendid results* have been obtained at an exceedingly *low cost*.

In other words—it pays to use Beaver Brand Animal Fertilizer for the increased crops will many times offset the original cost of the fertilizer.

The period of theory has passed and the results from our fertilizer are a *fact*.

Beaver Brand Animal Fertilizer is strictly animal in origin—containing the proper proportions of the elements needed in the development of plant life.

Fertilize your acres NOW for next year's crop.

Write to-day for information about the pioneer fertilizer of the Northwest that will be of value to you. Ask for Booklet F37 and tell us how many acres you have in strawberries.

UNION MEAT COMPANY

North Portland, Oregon

Pull STUMPS Like This, Quick and Easy



Pull out the biggest stump in five minutes or less. Pull out an acre or more of stumps a day. Stop paying taxes on loafer land. Clear out the stumps and raise money crops. Let me show you how to make \$1280 00 on 40 acres the first year after stumps are out—and \$750 00 every year after. Write me. A postal will do. The



HERCULES All Steel, Triple Power STUMP PULLER

has the pulling power of a locomotive. It is the only all steel—triple power puller made. No stump can resist it. Has many features—self or stump anchoring, double safety ratchets, low down construction—all parts turned and polished for light draft. Send in your name now for best book published about stump pulling. Shows many fine photos and letters sent in by Hercules owners. My special price will save you a lot of money. Address, B. A. Fuller, President.

Get My Low Price and 30 Day Free Trial Offer Now!

My special price will please you. Hurry up to make sure of this price proposition. Only a few Hercules pullers left at this figure. 30 days trial—3 year guarantee. Any broken casting replaced, within 3 years—whether the breakage was your fault or fault of machine. Write me NOW on a postal.

HERCULES MFG. CO., 369 23rd St., Centerville, Iowa

Inter-Cropping Orchards

By W. S. Thornber, Consulting Orchardist, Lewiston, Idaho.

THE orchard industry of the Northwest, like all other industries of its kind, is passing through a series of periods all of which will eventually contribute to the permanent good of the fruitman. Those best posted upon the subject and most vitally interested

have watched with interest "The One Spray for Codling Moth," "The Lime-Sulphur for Scale," "The Open-Vase System of Pruning," "The Absolutely Clean Cultivation Advocate," "The Grass-Mulch Orchardist," and now comes the "Orchard Inter-Cropper" as the fulfillment of the law for all evils. Each of these phases has had its part in the great industry and each has left a mark for good; however not one of them has been able to succeed under all conditions. Nor must we expect the last, if not the greatest, to do all that is expected of it. High-priced land, expensive water rights, costly orchard tillage and the long wait between the planting of an orchard and the realization of returns, coupled with the low prices received for fruit during the past four or five years, have materially fostered the seeking of returns from the orchard land of the Northwest during the development period of the orchard and also during seasons of low prices or small crops.

orchardist and his family during the development period. In the case of the bearing orchard, inter-crops should be made to so reduce the operating expenses that the fruit sold as extra fancy grade should always mean net profit, and never have to be used to pay necessary expenses. Management of this kind will make successful orcharding. Various avenues have been sought for

F. A. BISHOP, Secretary
HOOD RIVER ABSTRACT COMPANY
 HOOD RIVER, OREGON
 ABSTRACTS INSURANCE
 CONVEYANCING

Wanted SALESMEN SALESWOMEN

Our representatives are earning \$50 to \$150 per week. Write quick for sample and territory. It's selling like wild-fire. Everybody's a Customer

HYTEE'S FACTORIES
 199 Majestic Building INDIANAPOLIS, INDIANA

HOME CANNERS All sizes. Used by U. S. Government Schools, Girls' Clubs, Collaborators and Farmers everywhere. For Catalog and Special Offer, write

ROYAL HOME CANNER CO., DEPT. P., ALBION, ILLINOIS

YOU CAN EARN \$50.00 PER DAY with the Gearless Improved Standard Well Drilling Machine. Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours. Another record where 70 feet was drilled on 2 1/4 gal. distillate at 9¢ per gal. One man can operate. Electrically equipped for running nights. Fishing job. Engine ignition. Catalogue W.8. **REIERSON MACHINERY CO., Manfrs., Portland, Ore.**

BUY AND TRY

White River Flour

MAKES

Whiter, Lighter Bread

"PERFECT" Cement Coated Nails

OUR PRODUCTS ARE OF SUPERIOR QUALITY AND GUARANTEED TO GIVE SATISFACTION.

PRICE and QUALITY always right.

PITTSBURGH STEEL COMPANY, Pittsburgh, Pa.

A. C. RULOFSON CO.

"The Cement Coated Nail People"

Monadnock Building, SAN FRANCISCO, CALIFORNIA
PACIFIC COAST SALES MANAGERS

No Matter What Crop You Grow, Your Soil Must be Right Always

The universal soil need is Phosphorous.
The most economical and logical source of Phosphorous is

Finely Ground SHIELD BRAND High Grade Phosphate Rock

The Phosphate of Lime

EFFICIENCY AND ECONOMY ARE INSEPARABLE EVERYWHERE

UNITED STATES PHOSPHATE CO.

405 Marsh-Strong Building, Los Angeles, California

HOOD RIVER VALLEY NURSERY COMPANY

Phone 5634

Route No. 3, Box 227

HOOD RIVER, OREGON

Plantation four miles southwest of station, Belmont Road

We will be pleased to show you trees, apple trees that have a heritage, a quality that should be considered by everyone who plants a tree. Our trees are grown in clean hillside virgin red soil with clay subsoil, producing the most vigorous root system. Our buds are selected from the best bearing healthy Hood River trees that make the Hood River apple famous throughout the world. Our trees will give you satisfactory results in vigor, fruit and quality. Ask for catalog. We guarantee our products. Apples, pears, peaches, apricots, almonds and walnuts. A complete line of the best varieties of all kinds of fruits.

H. S. BUTTERFIELD, President

W. J. ENSCHEDE, Manager

LADD & TILTON BANK

Established 1859

Oldest Bank on the Pacific Coast

PORTLAND, OREGON

Capital \$1,000,000.00
Surplus 1,000,000.00

Officers:

W. M. Ladd, President

Edward Cookeingham, Vice President

W. H. Dunckley, Cashier

R. S. Howard, Jr., Assistant Cashier

J. W. Ladd, Assistant Cashier

Walter M. Cook, Assistant Cashier

INTEREST PAID ON TIME DEPOSITS AND SAVINGS ACCOUNTS

Accounts of banks, firms, corporations and individuals solicited. Travelers' checks for sale, and drafts issued available in all countries of Europe.

LESLIE BUTLER, President
TRUMAN BUTLER, Vice President
C. H. VAUGHAN, Cashier

Established 1900

Butler Banking Company

HOOD RIVER, OREGON

Capital \$100,000.00

4% Interest Paid in our Savings Department

WE GIVE SPECIAL ATTENTION TO GOOD FARM LOANS

If you have money to loan we will find you good real estate security, or if you want to borrow we can place your application in good hands, and we make no charge for this service.

THE OLDEST BANK IN HOOD RIVER VALLEY

profitable returns; some men have found profit in doing one thing while others have found it in doing another. Yet as a whole, in the long run, the most profitable returns have come from a combination of practices, utilizing to the best advantage the unused space among the trees and the leisure moments of the orchardist. This has kept him busy, which is a good thing to prevent discouragement, and at the same time protected the orchard from neglect.

The best combination has not so much depended upon soil, climate or water, but rather upon the man, and particularly upon brain activity. The marketing of inter-crops in crude form has in most cases proven unsatisfactory. This is typically illustrated in the case of the man who could grow one hundred and fifty tons of carrots in a five-acre orchard but was able to market only one ton at eight dollars per ton in his locality, and later found a splendid market for nice, fat hogs he produced by feeding carrots with an additional small amount of shorts. Combinations of live stock with alfalfa, clover, vetch, wheat hay, root crops and corn have generally given very good results. In most cases the results have come in a twofold nature; first, by improving the soil by the addition of manure and, second, through financial returns. It is unfortunate, however, that many growers have lost sight of the fact that the soil must be constantly improved before they can measure the value of their success.

The practice of inter-cropping, like all good things, borders on the danger line of injury to the permanent orchard unless definite precautions are intelligently and honestly observed. The greatest injury in most cases comes almost exclusively from lack of sufficient moisture for the trees. This is emphatically true with certain forage and grain crops, but rarely true with cultivated crops. Ordinarily the soil moisture and cultivation that will produce a good crop of medium-height field corn will produce good apple trees. In some sections it is necessary to increase the moisture factor late in the summer when the trees become old enough to bear, as the corn tends to leave the soil rather dry for the best development of fruit buds. Another factor in inter-cropping orchards is the certainty of market for the products. Unless an orchardist is favorably located, he should not attempt perishable berries and soft vegetables. In fact no crop should be attempted without first considering the possibilities of the markets for the same. It is generally a very poor policy for an orchardist to attempt to dispose of his product by peddling from door to door, as his time is usually more valuable to him at home in the orchard than on the street.

For convenience of study I desire to classify crops suitable for inter-cropping work into several groups: Crops that may be grown with profit in the young orchard. A. Perennial crops; t, alfalfa in strips for seed or forage.

2, red clover in strips for seed or forage. 3, white clover in strips for seed. 4, asparagus. 5, rhubarb. 6, nursery stock. 7, small fruits, strawberry, loganberry-dewberry, raspberry and blackberry, currants and gooseberries, grapes. B. Annual crops: 1, vegetables, potatoes and tomatoes, cantaloupes and watermelons, cabbage and cauliflower, onions and celery, pumpkins and squash, sugar beets and mangels, carrots and sweet corn, garden peas and beans for seed, lettuce and spinach, vegetable seed crops. 2, field crops, corn and fetereta, wheat hay, oat hay, pea and oat hay, barley, oats and peas for feed for hogs, field peas for seed. Crops that may be grown with profit in the bearing orchard: 1, alfalfa for hay or hog pasture. 2, clover for hay or hog pasture. 3, rape for hog pasture. 4, vetch for hog pasture or seed. The long list of adaptable inter-crops makes it possible for the orchardist to choose very much to his liking and at the same time produce a profitable crop. The greatest care must be exercised in getting one suitable to the climate, markets, needs of the soil and adaptability of the orchardist. It is not a wise policy to grow a great many kinds of inter-crops nor to confine yourself to a single crop.

Inter-Crop Combinations

If the orchardist can care for a few hogs or dairy cows then alfalfa or clover, with roots or mangels and corn, will make an extra fine combination. Where small fruits are used it is far better to have a succession of berries to harvest than a lot of one kind for a short period of time. Loganberries and dewberries, in conjunction with red raspberries and strawberries, make an excellent small-fruit combination. Small fruits and root crops do not work well together where the root crop needs must be hand thinned. Where large orchard areas must be handled and Canadian peas, oats, wheat, alfalfa and corn can be grown they make an excellent farm combination. The land for wheat can be prepared in the fall and the wheat sown. Early in the spring the peas and oats and peas for seed can be sown. The alfalfa must then be disked and the corn land prepared and planted. After the corn is planted, the wheat, pea or oat land and pea land, in addition to the corn land, will require frequent harrowings until time to cultivate corn. After corn cultivation, under normal conditions the harvest of the wheat hay, pea and oat hay and peas for seed will follow in rapid succession, thus making it possible with a minimum number of teams to handle a comparatively large orchard area.

Perennial Inter-Crops

Alfalfa and Clover.—Alfalfa is one of the most practical and profitable orchard inter-crops grown in irrigated sections or where an abundance of moisture is assured. It should be used only in strips in young orchards and never planted closer than four feet from the tree row. This allows room for tree-row cultivation and under favorable conditions will not injure the

"BLUE RIBBON"

(EXTRA FANCY)

"RED RIBBON"

(FANCY)

Famous Brands of Yakima Apples

Packed under our personal supervision
Get in touch with us by wire or letter

Yakima County Horticultural Union

FRED EBERLE, Manager

NORTH YAKIMA, WASHINGTON



FOR BEST RESULTS USE OUR

Filtered Lime-Sulphur Solution

(EVERY DROP USABLE)

AND

Neutral Lead Arsenate

MADE IN OREGON

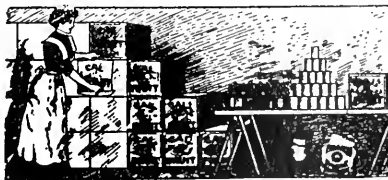
WRITE US FOR PRICES

Oregon Arsenical Spray Co.

J. C. BUTCHER, Proprietor

CLACKAMAS, OREGON

Paste for Labeling—"Palo Alto" Paste Powder



added to cold water, instantly makes a beautiful, smooth, white paste. Ready for immediate use at a cost of 10 cents a gallon. No labor. No muss. No spoiled paste.

PASTE SPECIALISTS

Rosson Chemical Works

349-351 Eighth Street

San Francisco, California

MACABEE GOPHER TRAP



SMALL, SIMPLE, SURE

At all dealers. If your dealer does not handle it, send 20 cents in stamps and mention your dealer's name and get sample by mail, postage paid. Write for prices in larger quantities delivered free by parcel post.

MANUFACTURED BY
Z. A. MACABEE, Los Gatos, Cal.


**SEE CALIFORNIA
AND HER TWO
GREAT EXPOSITIONS
NOW**

California is this year holding two great universal Expositions, one at San Francisco and the other at San Diego, in celebration of the completion of the Panama Canal and the joining of the Atlantic and Pacific Oceans. These two Expositions represent an expenditure exceeding one hundred million dollars. To supply the demand for reliable and authentic information on these Expositions and California, we have published two beautiful books; one on San Francisco, the Exposition and Northern California; the other on Los Angeles, San Diego, the Exposition and Southern California; also a lithographed view of San Francisco in colors (size 30x45 inches), a picture of the rebuilt city, including the Exposition. Each book is 6x9 inches, contains nearly 200 pages and many beautiful illustrations.

These two books and large bird's-eye view give a comprehensive, honest history and description of the state, her principal cities, resources and her two great Expositions. Sent prepaid for 35 cents each or all three for a one dollar bill, money order, draft or check. Order now, addressing

North American Press Association,
Publishers,
1420 Hearst Building, San Francisco.

**BOOK ON
DOG DISEASES
And How to Feed**



Mailed free to any address by the Author

H. CLAY GLOVER, V. S.
118 West 31st Street, New York

America's Pioneer Dog Remedies

Orchard Yarn

Progressive orchardists, those right down to the minute in methods of protecting heavy laden fruit trees, are agreed that tying branches with Orchard Yarn is the modern way of supporting orchard trees. It is not expensive, is easily done, and the time to tie is when trimming. The spurs are not in the way and all parts of the tree can be seen. Saving but a small percentage of trees from being broken down will pay for the expense of tying an entire orchard. One-ply Tarred Manila Yarn will run about 200 feet per pound. Two-ply will run from 90 to 100 feet per pound. Put up in 5-pound balls or on 10-pound spools. In 5-pound balls the yarn pulls from the inside and is more easily handled.

Sold by all merchants handling orchard supplies.

Manufactured by
The Portland Cordage Company
PORTLAND, OREGON

trees. It is possible to annually produce from four to six tons of hay per acre from this crop seeded in this manner and at the same time improve the physical as well as the chemical condition of the soil. Alfalfa is a deep rooter and requires less water than clover, which is comparatively a shallow-rooted plant. In some districts both red and white clover grown for seed purposes have proven to be profitable orchard crops. This is not generally the case, however.

Asparagus and Rhubarb.—In a very favorable districts asparagus and rhubarb have been found to be extremely profitable inter-crops. These crops are not generally profitable in districts where the springs are unusually late, should the orchardist expect good prices in local markets where transportation facilities are poor. They are not heavy feeders, but respond to rich soil and lots of manure and should not be used on poor soils.

Nursery Stock.—The growing of nursery stock as an orchard inter-crop has been a favorite practice among fruit-growers for generations, and while it has not been as profitable during the past five years as formerly there is good money in it for the man who knows how to handle special trees and create a demand for them. It has some serious disadvantages, however, that must be considered. The principal one is the introduction of undesirable pests in the orchard; woolly aphis, San Jose scale, root gall and blight are almost sure to follow in the trail of the nursery, all of which must be constantly guarded against.

Small Fruit.—A general variety of small fruit intelligently planted as an inter-crop has proven to be one of the most successful crops, financially, grown by many of our best orchardists. While small fruit requires lots of labor, it also gives profitable employment during the greater part of the year. It has been an interesting fact that in some of our large fruit districts where tree fruit has been the lowest in price, bush or small fruit has been the highest in price.

Strawberries, dewberries and red raspberries have generally given the best financial returns, while gooseberries, red currants and grapes have as a rule given the most unsatisfactory returns. Loganberries have not been thoroughly tested out in most districts, but where they are being grown are proving to be winners, not only as fresh fruit but also as a substitute for fruit-juice products.

The skillful orchardist will have no difficulty in systematically balancing his small-fruit plantings in such a manner as to make it possible, with a limited number of helpers, to care for and harvest a comparatively large area of small fruit, and after all this is one of the important factors of inter-cropping.

Annual Inter-Crops
Annual inter-crops have as a rule been more generally used than perennial crops, for the reason that they are less apt to injure the trees and the re-



"Friend" Queen
BUILT IN TWO SIZES
The Sprayer You Will Eventually Buy
CALIFORNIA HAS ADOPTED IT THERE'S A REASON!

California Spray Chemical Co.
COAST DISTRIBUTORS
Watsonville, California

MANY OTHER SIZES AND STYLES
Complete "Friend" Line of Sprayer Accessories and Repairs



Red Crown
the Gasoline of Quality

The Gasoline that gets you there and back again every time. Dealers everywhere.

Standard Oil Company
(California)
Portland



turns have come earlier. Vegetables have been one of the favorite crops, and particularly has this been true of potatoes and cantaloupes.

Vegetable inter-cropping has not as rule, when practiced in a large way, been as profitable as when confined to small units. The principal reason for this has been the inability of the orchardist to profitably market his product. Thousands of growers have found no difficulty in producing tons of vegetables, but very few of them are able to market more than a tenth part of what they grow. This problem has become so serious in many places that the vegetable growers find it necessary now to confine their efforts to the production of crops that have a value as stock food when they are unable to market them as fresh vegetables. Splendid examples of these crops are potatoes, pumpkins, squash, carrots, corn and peas.

Potatoes and Tomatoes.—These are excellent inter-crops when intelligently handled, as they insure the orchard of good cultivation and proper care. Growers who wish to grow the potato as a general crop should plan on doing so for a period of years, since the prices for this crop are very variable and it is not considered a safe crop for a single year. In many districts the tomato has proven to be a profitable crop, and particularly so where there is a cannery or extended fresh-fruit market.

Root Crops.—Carrots are unquestionably the most safe and profitable root crop to grow among trees where the orchardist can feed them to stock. Thirty to forty tons per acre are not uncommon yields, and with a feeding value of from six to seven dollars per ton the profitableness of this crop is easily apparent. They are not hard on the soil and orchards inter-cropped with them have done remarkably well. Sugar beets and mangels, while good feed, are not as popular as carrots with most growers. This is partially due to the fact that they require more careful thinning and are sometimes troubled with aphids.

Lettuce.—The lettuce crop is a special crop requiring more patience and skill to successfully produce than the ordinary crop, and yet to a few growers favorably located and gifted with the ability to market a special crop it has proven a wonder. I have known several successful lettuce growers to produce two good crops of fine head lettuce a year on their land and make enough from the sales of one crop to pay for their land twice over. These are exceptional cases, however, and should not be taken as the average.

Corn.—Where corn can be successfully grown it is one of the favorite crops of most men, because it represents to them an easy crop to grow and one that, while not as profitable as some crops, always represents a fair income. Tall-growing field corn should not be planted among young trees, as there is danger of it shading the trees and preventing fruit-bud development. There are several semi-dwarf varieties

D. Crossley & Sons

ESTABLISHED 1878

Apples for New York and Export

CALIFORNIA, OREGON, WASHINGTON, IDAHO AND
FLORIDA FRUITS

Apples handled in all European markets at private sale. Checks mailed from our New York office same day apples are sold on the other side. We are not agents; **WE ARE SELLERS.** We make a specialty of handling **APPLES, PEARS AND PRUNES** on the New York and foreign markets. Correspondence solicited.

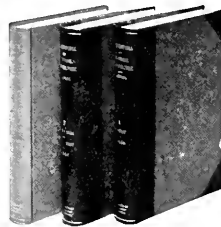
200 to 204 Franklin Street, New York

NEW YORK

LIVERPOOL

LONDON

GLASGOW



ENCYCLOPEDIA OF JUST OFF THE PRESS PRACTICAL HORTICULTURE

The only complete, thorough manual of fruit growing published—covering every feature—planting, pruning, cultivating, spraying, diseases, harvesting, etc., as used and approved by Northwest fruit growers. Contains valuable statistics. All reading matter arranged conveniently for reference and index.

It tells how to do the things that every fruit grower must do who is growing fruit as a business.

THREE LARGE VOLUMES HANDSOMELY BOUND

Write for circulars containing full descriptive matter and prices.

ENCYCLOPEDIA OF PRACTICAL HORTICULTURE, 107 Miller Building
North Yakima, Wash.

HAMILTON MADE SPRAYING HOSE

WILL SPRAY YOUR TREES FOR
SEVERAL YEARS FOR

ONE COST

1/2-inch Perfect Spray Hose, 6 ft., 50-foot pieces coupled, or 1/2-inch STERLING-WORTH Reel Spray Hose in 500-foot lengths.

Either grade will stand 600 lbs. test and will be satisfactory for any power or hand sprayer.

\$15.00 for 100 feet. Cash with order.

Freight paid to your station. Shipped direct from factory the day the order is received.

HAMILTON RUBBER MFG. CO.
TRENTON, N. J.

W. van Diem

Lange Franken Straat 45, 47, 49, 51, 61
ROTTERDAM, HOLLAND

European Receivers of American Fruits

Eldst and First-Class
House in this Branch

Cable Address: W. Vandiem
A B C Code used; 5th Edition

Our Specialties are

Apples, Pears, Navel Oranges

PORTLAND, OREGON

PORTLAND HOTEL

The hotel which made Portland, Oregon, famous
Most Desirably Located. In the Center of Shopping and Theatre District
Covers a City Block

Broadway, Sixth, Morrison and Yamhill Streets

EUROPEAN PLAN—\$1.00 per day and upward

Write for Portland Hotel Booklet

Geo. C. Ober, Manager



Arsenate of Lead

The widely increasing demand for our unsurpassed product shows that quality is now properly appreciated by the expert grower. The high standard of 16% Arsenic Oxide, together with great body or covering power, will be rigidly maintained in all of our shipments.

ARSENATE OF LEAD

Paste and Powdered.

BORDEAUX MIXTURE

Paste and Powdered.

CAL-ARSENATE

(Pure Calcium Arsenate)

Paste and Powdered.

Riches, Piver & Co.

NEW YORK

Apple Growers' Association
Hood River, Oregon

Pfaff, Francies & Page
Wenatchee, Washington

FRUIT GROWERS Dehydrate Your By-Products

It gives you a high grade quick selling product at a minimum cost. It makes a clean and natural tasting product. Dehydrated fruits and vegetables have been approved by the U. S. Government, while desiccated, dried and evaporated products have been rejected. There is but one Dehydrator manufactured in the West and it is the best By-Product machine ever devised. It is adapted to the individual grower, as it can be constructed to meet any and all requirements. It is fully covered by U. S. patents. Therefore, you are protected in its use.

The manufacturers of this dehydrator have recently patented new and improved automatic labor-saving preparatory machinery which will further reduce the present low cost for the production of this product.

For new descriptive booklet address

LUTHER MANUFACTURING CO.
San Francisco, California

Orenco Prune Trees Cheap

Myrtle Creek, Oregon, November 26, 1914.

I feel like saying a few words to you on paper in regard to my Italian Prune trees. I am more than pleased with them. Really they are better than I expected. I cannot speak too much in praise of your company for such good trees. They are of good size, good height and good roots. Everyone that I talked with that ordered from you is well pleased.

(Signed) J. A. Copeland.

"ORENCO TREES" are universally known for their high standard of quality, and particular planters prefer to buy where they can depend upon quality, reliability and satisfaction. When you want really good trees at right prices, you can't do better than with us. Try it.

Oregon Nursery Company

ORENCO, OREGON
SUCCESSFUL salesmen wanted

that will give good returns if properly handled. In addition to being a nice crop to grow, corn is one of the safest crops grown among trees, and while it does take out some plant food it makes its heaviest demand upon plant food at a season of the year when the tree growth is or should be slow, and retarding at this time is more apt to be beneficial than harmful. It also has the advantage of shading the ground during the hottest part of the season and thus to a marked degree prevent the destruction of the humus.

Pea and Oat Hay.—Peas and oats or barley or wheat are favorite orchard inter-crops when carefully handled. The peas are especially valuable to the soil, as they improve it faster than any other crop the orchardist can grow annually and are good among young trees because they grow during the early spring months and can be harvested in time to permit the growing of a cover crop during the latter part of the season. No orchardist should attempt to grow hay, no matter what kind, among young trees without being sure of plenty of water to replace what the crop consumes, nor should this crop be grown closer than four feet from the trees.

In order to balance the effects of the grain crop, the seed for the hay crop of an orchard should contain at least 50 per cent of one of the nitrogen-gathering plants. Peas and vetch have been found very profitable in this respect for this purpose.

Inter-Cropping the Bearing Orchard

The inter-cropping of bearing orchards represent another very important phase of fruit-growing work, and while the number of profitable crops are limited to a few, yet these may be made so profitable and important that the inter-crop and its by-products will carry all operating expenses in the management of an orchard. This cannot be done, however, unless the inter-crop is converted, with the waste fruit, into a substantial by-product. The more common way to do this is by means of hogs. Hogs as a side line in orchard work should never be overlooked by either the small or large grower. One has no fruit he can afford to lose, the other has so much fruit he cannot afford to market it all.

Alfalfa and clover are easiest the best crops to grow among bearing trees where water is abundant and cultivation can be more or less abandoned, while rape and vetch represent the most profitable crops to grow where cultivation is not to be entirely given over to the mulch system of orchard work.

Just how these feeds can best be converted into pork depends very largely upon circumstances. The most economical plan is to pasture them out with small-sized hogs, but where this is not feasible then it becomes necessary to practice the soiling system of feeding and feed from racks. The pasturing plan gives the hogs a chance to consume all wormy and cull fruit in the orchard, the only place it can be

"WE STARTED RIGHT AND WE ARE RIGHT"

6458 Acres

IN OUR ENTERPRISE

4178 Acres

ALL IN APPLES

Nine miles continuous rows of trees, the largest apple orchard ever planted. All are one, two and three years old; the two and three year old all sold, amounting to over 3,000 acres.

We are now offering our one year at terms to suit you.

We give five years', from date of planting, free care. Our company is unlike others in the feature of staying with our purchasers after the free care period. Our plans make our interests mutual; we all work together for the interest of all.

Our Booklet will give you a simple statement of our dealings and methods. Write us for information.

DUFUR ORCHARD COMPANY

Northwestern Bank Building
Portland, Oregon

The First National Bank

Hood River, Oregon

Capital and Surplus
\$135,000

4% Interest Paid on Savings
and Term Deposits

F. S. STANLEY, President
E. O. BLANCHARD, Cashier

disposed of to advantage, and at the same time compel the hog to gather his own feed, another item of importance. Inter-cropping as a whole represents a phase of orchard work avoided by some growers, and to some this is a wise precaution, while to others it means a regular income.

Humor and Common Sense

By A. N. Banks, the sage of Manson,
Chelan County, Washington

IT seems like we are required to follow the admonition of the Hon. Champ. Clarke, "Toot your own horn, lest it be not tooted," frequently of late. Some of the little gulches up river, above us, actually think that they can grow stuff, like apples, taters, punkins, and sich like, and have cast a defic, at us, to meet them at the Fair Hesperides at Wenatchee next fall, and I tell you these things worry us a heap, 'cause it will put us to our nittin', for they will be there "loaded for bear," so you see, we must be up and a-doin'. As you know, the Lake Chelan country made a very good effort at the last Fair Hesperides, in fact we carried off enough Blue Ribbons to make us bow legged to pack 'em home, and now, them Methow fellers have called for help, "and we got to go and do it all over again." We will have to take a little better care of our green stuff this summer and save it all, as we are going to need it.

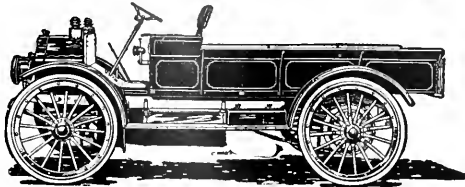
Last spring we lost our best specimen of squash. The vine was growing out behind the barn and the squash had got to be some size when the boy, who does the milkin', went out one morning to drive in the cow, and as he supposed he saw her lying down in the squash patch, so he throwed a small rock at her to make her git up and broke the stem off the squash; on further looking he found the cow in the barn. But we will be a little more careful this season.

Now we may be somewhat like the Irishman who made a list of all the men in his ward he could whip. Murphy called on him one day and says he, "I understand you have me noime on yer list?" "I have," says Pat, "what of it?" "Will you can't do it," says Murphy. "Well thin," says Pat, "I'll take it off."

Now if we done said anything that don't quite suit, why just let the folks come around after the mettin' and apologise, and we will forgive 'em.

Say, Mr. Better Fruit, after the State Meclin' of the Horticultural Society, I seen what a snap them sellin' fellers had, so I just dropped a line to a few of my friends, back east, to come on out here quick, as the pickin' was offal good. The people out here will raise a good crop of fine apples, pick 'em, wrap 'em, and box 'em, and haul 'em down to you at the dapot, and turn 'em over to you; all they ask you to do is to sell 'em for all you can get, and give 'em what you don't want to keep (she sure is easy). Some folks have made \$500,000 in eight (8) years at the business; it sure pays.

International Motor Truck Adds to Your Profits



IN the way you are now handling your fruit crop, you may have reached the limit as far as profits are concerned. No doubt you have no objection to making more money out of it, but you do not see how.

Then here is a way. Do as hundreds of fruit growers and thousands of men in all lines of business have done, and—get an **International** motor truck to help you.

An **International** motor truck will boost your fruit profits by handling your fruit rapidly at the right moment, carrying it to the best market most economically. It will do all your light hauling and delivering, save your time on the road and keep down your hauling expense.

You can buy either the famous Model "M" **International** for 1,000-pound loads, or the new Model "E" for loads of 1,500 pounds. Both are made with plenty of clearance for any country roads, with solid tires, simple mechanism, built for long, hard service. Any style body can be provided.

We will tell you where you may see an **International** truck and send you a complete catalogue. Drop us a line.



International Harvester Company of America

(INCORPORATED)

Crawford, Neb. Denver, Col. Helena, Mont. Portland, Ore.
San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah

Arcadia Irrigated Orchards

THE LARGEST AND MOST SUCCESSFUL ORCHARD PROJECT
IN THE ENTIRE WEST

7,000 acres planted to winter apples. Gravity irrigation. Located 22 miles north of Spokane, Washington, directly on the railroad. We plant and give four years' care to every orchard tract sold. \$125, first payment, secures 5 acres; \$250, first payment, secures 10 acres; balance monthly.

SEND FOR BOOKLET

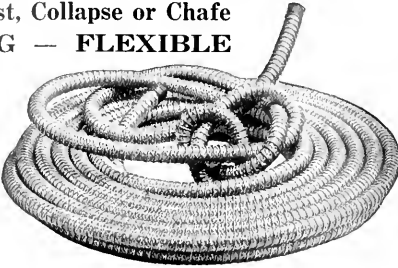
Arcadia Orchards Company

Deer Park, Washington

Mulconroy Flexible Metallic Spray Hose

Can't Kink, Twist, Burst, Collapse or Chafe
LIGHT — STRONG — FLEXIBLE

Answers all requirements for all kinds of spraying, 1000 lbs. pressure will not burst it. Easily coiled in a three inch circle. Tube specially compounded to stand spraying solutions. Hose cannot kink, and therefore delivers full capacity at all times. Outside protected against knocks, dragging over rough surfaces, and sharp turns.



Trial order will show satisfaction and economy.

Manufactured solely by

MULCONROY COMPANY, Inc.
 PHILADELPHIA NEW YORK

Established 1887

Get in Business for Yourself

THIS IS YOUR CHANCE—WILL YOU SEE IT?

The King of the Woods Drag Saw

with or without BUZZ-SAW ATTACHMENT with or without STEEL STUMP-PULLING ATTACHMENT will cut a 5 foot log in 5 minutes, and small logs as fast with buzz-saw. It will pay your neighbors to have you cut their wood. Will pull itself over the steepest hills and roughest ground. IT ANSWERS THE QUESTION—HOW CAN I MAKE MORE MONEY ON THE FARM? You want to know more about it. Send for Catalog KW 4 WRITE TODAY.

REIERSON MACHINERY CO.

Sole Manufacturers

Portland, Oregon



May 15 they Commence The Eastbound Summer Tourist Excursion Fares

and daily thereafter all summer

Low Rates. Stopovers. Long Limit.

(Account General Assembly Presbyterian Church, tickets to Rochester, N. Y., also on sale for May 13)

Arrange your trip now over

Northern Pacific Railway

Two Through Trains Daily
 To Minneapolis, St. Paul, Chicago.
 One to St. Louis.

Low Fares to California Expositions

In connection with

**Great Northern Pacific S. S. Co.
 De Luxe Steamships**

For rates, routes, berth reservations, etc, address
 A. D. CHARLTON, A.G.P.A., Portland, Ore.



Say, we think it is pretty near time for us apple fellers to do like (business) is going to do, that is investigate the government to find out where the money goes. O it is up to the growers to investigate, what they are doing about the selling part of their business, and it sure needs it. Now we are of a rather "optimistical" nature at best, so after the State Meetin' with the great flow of "wit and other things," we come home feeling purty good. That night we dreamed of all the things we had heard talked about.

The first thing we saw was the returns coming in for our apples. Round silver dollars, with feet and wings, all in Indian file, one after the other, thousands of them, coming right up the middle of the road; the trains on our Electric Railroad, that we are going to build, had sidetracked to let 'em go by. At the crossing of the railroad with our main street, that we have "maped" out, was a great herd of Holstein cows, that we are "going" to "buy" to get cream to run the "Creamery," from the front door of which building is where I first saw the dollars coming home, so I just rushed out and threw open the doors of the "vault" in the "Bank building," that we are going to build this "summer," and the dollars commenced walking in and stacking themselves up until they filled it full and running over, so we had to commence loaning them out at 12% interest, or goodness knows what we would have done with 'em. Now sir, we was in purty good shape financially, if I hadn't woke up.

Now the "tales" that have been told to them eastern fellers about the profits in apple growin' in this country is all right, at \$2.00 a box, but right now, that talk reminds me a feller I had out here in the greasewood, on a hill overlooking the townsite. I described to him how it would look when the greasewood was removed, and all the land planted in apple trees, and the beautiful town that would nestle at our feet, and how busy we would be loadin' apples on the cars of the electric railroad we was going to build, in fact we done our best to make him see the mind "picture" we was a "paintin'" for him, but we done it like we do most things, over done it, as all at once he grabbed his hat off and tore down the hill as fast as he could run. When I hollered and asked him where he was goin', "Why," he says, "I'm running to catch that train you was tellin' me about."

In the present fix that the apple fellers is in, if you get one of them eastern fellers out here, that has got any money about his clothes, my advice is to hog tie him and take it away from him, and then give him a deed to an orchard, 'cause if they don't straighten up things, that's about the only way you will ever get it.

I could give you my plan of growin' an orchard that might interest some folks. This is the way I do it. First place, take off all the brush and trash; don't take off the rocks, as they fertilize

SASH & DOORS
WINDOW TRIM

Buy from Factory and Save Money

We operate our own factory and sell direct to the consumer, saving you the retailer's profit. We make prompt shipment anywhere. Quality guaranteed.

Window trim, likedraw. ing 80c
Inside door trim..... 60c

Cottage front windows \$2.50
5-cross-panel doors, 15 sizes 1.10
Cottage front doors..... 2.45
3-ply fir veneer doors..... 1.50
Craftsman doors..... 1.50
Window screens..... 80c up
Door screens..... \$1.25 up
Window frames..... 1.00
12-light windows..... 95c up
Bungalow sash..... 56c up

We save you money on Builders' Supplies.

Write for Catalog B1.

O.B. WILLIAMS CO.
1943 FIRST AVE. SOUTH SEATTLE.

the ground (when they rot) unless it is all rocks, and then you had better take up some other place, then burn the brush and trash, plow the land, that is, git one your neighbors to plow it and promise to pick apples for him when his trees come into bearing, in pay for the plowing. Now git some of them nursery fellers to furnish trees to plant it, telling him you want to act as his agent and sell trees for him, and this orchard is to be the show place so people can see how his trees grow; you can do this if you talk right to him. Of course he has got lots of these show orchards, but "one more" won't hurt him. Now if you live in a good neighborhood, and you should be feeling rather poorly, your neighbors will irrigate your trees and maybe cultivate them for you. This, of course, depends on how much you complain, and the pains you have at that time. Now you can repeat this for three (3) or four (4) years, varying a little each time from the original, until your trees come into bearing, when you have a good crop in sight, you can get boxes from the mill, and paper from the distributing company, who is going to sell them; you can also get them picked, and packed, agreeing to pay for the work when the "distributors" sell your "crop" (ain't it easy?).

Now after living here, near this beautiful lake, where the soil is rich, and you can grow almost anything you want to, and where the apples get so red, we sure ought to be satisfied. But as spring approaches, we still have that yearning for sulphur and molasses to keep the biles from coming out. By Gum!!! I would trade a thousand acres of wild turkeys in Arkansas for my filling of sassafras tea once more.

Well this leaves us all well and hoping for the best. If you ever come out our way, drop in and see us; our late spring hangs out.

The foregoing will show to our readers, in a small way, what created so many hearty laughs at the recent State Horticultural meeting at Wenatchee, Washington.—[Editor.]

The Brood Sow

Pork producers are in a liquidating humor and are ready to respond to advances in price. The hog market still continues at a low ebb and the situation is aggravated by the top-heavy grain market. Professor Wm. Hislop, Animal Husbandman of the State Experiment Station, states that there is no need to be panicky and to sell when the market is in a semi-demoralized condition. To the world cataclysm now occurring in Europe may be attributed the sharp decline in hog stocks since October, 1914. Feast always follows famine, so it behooves those forward-looking hog growers, who have retained their breeding stock, to give them the best possible care, in order that future production may not be so restricted as it would seem at this time. The essentials of brood sow management may be brief-

Better Disking Bigger Dividends



Cutaway
(C. 2. 2. 2.)

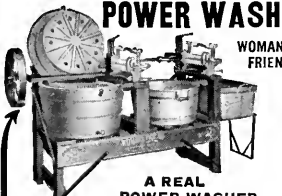
This year, do the best disk-ing you have ever done—it will make you money.

disk harrows make it your dealer to show you so easy to do good disk-ing that there is really disk harrows and no excuse for doing plows. If he does not any other kind—and sell them, write to us, there's a style and size We ship direct where for every farmer. Ask we have no agent.

Send for new catalog today

THE CUTAWAY HARROW COMPANY
Maker of the original CLARK disk harrows and plows
940 Main Street Higanum, Conn.

POWER WASHER
WOMAN'S FRIEND



A REAL POWER WASHER

Round rubber rubs the clothes, turns them over and over and forces the hot, soapy water through them. Washes tub full perfectly clean in 5 minutes. No wringers to wring. Nothing to get out of order. Special low price to introduce. Catalogue Free.

BLUFFTON MFG CO. BOX 8F. BLUFFTON, OHIO.

True-to-Name Nursery
GALLIGAN BROS.
Proprietors
HOOD RIVER, OREGON DEER, OREGON

Growers of high grade nursery stock, guaranteed true-to-name. Breeders and importers of purebred Big Type Poland China Hogs. Service bears, brood gilts and weaning pigs for sale.

For catalog of nursery stock and prices on swine, write

True-to-Name Nursery
HOOD RIVER, OREGON

Harvey Bolster Springs
make any wagon a spring wagon. Prevent damage to eggs, fruit, etc., en route to market. Saves cost—produce brings more—wagon lasts longer.

MADE LIKE FINEST AUTO SPRINGS

Very resilient and durable. The standard springs of America since 1899. 40 sizes—fit any wagon—sustain load up to 5 tons. If not at dealer's, write us. Catalog and list of proof free.

HARVEY SPRING CO., 784-17th St., RACINE, WIS.



GUARANTEED

WANTED A MAN



To retail Rawleigh Products, town and country. Some good old vacant territories. Largest and best line. One of the oldest and largest companies in the world. Six Factories and Branches. All Products supplied from new Pacific Coast Branch. Quick Service. Low Freight. We want only industrious men capable of earning \$100 and up per month and expenses. Must have means for starting expenses and furnish Contract signed by 2 responsible men. Address W. T. Rawleigh Company, Oakland, Cal., giving age, occupation and references.

HAWKEYE SHIPPING BASKET
FOR CIRCULAR & PRICES WRITE TO
BURLINGTON BASKET CO.
BURLINGTON, IOWA



Ask for Catalogue No. 5

AXLE & GREASE

LARGE HANDY CUP BUCKET
SMALL CAN

WHITTIER COBURN CO. S.F. SOLE MFRS.

YOU WANT THE BEST SPRAYER



You want to save time, temper, trouble and trees. You want to raise fruit that brings the highest prices. You want to know all about our sprayer before you buy. There is more you ought to know. Do You Want To Know The Price?

Write for a free place Catalogue #6
REITERSON MANUFACTURING CO.
Manufacturers 182 Morrison St., Portland, Ore.

TIE UP
TRAUNG LABELS
ATTRACT ATTENTION

We are especially qualified to design and execute attention compelling LABELS that are necessary to give the proper selling power to your goods.

HIGHEST QUALITY - PROMPT SERVICE - LOWEST PRICES
SAMPLES AND PRICES UPON APPLICATION

"SATISFY THE CUSTOMER" *In Our Program*

TRAUNG LABEL & LITHOGRAPH CO.
SAN FRANCISCO, CAL. (GATTERY & GREEN STS.)
PORTLAND, ORE. (PARK AND STARK STS.)

YOUR LABEL CONTRACTS WITH US WE KNOW HOW

Send for our 1915 Art Calendar. Free on Application

ly summarized: (1) Provide suitable food, but do not over-feed; (2) emphasize the protein and ash constituents of the ration; (3) keep the sow growing thrifty, but do not fatten; (4) devise schemes to induce exercise; (5) provide warm, dry, well bedded, well ventilated and sun-lit quarters; (6) avoid constipation by natural feeding methods, but resort to emergency remedies if necessary; (7) kill off lice with crude oil, and drive out worms with santolin and calomel; (8) practice gentleness at all times. Hog men cannot afford to neglect any of these cardinal points when the cost of production is so high. Within the next seven to nine weeks most of the brood sows and gilts will farrow. Our investigations tell us that 90 per cent of the dry matter in the unborn young of the sow and gilt is deposited in utero during the last sixty days of pregnancy. This being so it is wise to provide for the needs of the gilts and sows within this time by increasing their daily wintering rations from 50 to 75 per cent.

High Quality
in

F. W. BALTES & COMPANY
PORTLAND, OREGON

Printing

WRITE FOR PRICES AND SPECIFICATIONS on Catalogs, Booklets, Labels for Fruit Boxes, Circulars, Stationery, etc. We can supply your wants quickly, accurately and economically. Best Equipment in the Northwest. We print Better Fruit.

at Low Prices

ZEROLENE
the Standard Oil for Motor Cars

ZEROLENE TRADE MARK
REG. U.S. PAT. OFF.

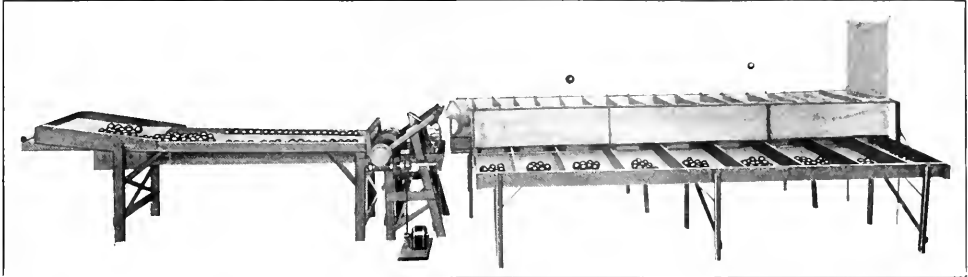
Rations for Sows With Sucking Pigs.—(1) Barley, 30 lbs.; oats, 30 lbs.; middlings, 20 lbs.; bran, 12 lbs.; tankage, 8 lbs. (2) Barley, 50 lbs.; shorts, 20 lbs.; bran, 15 lbs.; oil meal, 10 lbs.; tankage, 5 lbs. (3) Ground oats, 50 lbs.; middlings, 50 lbs.; skim milk. Provide early pasture for the sows and their young. Winter rye and rape are as good as alfalfa, and are ready when most required.

Mr. W. H. Paulhamus, manager, and chairman of the executive committee of the fruit growers' organization of Oregon, Washington, Idaho and Montana for controlling the marketing concerns, is manager of the Puyallup Fruit Growers' Association. His value to the Puyallup association is considered so great that they have insured his life for \$100,000, payable to the association, on which the association pays a premium of \$1,199.75 annually. Twenty-five thousand dollars of this policy is on his life and \$75,000 is accident insurance.

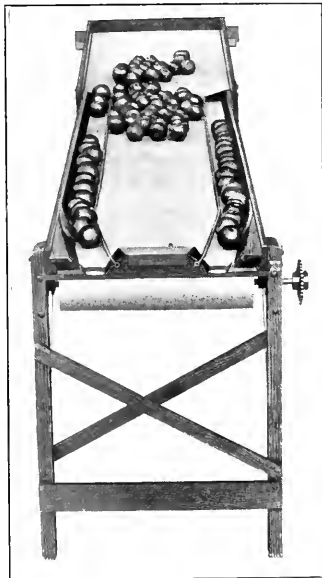
THE TWO-CUP PRICE FRUIT SIZER

Reduces your packing and grading \$45.00 to \$65.00 on every \$100.00

This machine handles two grades; we have one-grade and three-grade sizers also, capacities ranging from 350 boxes per day for the one-grade to 1,800 boxes for the three-grade. Handles any shape of apple, peach or pear, for it does it by weighing, like a pair of scales.



OUR MOTTO—To simplify and reduce the cost of packing fruit, so that even a child could do it and obtain the perfect pack.



Two-Grade Sorting Table

Our grading table that revolutionizes the grading question. Notice the moving endless belt that carries the fruit past the sorters. The grades are rolled over the rods—Extra Fancy on the right, Fancy on the left. There is a clutch attachment that stops and starts the belt by simply leaning the body against a lever. This arrangement permits more time for grading in the case of a bad lot of fruit. Grading has been done on this table for $\frac{1}{2}$ cent per box. We say you can do it for 2 cents, at the most. USERS HAVE GRADED AND PACKED FOR $\frac{1}{2}$ CENTS PER BOX on our three-grade sizer. A child can pack after this machine.

Non-Bruising Qualities

During a two weeks' demonstration, we put two dozen eggs through the sizer from 800 to 1,000 times, never cracking a shell.

DEEDS speak louder than words. Read what users say, then write us for more information and what other users think.

We have five 2-cup machines and operated them on peaches all last summer, running 77,200 boxes through to our entire satisfaction, saving by their use one cent per box of \$772.00. Our sorters graded 500 boxes per day per man; under the old method 150 to 250 boxes was considered good. This is the old and the new way of handling apples:

OLD WAY	
Sorting 1,300 boxes apples at 3 cents	\$39.00
Packing 1,300 boxes apples at 5 cents	\$65.00
	\$94.00
NEW WAY	
SIX sorters and feeders at \$2.75	\$16.50
Packing 1,300 boxes at 3½ cents	\$45.50
	\$62.00

a saving of \$35.00 per day; in a 40 days' run this would be \$1,400.00, plus the saving on peaches of \$772.00, makes a total of nearly \$2,200.00. The most delicate apple can be run through. It will increase the market value of fruit and effect great saving.

TIGMOPSON FRUIT COMPANY
By F. E. Thompson,
North Yakima, Washington.

By the use of the Price Fruit Sizer and Grader we were enabled to grade and pack our last season's tonnage of 70,000 boxes at a combined expense of 6½ cents per box; a saving of 2½ cents per box over the old methods. We consider it the best thing of its kind

on the market, the fruit being accurately sized and delivered to the packers' bins without bruise or injury.

You may feel free to refer any prospective customer to us.

YAKIMA FRUIT GROWERS' EXCHANGE,
C. A. Alexander, Manager,
North Yakima, Washington.

After having used the Price Fruit Sizer on apples, pears and peaches for two years, I am more fully persuaded of the merit, and especially the matter of economy, in the use of your machine.

Anyone having 2,000 boxes of fruit cannot afford to pack by the old methods. I estimated by an account of cost, a saving of 47% in favor of the machine. All my labels and brands state that they were sized by your machine and my product has an increased value thereby. We recommend it.

J. E. SHANNON & SONS,
North Yakima, Washington.

The Price Fruit Sizer installed in my packing house has proven satisfactory to a degree that it has met every claim you made for it when sold to me. It handles all varieties and with no damage to the fruit, certainly less than when I was grading by hand. I am grading and sizing for 1½ cents and packing for 4 cents. The machine is so satisfactory that I would not care to operate without it.

DR. J. S. KLABER,
Selah, Washington.

We could go on giving you hundreds of such testimonials. Write for further particulars.

This machine will be demonstrated every day except Sundays during the year at the Panama-Pacific International Exposition in the Palace of Horticulture, by our California State Agent.

Price Fruit Sizer Co.

DESIGNERS AND MANUFACTURERS OF

Throwing Machines for Sizing and Sorting Apples, Peaches and Pears, Potatoes and Other Vegetables

Works and General Sales Office, NORTH YAKIMA, WASHINGTON, P. O. Box 934

W. G. PRICE, President
W. K. PRICE, Manager of Works
J. W. LAVIGNE, Sales Manager

Hundreds of these Machines Now in Use

The World — Our Orchard

STEINHARDT & KELLY

101 PARK PLACE
NEW YORK

Unquestionably the most
important factors in
the fruit industry
of the
United States

Our Market — The World

BETTER FRUIT

2 1/2

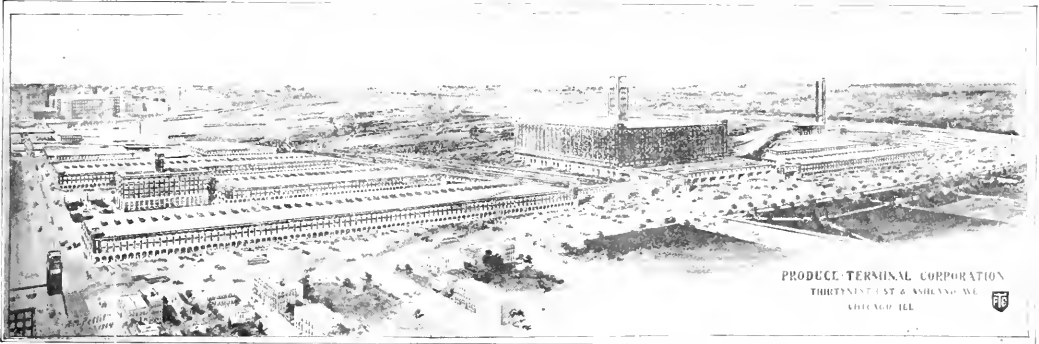
VOLUME IX

JUNE, 1915

NUMBER 12

A Few of the Special Features of this Issue

The Fruit and Produce Trade of Chicago
How the Government Makes Crop Estimates
Fruit Grading Rules for the Northwest
Blight Resistance in Pears
Information About Evaporators



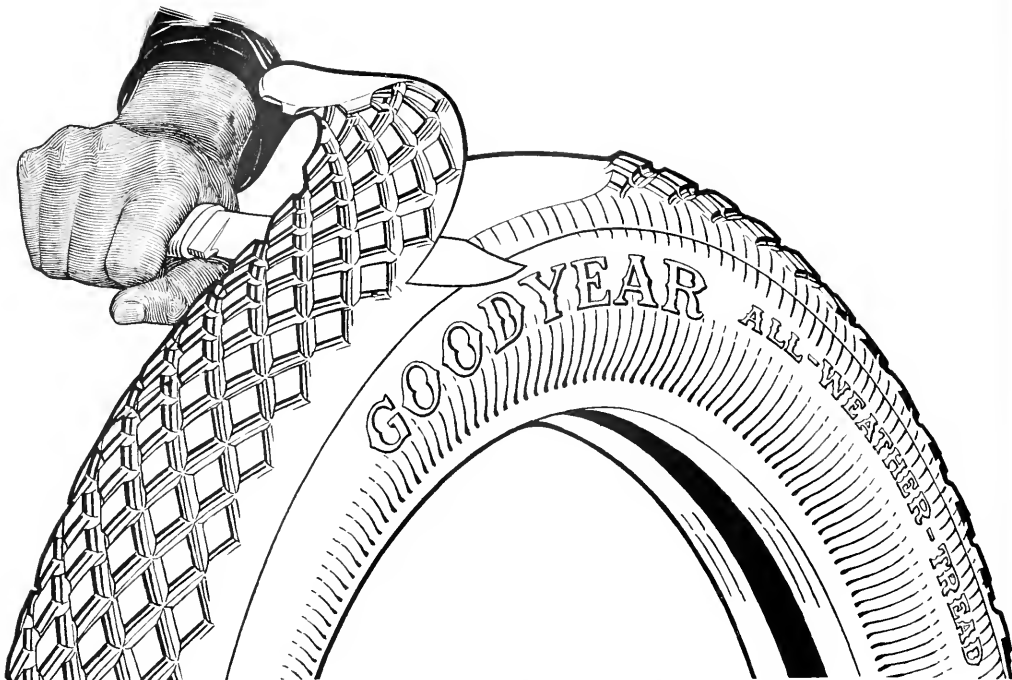
South Water Street has been long recognized as one of the most famous fruit and produce centers in the world. The fruit and produce dealers were packed on this street like sardines in a box. The street was so crowded that when the wagons backed up there was a solid string of wagons on each side of the street with not over six inches between the hubs. The above illustration is a picture of the new terminal, which will provide ample facilities for the fruit and produce trade of Chicago, which is exceeded by only one city in the United States, that being New York.



BETTER FRUIT PUBLISHING COMPANY, PUBLISHERS, HOOD RIVER, OREGON

Subscription \$1.00 per Year in the United States; Canada and Foreign, Including Postage, \$1.50.

Single Copy 10 Cents



Suppose We Pared This Tire

Suppose this All-Weather tread—which is now double-thick—were pared to the thinness of the usual anti-skid. Do you think that the grips would endure and the tread endure as now? Or would it resist puncture like this matchless tread?

Suppose we used—as some do—one less ply of fabric. Suppose the whole tire were made lighter. Could the tire stand use or misuse as Goodyear tires do now?

Suppose we omitted our other exclusive features:

- Our **No-Rim-Cut** feature—
- Our **"On-Air"** cure to save blowouts—
- Our **rubber rivets** to combat loose treads—
- Our **126-piano-wire** base for serenity.

All others do omit them. All of them are costly. One of them—our "On-Air" cure—costs us \$450,000 yearly.

But could Goodyear Fortified Tires retain top place if we did not give those extras?

We're Adding Betterments

Instead of that, we are all the time adding betterments. We spend on one department \$100,000 yearly to seek out new improvements.

Our All-Weather tread—always double-thick—has been made still thicker on some sizes.

We have added an average of 14 per cent to the thickness of our Inner Tubes.

And we are making our own fabric to secure an extra strength.

Price Reductions

Yet we have made big price reductions three times in two years. Our last—on February 1st—brought the total to 45 per cent. That is largely due to multiplied output.

Today you are getting in Goodyear Fortified Tires the best value ever known in tire making.

It is due to yourself that you get these tires. They are saving millions of dollars and millions of troubles to motor car owners each year. And men know this. Last year they bought about one Goodyear tire for every car in use.

Join these contented tire users. Any dealer will supply you.

GOOD YEAR
AKRON, OHIO

Fortified Tires

Fortified Against	{	<ul style="list-style-type: none"> Rim-Cuts—by our No-Rim-Cut feature. Blowouts—by our "On-Air" cure. Loose Treads—by many rubber rivets. Insecurity—by 126 braided piano wires. Punctures and skidding—by our double thick All-Weather tread.
--------------------------	---	---

THE GOODYEAR TIRE & RUBBER COMPANY, AKRON, OHIO

Makers of Goodyear "Tire Saver" Accessories; also Goodyear "Wing" Carriage Tires and other Types

(2408)

The Paris Fair

Hood River's Largest and Best Store

RETAILERS OF

EVERYTHING TO WEAR

AGENTS FOR

HAMILTON & BROWN AND
THE BROWN SHOES

HART, SCHAFFNER & MARX
CLOTHES

MANHATTAN SHIRTS

JOHN B. STETSON HATS

NEMO CORSETS

Strictly Cash—One Price to All

Things We Are Agents For

Knox Hats

Alfred Benjamin & Co.'s Clothing

Dr. Jaeger Underwear

Dr. Deimel Linen Mesh Underwear

Dent's and Fownes' Gloves

Buffum & Pendleton

311 Morrison Street

PORTLAND, OREGON

Store Your Apples in Spokane

The Natural Storage Center

Take advantage of storage in transit rate and the better market later. Write us for our dry and cold storage rate and information.

Ryan & Newton Company

SPOKANE, WASHINGTON

IF YOU WANT TO MARKET
YOUR

FRUIT

RIGHT

ALWAYS SHIP TO

W. B. Glafke Co.

WHOLESALE FRUITS
AND PRODUCE

108-110 Front Street
PORTLAND, OREGON

W. H. DRYER

W. W. BOLLAM

DRYER, BOLLAM & CO.

GENERAL
COMMISSION MERCHANTS

128 FRONT STREET

PHONES: MAIN 2348
A 2348

PORTLAND, OREGON

LEVY & SPIEGL

WHOLESALE

FRUITS AND PRODUCE

Commission Merchants

SOLICIT YOUR CONSIGNMENTS

Top Prices and Prompt Returns

PORTLAND, OREGON

STORAGE

Ship your Furniture
to us to be stored
until you are located

TRANSFER & LIVERY CO.
Hood River, Oregon

The Old Reliable

BELL & CO.

Incorporated

WHOLESALE

Fruits and Produce

112-114 Front Street
PORTLAND, OREGON

Richey & Gilbert Co.

H. M. GILBERT, *President and Manager*

Growers and Shippers of

YAKIMA VALLEY FRUITS
AND PRODUCE

Specialties: Apples, Peaches,
Pears and Cantaloupes

TOPPENISH, WASHINGTON

Established 1893

W.P. KRANER & CO.

Importers and Tailors

2nd Floor Couch Bldg.

109 Fourth Street

Portland, Ore.

Geo. E. Kramer C. W. Stose

Mark Levy & Co.

COMMISSION
MERCHANTS

Wholesale Fruits

121-123 FRONT AND
200 WASHINGTON ST.

PORTLAND, OREGON

Orchardist Supply House

Franz Hardware Co.

HOOD RIVER, OREGON

W. F. LARAWAY

DOCTOR OF OPHTHALMOLOGY

EYES TESTED  LENSES GROUND

Over 30 Years' Experience

Telescopes, Field Glass
Magnifiers to examine scale

Hood River Oregon and Glenwood Iowa



Arsenate of Lead

The widely increasing demand for our unsurpassed product shows that quality is now properly appreciated by the expert grower. The high standard of 16% Arsenic Oxide, together with great body or covering power, will be rigidly maintained in all of our shipments.

ARSENATE OF LEAD

Paste and Powdered.

BORDEAUX MIXTURE

Paste and Powdered.

CAL-ARSENATE

(Pure Calcium Arsenate)

Paste and Powdered.

Riches, Piver & Co.

NEW YORK

Apple Growers' Association
Hood River, Oregon

Pfaff, Francies & Page
Wenatchee, Washington



The New Era Auto-Irrigator—Works While You Sleep

The thing you have been looking for—something which will distribute your water into furrows with a uniform rate of flow and not require your continued attention. It has been thoroughly tested for two years and its users speak in enthusiastic praise of its work. The more rough and more difficult your land is to irrigate the more the advantages of this irrigating device appear. It consists of a canvas hose with apertures along one side, spaced about 20 inches apart, from which the water escapes into the furrows. These apertures are fitted with a regulating device to regulate or stop the flow of water. The hose is tapering in form to conform to the gradually diminishing volume of water. The standard size is 75 feet long and 6 inches in diameter at large end, and tapers to 1½ inches diameter at small end, which is open. It has a capacity of about one-half cubic foot of water per second when the water in the ditch is raised about 8 inches above the level of the land. This will require that your ditch banks be thrown up a little higher than they generally are at present. The hose is easily and quickly set in operation by connecting it with a pipe set into the ditch bank. The end of pipe in the ditch has a cylindrical screen fitted over it to prevent the entrance of leaves, etc. The hose is light and when one strip of land is irrigated it is easily carried to the next strip. Where more than one hose is needed they can be used in a series, according to the number needed. This device will pay for itself in two months' use or less, besides saving from 20% to 50% in your water and producing better crops by the uniform application of water, and also preventing your land from washing. For fuller details send for descriptive circular. Will make a special discount on the first five irrigators bought and used in any community. We desire implement dealers to sell this great labor and water-saving device in every town, or agents to demonstrate and sell it. Good money for live men. Can be mailed anywhere in the United States by parcel post.

For particulars and prices address

AUTO-IRRIGATOR MFG. CO., Box 609, Denver, Colorado

How to Use the KIMBALL CULTIVATOR

to keep your Orchard
in Perfect Condition



It is now for fruit growers to be thinking of how they can keep their orchards in good shape at the least possible expense.

For this work there is nothing that will equal the Kimball Cultivator.

While we know the fruit market is bad, we also know it will not always be in this condition, and the grower who neglects to cultivate his orchard at this time will lose the years of labor he has already put in on it, for an orchard that is not cultivated is soon a total loss.

Therefore get a Kimball and continue the good work.

MANUFACTURED BY

W. A. JOHNSTON, The Dalles, Oregon

THE first thing in the spring, as soon as the ground is dry enough, it should be well plowed or disced both ways, or diagonally if the trees are planted in that manner.

The rest of the season nothing is needed but the KIMBALL, which should be run over the ground at least twice each month during the summer, or as soon as the ground is dry enough after a hard rain or after irrigation.

This will break up the crust and stop evaporation, for when the soil bakes and opens in cracks is the time of the greatest evaporation.

More cultivation and less irrigation will produce better fruit, and it will keep longer than where too much water is used.

BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

Blight Resistance in Pears and Pear Stocks

By F. C. Reimer, Southern Oregon Experiment Station, Talent, Oregon.

FOR more than two centuries the pear has been a very popular fruit in this country. At one time it even exceeded the apple in popularity. During the past half century the fruit has usually sold for very profitable prices. In the Northeastern States there is a vast territory well suited to pear culture. In the three Pacific Coast States climatic and soil conditions are almost ideal for the growing of pears. Yet according to the 1910 census the total number of pear trees and the total output of pears amounted to less than one-tenth the number of apple trees and the output of apples.

The question naturally arises, Why is the output of this fruit not greater? It is hardly necessary to answer this question. Every pear grower is well aware of the fact that the pear is very susceptible to pear blight—the most destructive disease known to our deciduous fruits. For considerably more than a century this disease has been a "nightmare" to the pear growers in all of the older fruit regions of this country. In the older pear districts the fight against this disease has been given up by many of the pear growers, and the disease has been the victor. This is due to the fact that this disease usually works rapidly, often persists from year to year, and by its insidious nature baffles the average fruitgrower. The pear industry in the Eastern States has been held in check by this disease. The disease is native to that region and as long as a century ago it began to destroy the pear orchards there. The pear industry had just become well established in the Southern States when this disease made its appearance and practically wiped out the industry. About 1900 pear blight made its appearance in the San Joaquin Valley of California, and its history on the Pacific Coast dates from that time. The only place where this disease has been fought persistently on a large scale is among the pear growers of the Pacific Coast. But even here the fight has been expensive and in some instances not a successful one. Many growers have not appreciated the fact that this disease must be fought promptly, persistently and thoroughly. For example, in the San Joaquin Valley the disease practically wiped out a magnificent pear industry in two years.

The question naturally arises, Shall we keep up the present fight against blight? The reply is yes. The small total output of pears will certainly insure excellent prices. It is also certain that the Pacific Coast, because of its

suitable climate, will be the home of the pear industry in this country. If it will pay to keep up the present costly fight against pear blight anywhere it will certainly do so here. It is well known that the only successful method ever devised for combating blight is that of cutting out all the affected parts and disinfecting the wounds, but this should not deter us from improving the method nor from trying to find a better one. The science of plant pathology is a comparatively new one, and we are still in our infancy so far as methods of fighting plant diseases are

will be found which will be comparatively free from blight and still be desirable commercial varieties? To show that this is possible, it is only necessary to state that we already have varieties which are known to approximate this ideal. The Lucy Duke, a seedling of the Bartlett, which has been in cultivation for more than thirty-five years, has shown marked resistance to pear blight. This is a pear of excellent quality and promises to be of commercial value. Another promising variety is the Douglass, which originated as a seedling of the Kieffer, probably crossed with the Angoulene. This variety has been growing in Central Kansas, in a region where blight is very severe, for fourteen years, but has never shown a trace of blight. It is not among the best in quality, but it is markedly better than the Kieffer, and apparently far more resistant to blight.

We have several varieties of poor quality but remarkably resistant to blight. A variety locally known as the Florida Sand Pear, and which belongs to the Chinese Sand Pear group, has been grown in the Southeastern States for more than thirty years, under the severest possible conditions; with badly blighted trees of other varieties in adjoining rows, this variety has never shown a trace of blight. The Burkett is a variety which has been grown in the Upper Mississippi Valley for the past fifty years, and there under conditions where very few of our varieties can be grown because of the severity of blight, this variety has proved practically free from this disease. The Surprise is another variety from the Middle West, where under the severest conditions it has never shown a trace of blight. Other varieties showing resistance are Krull, Fluke and Orel No. 15. Other examples might be given, but these will suffice to illustrate the principle that it is possible to grow pears which will be measurably resistant to blight. Recently a seedling pear in Washington has come to the attention of the writer, which is a late pear similar to the Anjou in appearance and fully equal, if not superior to it in quality; a late bloomer and productive. Up to the present time this seedling has proved entirely free from blight, but it is possible that it has never been exposed to the disease. If this variety should prove reasonably resistant to blight, it would mean a great advance in the pear industry. We are now testing at our Experiment Station hundreds of varieties of pears from this country and Europe, and it is hoped that we

Features of this Issue

BLIGHT RESISTANCE IN PEARS AND PEAR STOCKS

THE END OF SOUTH WATER STREET

CONTROL OF THE TENT CATERPILLAR

DESCRIPTION OF AN EVAPORATOR

EXPLANATION OF GOVERNMENT CROP REPORTS

NORTHWEST GRADING RULES SEASON 1915

concerned. Hence the work of improving our present method, or finding a new and better one, should be pushed vigorously by our plant pathologists.

Every pear grower will readily admit that the ideal method of combating pear blight would be to grow varieties which would naturally be resistant to the disease. The writer wishes to state emphatically that the ultimate solution of the pear blight problem will be in growing such resistant varieties. Can such varieties be found or produced? It is a fact, well known to fruitgrowers, that some varieties of pears suffer much less than others from blight. Comice and Anjou are much more resistant than Bartlett and Howell. The pear industry in the South and some sections of the East is dependent on the Kieffer because it is more resistant to blight than our better varieties. There are in cultivation at the present time more than two thousand varieties of pears. Of this number comparatively few varieties have been thoroughly tested to determine their resistance to pear blight. Is it not possible that among this host of varieties some

will find among these desirable commercial varieties which will not be seriously affected by blight.

The production of blight-resistant varieties of pears offers a splendid field for horticultural work, which up to the present time has received too little attention. The writer is very thoroughly convinced that desirable blight-resistant varieties can be produced by breeding. For example, by crossing such high-quality varieties as Bosc or Anjou with such blight-resistant varieties as Surprise or Burkett, and then growing thousands of seedlings from these crosses it will be possible to originate a variety which will possess high quality as well as blight resistance. That this is possible has been repeatedly demonstrated with other fruits and plants. In this connection it should be emphasized that high quality and susceptibility to blight are not necessarily correlated. For example, the Seckel, a pear of very high quality, shows much greater resistance to blight than most of the low-quality pears.

One of the most promising lines of work and one which offers perhaps the most immediate results is that of growing our commercial varieties on root systems and trunks which are resistant to blight. It is well known that the greatest injury of blight, at least on the Pacific Coast, is inflicted on the root system, trunk and body branches. Here the disease performs its most fatal work; and here it is by all odds the most difficult to combat. The French seedling, on which most of our older pear orchards were budded or grafted, is very susceptible to blight. It is often more susceptible to the disease than many of our cultivated varieties; and this is responsible for the large amount of pear blight in the roots in our older orchards. We now have available an abundance of the Japan pear stock (*Pyrus sinensis*), which is far more resistant to blight than the French pear stock (*Pyrus communis*). Where root blight is as severe as it is here on the Pacific Coast the French pear stock should not be used. Local nurserymen are giving this matter serious consideration and are now propagating most of their trees on the Japan stock. It must be stated that the Japan pear stock has not been so extensively tested in this country as the French stock. Hence we do not know its shortcomings so well. It is possible that for some varieties and on some soils this stock may not prove all that could be desired. But one thing is certain, we cannot afford to continue to use the French stock. In this connection it must be said that we may find other stocks for pears superior to either the French or the Japan stock. All of the French stocks belong to one species, *Pyrus communis*; and the Japan stock belongs to another species, *Pyrus sinensis*. These two species grow wild in their respective countries and have come into extensive use because they are abundant and conveniently obtained. At least twenty other

wild species of pears have been found in Europe and Asia. In China one of these (*Pyrus betulaefolia*) has been successfully used as a stock for their cultivated varieties for many years. This grows readily from cuttings, is a very vigorous grower, and in China is giving excellent results as a stock. Since pear blight has never become prevalent in Europe or Asia we know little regarding the susceptibility or resistance of these species to blight. The Southern Oregon Experiment Station is growing these species to determine their behavior toward blight and their value as stocks for our cultivated varieties. It is possible that we may find in this large collection stocks for our pears which are superior to those now used.

I have already stated that we now have varieties of pears which are rarely, and some never, attacked by blight. The fruit of most of these has little commercial value, but the trees are of the greatest value. We should plant these blight-resistant varieties (on Japan pear stock), grow them in the orchard for two years and then top-work them with our commercial varieties. By doing this it will be possible to keep blight out of the root system, trunk and the main body branches, and by this method we can avoid at least fifty per cent of the injury now inflicted. This will increase the cost of the tree, but the increase will be slight and is not worth considering when compared with the present cost of fighting blight in the trunk and root system. During the past three or four years the Kieffer has been quite extensively used in the West for this purpose. Up to the present time our commercial varieties have made a satisfactory growth on the Kieffer. In the Eastern States this variety has not proved very satisfactory when top-worked with our standard commercial varieties. The scions would usually grow fairly well for a few years, and then most of them would either die or break off at the union. Most of the Kieffers top-worked in the Eastern States were trees old enough to bear, and consequently the grafts were inserted where large branches had been cut off; and under such conditions the union may be much weaker than where the top-working is done by budding into small branches. The writer has observed here in the West that top-grafted Kieffers, even on small branches, will often form a rough, swollen union, while top-budded trees usually have much smoother unions. It is well known that the Kieffer is a hybrid between two very distinct species, and this variety is markedly different from our cultivated European varieties of pears. This is probably responsible for so many weak unions.

We now have varieties which undoubtedly are far superior to the Kieffer as stocks for top-working with our commercial varieties. These varieties are Surprise, Burkett, Krull, Fluke and Orel No. 15. All of these belong to the species *Pyrus communis*, to which

all our commercial varieties on the Pacific Coast belong. For this reason they will make a far better union with these varieties when top-worked than will the Kieffer. Unfortunately trees of these varieties cannot be purchased in large quantities at the present time. We have these varieties growing at the Southern Oregon Experiment Station, and have already interested some of our nurserymen in them. They should have a supply of these for sale in two or three years. In conclusion permit me to say that the pear-blight problem overshadows all other problems connected with pear culture. That this problem will ultimately be solved is beyond the shadow of a doubt.

Apple Exports Were 359 Cars

Washington exported 359 carloads of apples through the North Pacific Fruit Distributors in 1914, according to figures being compiled by that organization to be used in tables in the Washington building at the Panama-Pacific Exposition. The organization's total exports were approximately 600 cars.

The figures call attention to the fact that the export business of the Distributors is not all confined to the Hood River district. The Washington figures show a wide range of varieties exported, exclusive of Yellow Newtowns and Spitzenbergs, which constitute the bulk of the Hood River exports. The Washington apples went to the following foreign cities in the following number of carloads:

Liverpool	65
London	53
Hull	41
Bristol	10
Manchester	6
Glasgow	35
Cardiff	5
Swansea	5
Rotterdam	41
Copenhagen	67
Stockholm	2
Honolulu	5
Manila	22
Buenos Aires	2

The above figures do not include any of the exports by the other agencies. One of the heaviest shippers from Wenatchee was E. Wagner. But using the above figures as something of a criterion, it is probable that the foreign shipments during the past year from all sources ran over 1,000 cars.

A new market in South America is open for potato growers of United States. The Department of Agriculture is making investigations with a view to building up a good trade with South America on our potatoes. Particular care is called to the attention in preparing potatoes for South America shipments—First, all bruised or damaged potatoes should be thrown out; second, frosted potatoes should be excluded; third, no potatoes that show any dry rot or late blight should be shipped; fourth, the barrels should be ventilated by cutting a liberal number of holes in their sides; fifth, shippers should insist that potatoes be stored in a cool, well ventilated part of the vessel.



The End of South Water Street

By Arnold Joerns.

EVER heard of South Water Street? Of course you have. Every grower everywhere knows the name of that old thoroughfare as intimately as the German knows "Unter den Linden," the Englishman "Piccadilly" and the American banker "Wall Street." South Water Street needs no city name appended to give it a location. It is better known to growers than Chicago itself. Indeed, I once heard a prominent Oregon grower say, "Chicago? Yes, it's near South Water Street."

If not the largest, South Water Street is undisputedly the second largest produce market in the world. Here in about two city blocks over \$300,000,000 worth of farm produce is sold annually. This consists chiefly of citrus and deciduous fruits, vegetables, poultry, veal, fish, cheese, butter, eggs and hay. And now, after all this accumulation of reputation, South Water Street is going to move! What is more, it will leave its name behind. South Water Street as a produce market will be but a memory. The grower will tell his grandchildren stories of the old street that sometimes feathered his bank account, and sometimes thieved it. The stories will mark the advance of ethics in business as surely as they will blasphemous practices of the rawest robberies. While most of South Water Street's merchants have been gentlemen of honor, others, like wolves in lamb's clothing, have deceived and stolen with a cunning assurance that laws may be broken without danger.

But now, in perhaps a year, when you come to Chicago to look at this world-famous thoroughfare, you will find—goodness knows what! Perhaps a wide elm-edged boulevard skirting the historical Chicago River,—perhaps a street of sky-scraping office buildings. One thing is certain, the great produce market will not be there. The fact of the matter is South Water Street has worse than outgrown its clothes. It has outworn them. It has darned its

facilities till the darned period developed into almost justifiable damning.

South Water Street had no railway facilities. Think of it! All this produce had to be teamed and trucked across Chicago's congested business "loop," from various scattered railway terminals, to the market. This delaying and expensive method of handling perishable produce drew from the fertile brain of Mr. King, the cartoonist of the Chicago Tribune, the accompanying two masterly cartoons. The first shows the South Water Street produce merchant "husting" himself trying to do business under the old conditions. The second is the sad life story of an innocent cabbage that was sent to South Water Street.

The new location of South Water Street is on 39th Street, between Ashland Avenue and Western Avenue. Though a good three miles south of old South Water Street, the new site is

within four blocks of the center of Chicago, both in point of distance and population. The dominating features of this location are, first, that one hundred acres of land are available here and are already purchased for the purpose; second, that this site adjoins the great Ashland Avenue yards of the Chicago Junction Railway; and, third, that it is also on the Chicago River. This is the one point in all Chicago to which all railroads can directly bring produce and from which all railroads can directly take produce under their own power. So now Chicago's produce market will pass from the intolerable South Water Street condition of no railroads to the perfect 39th Street condition of being literally on every railroad entering Chicago. These railroad yards are already built with a capacity today of 8,000 cars. As soon as required, the capacity will be increased to 10,000 cars.



Old South Water Street, Chicago, today, where \$300,000,000 produce business is conducted annually.

The buildings of the new Produce Terminal will be models of efficiency and sanitation. It is estimated the cost represents \$20,000,000. The picture shown here of the new terminal will only convey the correct idea of its immensity when you consider that the length from east to west is one solid mile.

No more will the cabbage from Iowa or the apple from Oregon be subjected to the bumpety-bump joy-ride through Chicago's cobblestone streets in all weathers. The new terminal will have a giant eight-story cold-storage plant, the first two floors of which will be a union freight station. Into this building freight will come under the power of the choo-choo. It will be immediately unloaded into storage or onto an electric train that will whisk it into the produce merchant's store without it ever leaving shelter. Carlot shipments will have a sheltered yard accessible to all railroads, where shipments from all points can be promptly inspected, sold and reshipped without deteriorating delays, weather perils or switching difficulties. There will be a team track with a capacity of 1500 cars for the efficient sale at wholesale, direct from the cars.

The wagon-shipping station has an area of 39,160 square feet. The Produce Sales and Display Building an area of 240,000 square feet. The Union Auction and Storage Building for Fruits an area of 280,000 square feet, with space inside for 90 cars.

Dishonest practices, as I referred to at the beginning of this article, will be

well-nigh impossible in the new terminal. A Produce Exchange of responsible commission men will sit in judgment on sharp practices, with the power to impose drastic penalties on the impostors. This guarantee of the square deal will not alone put out of business the few dishonest commission men that still exist, but it will also close the market to the dishonest shipper. Yes, shippers have been known to be dishonest, too. More than one honest commission man has found a layer of gravel or sand in the middle of a barrel of potatoes. But these instances are rare, and I dare say no instances are known where "Growers' Associations" have not been entirely "on the level."

Why is the removal of South Water Street to 39th Street so interesting to the grower? Because, fundamentally, this terminal belongs to the grower. The commission man is merely the grower's hired salesman. Growers leave their work half done when they ignore the efficiency of their selling system. Selling the fruits of his toil is as important as growing them. The grower's profits do not depend alone on the garden he waters, with the sweat of his brow; not alone on the back he bends in the heat of the sun. His profits depend very largely on his sales. His sales depend largely on his market, and the quick attention his produce receives when it reaches its destination. The new facilities of the Chicago market will be unprecedented. They will make Chicago your best market.

She: "We women have to stand a lot." He: "Not in the street car if you are pretty."—Boston Transcript.

"Pop, where are the man-hunting tribes to be found?" "Principally in leap year, sonny."—Madison Journal.

Timid Youth: "What do I have to pay for a marriage license?" Facetious Clerk: "Well, you get it on the installment plan." Timid Youth: "How's that?" Facetious Clerk: "Two dollars down and most of your salary each week for the rest of your life."—Kansas City Star.

The Question of Overproduction

Even in as fine an industry as the orchard industry it is worth while to look ahead occasionally and see where we are going; whether we are coming to a point where there is to be overproduction. If there is any danger of coming to that there is certainly nothing more vital for us to consider. We have heard, on our side of the line at least, a lot of talk from various men in whose judgment we had every confidence, that we were approaching a point where there is bound to be overproduction.

While statistics are dry things, it is worth while to consider a few. The report of the Trade and Commerce Department at Ottawa, on the 31st March, 1914, shows that the average shipments of apples from Canada to Great Britain and to the United States and other countries, for the ten years from 1893 to 1902, were something over 800,000 barrels, and the average shipment the next ten years, 1,200,000 barrels; that is, there was a 50 per cent increase in shipments. The last United States census shows that there were 65,000,000 trees in the United States at that time not yet in bearing. These are big figures, and probably we do not take them in, but they present a serious side to the question of overproduction. You will also find present-day plantings are on the average in the hands of much better men than the old plantings were; the work is better handled.

Let us look now at the other side of the question. We had in the United States 50,000,000 less bearing trees at the last census than we had ten years previous. And by the time the 65,000,000 apple trees mentioned before come to bearing, we will probably have lost enough more so that we will not be at all ahead of what we were when the census was taken. Add to this that while this change was going on in the yield the population of the United States had increased from 76,000,000 to 92,000,000, an increase of about 21 per cent, and you have a situation that looks a good deal brighter. Besides this, the people are spending more money, spending it more freely than they used to. There is a good deal more increase than 21 per cent in their buying power. When we narrow it down the situation is not so discouraging.—Professor F. C. Sears, Amherst, Massachusetts.

Read the Jokes and Forget 1914 Apple Prices

"A little nonsense now and then,
Is relished by the best of men."

"She talks like a book." "Yes, the volume of her speech is truly wonderful."—Topeka Journal.

Little Sister: "A widow? What's a widow?" Big Sister: "A lady what's had a husband and is goin' to have another."—Life.

Lawyer: "So you want to make a case of it?" Farmer: "Yes, by jing! I offered to settle by fair means, an' he wouldn't. So I decided I'd hire a lawyer an' have him took into court."—Livingston Lance.

Mistress: "Bridget, did I see Officer Flynn eating cold chicken in the kitchen last night?" Bridget: "You did, mum! And it's not me will heat up a chicken at half-past tin for any cop!"—Puck.

Mazie: "Artie, where are we going on our honeymoon?" Artie: "Around the world, darling. They're going to give it in seven reels at the corner picture show."—New York Globe.

Burton: "Mean man, isn't he?" Robinson: "Mean! He's capable of going into a barber shop for a shave and then getting his hair cut just to keep other people waiting."—Boston Globe.

Smith: "Packers say that meat animals can't catch up with the consumer." Jones: "Ever have a bull chase you?"—New York Sun.

Mrs. Homespun: "What'll we contribute to the minister's donation party?" Farmer Homespun: "Wal, I dunno, Hannar! Taters is 'way up, pork is 'way up, fowl is 'way up—we'll save money by giving him money."—St. Paul Dispatch.

"How's the baby?" asked the neighbor of the new father. "Fine," said the proud parent. "Don't you find that a baby brightens up a household wonderfully?" pursued the friend. "Yes," said the parent, with a sigh; "we have the gas going most of the night now."—New York Globe.

ENGLISH SEEDS

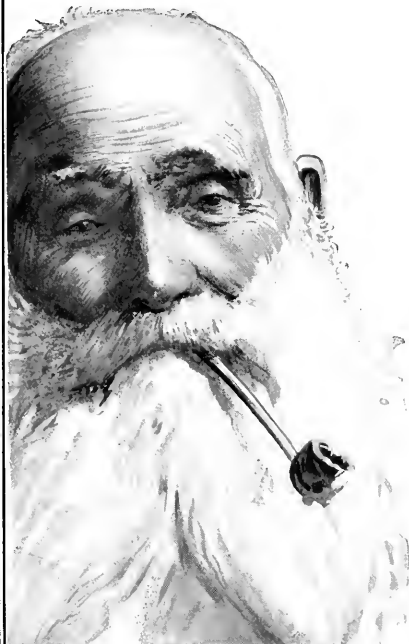
FOR YOUR GARDEN, LAWN
AND FLOWER BEDS

ARCADÉ BUILDING
SEATTLE

Tested
Seeds
Inc.

Branch of JAMES CARTER & CO., London, Eng.

Prince Albert tobacco is the real joy smoke!



Here is another just-elected member of the Prince Albert "old-time jimmy-pipers club." This is John O'Reilly, of East Providence, R. I., who has just passed the century mark. Mr. O'Reilly is one of those grand old men who has come to this ripe age with the joys of his friendly jimmy pipe fresh in his mind each morning. He has always been a liberal smoker.

Just as soon as you smoke some Prince Albert tobacco in a pipe or cigarette, just that soon you'll understand how different it is in flavor, in aroma and in genuine goodness. No other tobacco can be like Prince Albert. The patented process fixes that—and removes the bite and parch!

You come on and get pipe or cigarette makin's happy. Know yourself what it's like to smoke all the tobacco you want, and smoke as long as you want without even tingling your tongue!

PRINCE ALBERT

the national joy smoke

just makes it possible for every man to renew his love for his friendly old pipe, or to get a new idea how good a hand-rolled cigarette can be. You've no idea of the satisfaction, content and restfulness that's yours if you'll get chummy with P. A. Lose no time in getting acquainted with this real and true man-tobacco!

Buy Prince Albert everywhere tobacco is sold. Tippy red bags (handy for cigarett smokers), 5c; tidy red tins, 10c; handsome pound and half-pound tin humidors—and—that classy pound crystal-glass humidor with the sponge-moistener top that keeps P. A. fit as a fiddle!

R. J. REYNOLDS TOBACCO CO.
WINSTON-SALEM, N. C.



Copyright 1915 by R. J. Reynolds Tobacco Co.

LET US MAKE YOUR
fruit Case Labels

Best Work—Cheapest Prices
THE SIMPSON & DOELLER CO.

E. SHELLEY MORGAN, Northwestern Manager
Northwestern Bank Bldg., PORTLAND, ORE.

Control of the Tent Caterpillar

THE conspicuous, unsightly nests or tents of the apple-tree tent caterpillar are familiar objects in the spring in trees along roadways, streams and fences, in neglected orchards and elsewhere. These gregarious caterpillars construct the tents for their protection, and these, at first small, are gradually enlarged often to a foot or more in height and diameter, the size varying with the number of individuals in the colony. The caterpillars feed upon the foliage of the trees, stripping the leaves from the limbs adjacent to the nest, and if there be several colonies in a tree, as is frequently the case during periods of abundance, the foliage may be quite destroyed, leaving the branches as bare as in midwinter. Species of the tent caterpillar are found quite generally over the entire United States. The moths deposit their eggs by early midsummer, or earlier in the South. By fall the embryonic larvæ is practically full grown within the egg, where it remains until the following spring. With the coming of a warm spell the larvæ escape by gnawing through their egg-shells, often before there is foliage out for food, and under these circumstances they may feed upon the glutinous covering of the egg mass.

The tent caterpillar feeds principally on wild cherry and apple trees, but will attack many other plants, and where such trees can be removed without disadvantage this should be done, thus lessening its food supply. During the dormant period of trees, when the leaves are off, the egg masses are fairly conspicuous, and with a little practice may be readily found; it is then that they should be cut off and burned. Trees infested with larvæ during the early part of the year, or those in the immediate vicinity, are perhaps more likely to be chosen by the parent moth for the deposition of her eggs, and such trees at least should be searched if it is not practicable to extend the work to the orchard as a whole. This work may be combined with pruning to good advantage, and a lookout should be kept not only for the eggs of this insect but for the eggs and

cocones of other injurious species which pass the winter on the trees. When two egg masses are deposited close together, the resulting caterpillars may form a common nest. These nests are gradually enlarged and soon furnish ample protection. If the caterpillars are destroyed as soon as the small nests are detected, this will prevent further defoliation of the trees, and the rule should be adopted to destroy them promptly as soon as discovered. In this work either of two practices may be adopted, namely, destruction by hand or with a torch. When in convenient reach, the nests may be torn out with a brush, with gloved hand or otherwise, and the larvæ crushed on the ground, care being taken to destroy any caterpillars which may have remained on the tree. The use of a torch to burn out the nests will often be found convenient, especially when the nests are located in the higher parts of the tree. An asbestos torch, such as is advertised by seedsmen, will be satisfactory, or one may be made simply by tying rags to the end of a pole. The asbestos or rags are saturated with kerosene and lighted and the caterpillars as far as possible cremated. Some caterpillars, however, are likely to escape, falling from the nest upon the application of the torch. In using the torch great care is necessary that no important injury be done the tree; it should not be used in burning out nests except in the smaller branches and twigs, the killing of which would be of no special importance. Nests in the larger limbs should be destroyed by hand, as the use of the torch may kill the bark, resulting in permanent injury.

Tent caterpillars are readily destroyed by arsenicals sprayed on the foliage of trees infested by them. Any of the arsenical insecticides may be used, as paris green, Scheele's green, arsenate of lead, etc. The first two are used at the rate of half pound to fifty gallons of water. Milk of lime, from two to three pounds of stone lime should be added to neutralize any caustic effect of the arsenical on the foliage. Arsenate of lead is used at the

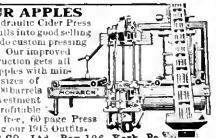
rate of two pounds to each fifty gallons of water. Even in the small home orchard of a dozen or more trees it will be found highly profitable to adopt a system of spraying which will control not only tent caterpillars but such serious pests as the codling moth, cankerworms, various bud and leaf-feeding insects, and which will greatly reduce injury from the curculio. On stone fruits, such as cherry, peach and plum, arsenicals are likely to cause injury to foliage and must be used with caution if at all. On such trees the arsenate of lead is preferable, as it is less injurious to foliage, and on all trees sticks much better. In spraying for the tent caterpillar only, applications should be made while the caterpillars are yet small, as these succumb more quickly to poisons than those more nearly full grown, and prompt treatment stops further defoliation of the trees.

A Model Cannery

One of the most interesting of all practical exhibits in the Palace of Horticulture at the Panama-Pacific International Exposition is the operation of the model cannery under the direction of Dr. A. W. Bitting, food technologist, and Mrs. A. W. Bitting, bacteriologist, both of Washington, D. C., and representing the National Canners' Association. The exhibit is impersonal in that no brands are represented, the exhibit being designed rather to instruct the public in the methods employed by all up-to-date canneries in preparing and packing foods for preservation. The exhibit demonstrates every process entailed in the canning of fruits, vegetables, fish and soups, and every detail is shown from the washing of the raw commodity to the ultimate packing of the can.

Here the visitor will see, being prepared for canning, fish far fresher than ordinarily found in the markets. The washing is done by a special apparatus between sprays of water exerting a pressure of one hundred pounds to the square inch. From the washing appliance the raw material goes to the preparation table or machine under the constant cleansing play of fresh running water. Syrups, brine or other additions are made in every case by machinery. From first to last human

SAVE YOUR APPLES
With a Monarch Hydraulic Cider Press you can turn your apple into good selling cider. You can also do custom pressing for your neighbors. Our improved high pressure construction presses all the juice from the apples with minimum power. All sizes of presses, from 15 to 400 barrels a day. A small investment will start you in a profitable business. Ask for free, 60 page Press Catalogue, and see our 1500 orders for
A. B. FARQUHAR CO., Ltd., Box 106, York, Pa.



REMOVAL NOTICE



We have moved our offices to our old location over the Citizens Bank (122 1/2 Grand Avenue) Rooms 6 and 7.

Write now for prices on advance orders for
**Oregon Champion Gooseberry
Perfection Currant and
Coast Grown Wazzard Cherry Seedlings**
PORTLAND WHOLESALE NURSERY CO.
Rooms 6 & 7, 122 1/2 Grand Ave. Portland, Oregon

Water A-Plenty
for stock, home, fire protection,
etc.—fully discussed in our book,
"Water Supply for the Country Home."
It describes our 300 guaranteed,
durable pumps—hand and pow-
er—\$3 to \$300—which our
Service Dept. will help you
select—free. Send for
your free copy today.

The Goulds Mfg. Co.
Saucer Falls, N.Y.

BRANCHES:
New York
Houston
Chicago
Atlanta
Boston

**GOULDS
RELIABLE
PUMPS**

Wanted! A position as superin-
tendent or manager, on
a fruit ranch preferred, by a young
married man, Agricultural College gra-
duate. Experienced on both fruit and
dairy ranches.

Address R. W. M., Box 413,
Sumner, Wash.

hands never touch the material. The
cans are filled, sealed, cooked, weighed,
labeled and boxed entirely by in-
genious machinery that defies a human
equal for efficiency or sanitation. As
an instance of the wonderful cautions
taken in the better class canneries
these days, the demonstration shows
how temperature controllers and tun-
ing devices automatically regulate the
cooking, insuring uniformity regard-
less of how many thousands of cans
may be involved.

In connection with the cannery is a
laboratory for the scientific testing of
all products. Both chemical and bac-
teriological tests are made, the double
check being necessary to assure both
sterility and uniformity of quality in
the factory's output. This laboratory
is to be used also for continuing re-
search of the exhibiting association
during the continuance of the exposi-
tion. The basic purpose of this demon-
stration is to combat the lingering
prejudice against commercial canned
goods by showing how, in reality, a
great cannery, equipped with all that
the last word in science has brought
forth for sanitation and efficiency, can
turn out a product invincibly superior
to the "home-canned" goods.

Will Exhibit at Exposition

Arrangements and plans are now
completed for an elaborate display of
the hydraulic machinery products
manufactured by The Hydraulic Press
Manufacturing Company, Mount Gilead,
Ohio, at the Panama-Pacific Interna-
tional Exposition at San Francisco.
The exhibit is being installed in block
11 in the Palace of Machinery. The
space to be occupied is 27 feet wide and
67 feet long. The exhibit will be in
charge of the company's Pacific Coast
representatives, The Berger & Carter
Co., 1045 Seventeenth Street, San
Francisco. A practical hydraulic ex-
pert will be in attendance at all times
to operate the machinery and explain

the various features which character-
ize the hydraulic equipment manufac-
tured by this company.

The following machinery will be
exhibited and operated: A 150-ton
hydraulic cider, grape juice, wine or
tankage press; hydraulic cider, wine or
grape juice press, 80 to 100 barrels
capacity; hydraulic cider, wine or
grape juice press, 30 to 40 barrels ca-
pacity; hydraulic Talbert cider mill;
Crawford filter, 3½ feet in diameter;
550-ton hydraulic olive oil press; 500-
ton 30x40-inch hydraulic curb scrap
press; hydraulic triplex pump, motor
driven for high-pressure purposes;
hydraulic steam pump for high-pres-
sure purposes; pressure and speed reg-
ulator for hydraulic steam pump; hy-
draulic valves for high-pressure pur-
poses; 150-ton hydraulic wheel press;
75-ton hydraulic bar-straightening
press; 30-ton hydraulic pipe bender;
15-ton hydraulic broaching press. Spe-
cial foundations are being built in the
space mentioned to support the heaviest
of the hydraulic machinery which is to
be exhibited. Complete hydraulic in-
stallations will be the feature of this
exhibit.

Need No Protection

Rarely do experiments in agriculture
disprove commonly accepted beliefs;
but this has been the result from a
four-year investigation at this station
on the effect of various protective mat-
erials on the wounds of fruit trees due
to pruning. Though many materials
were used in the test none was found
to be of benefit; for in every case un-
treated wounds made as good recovery
as those covered. In nearly all in-
stances the supposedly helpful cover-
ing injured the exposed tissues and re-
tarded healing; the mechanical exclu-
sion of the germs of plant diseases by
impervious coverings and the destruc-
tion of these germs by preservatives
and disinfectants proved without value,
while wounds kept from drying out by
some protective material healed no
more rapidly than those left open to
the air.

Paints made from white lead, white
zinc and yellow ochre were used in the
test, as well as coal tar and avenarius
carbolinum, which are preservatives
and disinfectants, and shellac, which
forms an impervious coating over the
wounds. In different tests extending
over four years these materials were
applied, both immediately following
pruning and after a delay of six weeks
to allow some drying of the surface, to
considerable numbers of large and
small wounds of young and old apple
trees pruned in the winter and in the
spring; and the action of the same
materials on the smaller wounds of
winter-pruned peach trees was under
observation for three years.

In no case was there benefit from the
use of any of the coverings. On peach
all were so harmful that it may be
safely said no covering should ever be
used on trees of this or, presumably,
of any stone fruit. The injury from

CASE Baling Presses



Beat all others for fine, fast
work and small power consumption.
Largest size machine will turn out 4 to 6 tons
per hour with 10 h. p. engine. Mechan-
ically excellent. Like all CASE machin-
ery, they are built to produce results.



Smoother Bales—More of Them
These are the things you want. And CASE
Presses give them. More of them per hour—
with less fuel and less h. p. And years longer
service. Mail postcard for new Baling Press
Catalog and prices. (32)

I. I. Case Threshing Machine Co., Inc., Dept. 827 Racine, Wis.



Ideal Gopher Trap

Only Trap guaranteed
to catch large or small
gopher. Being fitted with thin edges gopher
walks into trap before detecting anything in
runway. Positive grip. Jaws always hold. 100
per cent efficient—catches gopher every time.
Far safer and surer than poisons or gas. Farmers
say it's worth dozen other makes. Price 50c.
If your dealer can't supply you, will be sent
postpaid on receipt of 90c. 10 traps for \$1.00;
six for \$2.00. Money back if not satisfied.

E. J. CHUBBUCK CO.
Dept. C

731 Market Street SAN FRANCISCO, CAL.

shellac was only slight. On the apple
the avenarius carbolinum was very
harmful, the yellow ochre paint re-
tarded healing noticeably and de-
stroyed some tissue, the white lead and
white zinc were less injurious and the
shellac did little or no harm but no
good.


The series of careful, long-con-
tinued comparisons and observations
indicates unmistakably that pruning
wounds on peaches and other stone
fruits should never be treated with
so-called "protective" covering mat-
erials, since their use is decidedly har-
mful. On the apple and other pome
fruits there can be no gain from treat-
ing small wounds at least, with con-
siderable liability to harm. On very
large wounds which heal only after
several years, or not at all, it is pos-
sible that some protection of the wound
may be useful by keeping out disease
germs, but of this the experiments give
no proof.—F. H. Hall, State Experiment
Station, Geneva, New York.

Annual Meeting of Trustees Wenatchee North Central Fruit Distributors

The newly elected board of trustees
of the Wenatchee-North Central Fruit
Distributors held their annual meeting
in the offices of the Sub-Central April
23d. The trustees present were J. G.
Dollar, H. E. Tibbitts, B. P. Webb, D. W.
Boderick, J. B. Schons, T. I. Jones and
W. L. Hatch. The following local trust-
ees also were present: Ben F. Smith,
F. L. Presnell and Frank Reeves.

D. W. Boderick was elected president,
R. P. Webb vice president, J. G. Dollar
secretary and J. B. Schons treasurer.
Frank Reeves, member of the board of
control of the West Wenatchee Fruit
Distributors, was appointed attorney
for the Sub-Central.

TAKE OFF YOUR HAT TO THE MYERS



PUMPS FOR EVERY PURPOSE

Put your water problems up to a Myers Pump, and enjoy modern water facilities for the home and surrounding buildings. Life is too short to waste time and energy with a cheap undersized, back-breaking pump of any kind—Get a MYERS—one that will give you excellent service and an abundant water supply. Choose a pump from our extended line—Cog Gear, Hand and Windmill Pumps for Shallow and Deep Wells; New Style House and Cistern Pumps; Hydro-Pneumatic Service Wells; Easy-to-Install Power Pumps, Pumping Jacks and Cylinders; Tank Pumps; Spray Pumps and Accessories. Our Service Department is ready to assist you. Call on it for information, and ask for catalog and name of nearest dealer.

You will also be interested in Myers Hay Unloading Tools and Door Hangers—Modern Implements that lighten harvest labors and insure Easy Doorways. Let us send circulars.

MYERS

F. E. MYERS & BRO. 120 ORANGE ST. ASHLAND, OHIO.

ASHLAND PUMP & HAY TOOL WORKS

The Distributors' Central Selling Agency is now controlled on a tonnage basis. At present the Wenatchee district is entitled to three trustees. Those appointed were Frank Reeves, D. W. Roderick and H. E. Tibbitts.

Strong feeling of confidence was expressed in the efficiency demonstrated by the growers' organization. It proved its ability to handle big tonnage in an orderly manner during a year of most trying and varied conditions. It is evident that this institution is rapidly gaining the confidence of the growers. The following resolution was passed unanimously:

"We, the members of the board of control of the Wenatchee-North Central Fruit Distributors, desire to express our confidence in the North Pacific Fruit Distributors. We believe the principles upon which this organization operates are purely co-operative and sound. The service and efficiency demonstrated by the Distributors, its capacity for doing big things, its ability to meet and adjust itself to trying conditions, its fairness and impartiality, commend our hearty endorsement.

"We hereby unanimously decide to continue the unqualified support of the Wenatchee-North Central Fruit Dis-

tributors to the North Pacific Fruit Distributors."

The annual meeting of the new board of control of the Central Selling Agency was held at the Distributors' offices in Spokane April 26. The annual meeting for the entire membership of the Wenatchee district will be held at the Wenatchee Commercial Club Monday, May 10, at 2 p. m.

Remarkable Progress of "Better Fruit," the Fruit Growers' Organ

In the balmy month of June "Better Fruit," published by the Better Fruit Publishing Company of Hood River, Oregon, in the interest of the fruit growers of the Pacific Coast, will celebrate its tenth anniversary. This journal has had remarkable progress ever since its first issue. As it goes into its tenth year it no longer has the appearance of a healthy youngster, but presents the strength and well-moulded form of vigorous manhood. As the organ of the fruit growers of the Pacific Coast "Better Fruit" is now firmly established. "Better Fruit" is replete with up-to-date and down-to-the-minute news of the fruit growing industry of the Pacific Coast. This news is presented in faultless typographical dress and is fully illustrated with artistic engravings, the color plates showing fruits of all varieties according to their natural appearance being most effective. While it would afford much pride to the fruit growers of California to have a periodical in this state to worthily represent them in the journalistic field, it is a matter for self-congratulation among them to find that Oregon is able, through "Better Fruit," to give to the world a publication that is a potent exponent of the entire Pacific Coast with especial reference to California.—Western Canner and Packer, San Francisco.

Spray and Culture Used to Control Pear Scab

Pear scab, the most serious fungus disease of pears in Oregon, may be controlled by proper spraying and cultural methods, according to the plant pathologists of the Agricultural College. It is caused by a fungus that may live over winter on decaying leaves and on the twigs, so that it is advisable to plow the leaves under in the spring before the trees blossom, and if the disease is

very well established on the twigs prune back as far as is consistent with good horticultural practice. Three sprayings are recommended—the first just as the blossom buds in the cluster begin to separate, the second just after the petals fall, and the third ten days or two weeks later. If the last application is washed off by a rain soon after it is made a fourth should be given. If the twig form is present in abundance it would be advisable to give an application about ten days before the first one mentioned above. Good results in the Willamette Valley are obtained by the use of lime-sulphur (stock solution 30 degrees Baume) diluted 1 to 30 parts water. If desired bordeaux 5-5-50 may be used in the applications made previous to the opening of the blossoms. Arsenate of lead may be combined with either mixture for codling moth where the time of application coincides with that for scab. Pear scab is not only injurious to fruit but cannerymen are calling attention to the fact that scab renders pears inferior for canning purposes, injuring both the texture and the color of the canned product. Growers that expect the top prices for their surplus pears cannot afford to neglect the recommendations for producing pears free of scab.

Feeding Bees in the Spring

Colonies of bees with good queens are now breeding up rapidly, and consequently are using large amounts of stores. Often the best and strongest colonies run short of honey first. The spring of the year is the critical time for a colony of bees. The owner should see to it that every colony has an abundance of honey for its needs. Combs of sealed honey may be taken from colonies that can spare them, or feeding of sugar syrup may be done. The giving of combs of sealed honey is recommended if there is little or no disease in the apiary; otherwise, sugar syrup should be fed. Sugar syrup should be fed warm and otherwise half or two-thirds water. See that the sugar is thoroughly dissolved. Feeding should be done in the evening, so the bees will have all the syrup taken up by morning. The feeders, such as the Alexander, Doolittle, Miller or Boardman, are all good and may be secured from the supply dealers.—Wesley Foster, State Bee Inspector, Boulder, Colorado.

When It's Blossom Time for Apples

Use broadcast 200 lbs. Nitrate of Soda per acre this Spring at or soon after Blossom Time.

Nitrate of Soda is all immediately available. It takes Nitrate of Soda for Apple Results.

*Send Post Card To-day
for Fruit Books—Free*

WILLIAM S. MYERS, Director
25 Madison Avenue, New York

"The Farmer's Friend"



CELEBRATED
C&S
AXLE GREASE
WHITTIER COBURN CO.
MANUFACTURERS
SAN FRANCISCO, CAL.

Ask your Dealer



Courtesy of Western Fruit Jobber
 Mr. William D. Tidwell, Denver, Colorado
 Secretary Western Fruit Jobbers' Association

Northwest Grading Rules, Season 1915

THESE grading rules for Washington, Oregon, Idaho and Montana were unanimously adopted at the Spokane conference April 28th, 1915, by the Northwest Fruit Shippers' Council, and by delegates from the following organizations: Apple Growers' Association, Hood River; Cashmere Fruit Growers' Exchange, Cashmere; Cashmere Fruit Union, Cashmere; Central Idaho-Washington Fruit Growers' Association, Gardiner; Hayes Fruit Company, North Yakima; Idaho-Oregon Fruit Growers' Association, Payette; Montana Fruit Distributors, Hamilton; North Pacific Fruit Distributors, Spokane; Northwestern Fruit Exchange, Seattle; Northwest Fruit Growers' Council, Puyallup; Peshastin Fruit Growers' Association, Peshastin; Puyallup and Sumner Fruit Growers' Association, Puyallup; Randolph Fruit Company, North Yakima; Richey & Gilbert, Toppenish; Rogue River Fruit and Produce Association, Medford; Spokane Fruit Growers' Company, Spokane; Thompson Fruit Company, North Yakima; Walla Walla District Fruit Distributors,

Walla Walla; Wenatchee North-Central Fruit Distributors, Wenatchee; Wenatchee North-Central Washington Fruit Growers' League, Wenatchee; Wenatchee Valley Fruit Growers' Association, Wenatchee; White Bros. & Crum Company, Lewiston; White Salmon Valley Fruit Growers' Association, White Salmon; C. A. Wilmeroth, Wenatchee; Western Oregon Fruit Distributors, Portland; Yakima County Horticultural Union, North Yakima; Yakima Valley Fruit Growers' Association, North Yakima.

APPLES

"First Grade," "Grade No. 1," or "Extra Fancy" are defined as sound, smooth, mature, clean, hand-picked, well-formed apples only, free from all insect pests, diseases, blemishes, bruises and other physical injuries, scald, scab, scale, dry or bitter rot, worms, worm stings, worm holes, spray burn, limb rub, visible water core skin puncture or skin broken at stem. The following varieties shall be admitted to this grade, subject to the color requirements specified:

SPECIAL
 on
Arsenate
 of
Lead
"Electro" Brand
 For one month only we offer this valuable insecticide, in powdered form, at a special price of
10 lb., 25 lb. and 20c lb.
 50 lb. packages
 F.o.b. Seattle or Portland.
LILLY'S

GREAT FENCE SALE!
 We sell more Fencing direct to the farmers, than any other concern West of the Rockies! Jones' new "Stop 'em" Rabbit Fence, 30-inches high (slays 4 1/2 inches apart, 17 wires, weight 4 1/2 lbs. a rod.) Strong enough to turn hogs. Sale price, **27c** per rod.

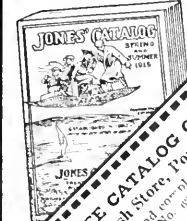
Jones' Special Hog Fence

One of the world's greatest Fence values. Extra heavy carbon base open hearth steel fencing with barbed wire bottom, woven right into the fence. Stretches perfectly over uneven ground. No hogs can get under the fence. Special sale price, **18c** per rod.

Get Our Big FREE BARGAIN BOOK, No. 63—154 pages—Fencing, Paints, Hardware, Groceries, Dry Goods, Shoes—everything you need at wholesale prices. Write name on a postal, or fill out coupon below.

JONES CASH STORE
 Union Ave. and E. Burnside, Portland, Ore.

Est. 1882



FREE CATALOG COUPON!
 Please send me one of the FREE Catalogs from
 Jones Cash Store, Portland, Oregon
 Name _____
 Address _____

The Label Helps the Sale of Your Fruit



We are originators and producers of distinctive and artistic labels. Our Apple and Case labels will make your fruit more attractive and help the sale.

Let us know your needs and we will submit estimate. Write nearest office.

Schmidt Lithographing Co.

SAN FRANCISCO

Los Angeles Fresno Portland Seattle Salt Lake

Portland Tent & Awning Co.

MANUFACTURERS OF

Tents, Awnings, Covers

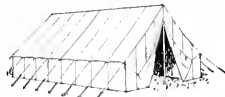
Canvas Goods of All Descriptions

Hammocks, Camp Furniture, Etc.

Telephone: Main 1550

16 North Front St., corner Burnside, PORTLAND, OREGON

Special tents to order for housing fruitgrowers' extra help during strawberry and apple picking seasons. Extra large tents to order for apple growers, suitable for storing apples as they come from the orchard; also, suitable for grading machines and apple packers. Weather-proof canvas wagon covers a specialty.



Solid Red Varieties: Aiken Red, Arkansas Black, Baldwin, Black Ben Davis, Gano, King David, McIntosh Red, Spitzenberg, (Esopus), Vanderpool, Winesap must have not less than three-fourths good red color. Jonathan must have not less than two-thirds good red color. Black Twig, Missouri Pippin must have not less than fifty per cent good red color.

Striped or Partial Red Varieties: Delicious, Staymen must have not less than two-thirds good red color. Ben Davis, Hubbardson Nonesuch, Jeniton, Kaighn Spitzenberg, Northern Spy, Wealthy, Rome Beauty, Balmier, Snow, Wagener, York Imperial must have not less than fifty per cent good red color. Gravenstein, Jeffrey, King of Tompkins County must have not less than one-fourth good red color.

Red-Checked or Blushed Varieties: Hydes King, Maiden Blush, Red Check Pippin, Winter Banana must have a perceptible blushed cheek.

Yellow or Green Varieties: Grimes Golden, Yellow Newtown, White Winter Pearmain, Cox's Orange Pippin must have the characteristic color of the variety. Ortlely must be white, yellow or waxen.

"Second Grade," "Grade No. 2," "Fancy" apples are defined as apples complying with the standard of first-grade apples, except that slight leaf rub, scratches or russeting shall be permitted up to a total of one inch in diameter in counts running 125 or less to the box, or three-fourths of an inch in diameter in counts running from 138

to 163 to the box, and one-half inch in diameter in counts running 175 or more to the box; and limb rubs will be permitted showing an aggregate area in the various counts of one-half of that allowed for leaf rubs, providing that no apple shall show total blemishes aggregating more than one inch in diameter in counts running 125 to the box or less; more than three-fourths inch in diameter in counts running 138 to 163 to the box, and one-half inch in diameter in counts running 175 to the box or more. No clearly misshapen or bruised apple, or apples bearing evidence of rough handling shall be permitted in this grade. The following varieties shall be admitted to this grade, subject to the color requirements specified:

Solid Red Varieties: Aiken Red, Arkansas Black, Baldwin, Black Ben Davis, Gano, King David, McIntosh Red, Spitzenberg, (Esopus), Vanderpool, Winesap must have not less than forty per cent good red color. Jonathan must not have less than one-third good red color. Black Twig, Missouri Pippin must have not less than twenty-five per cent good red color.

Striped or Partial Red Varieties: Delicious, Staymen must have not less than one-third

good red color. Ben Davis, Hubbardson Nonesuch, Jeniton, Kaighn Spitzenberg, Northern Spy, Balmier, Snow, Wagener, Wealthy, York Imperial must have not less than ten per cent good red color. Gravenstein, Jeffrey, King of Tompkins County must have not less than ten per cent good red color. Rome Beauty—No specific color requirement is defined for Rome Beauty in this grade other than that each specimen must show a perceptible blush or overspread of reddish color characteristic of the variety; except that Rome Beauty apples of 96 size and larger shall be admitted without color.

Red-Checked or Blushed Varieties: Must have correct physical quality with tinge of color.

Yellow or Green Varieties: Must be of the characteristic color.

"Third Grade," "Grade No. 3" or "C" grade apples shall consist of mature apples free from all insect pests, worms, worm holes, infectious diseases, skin punctures, bruises or broken skin, but slightly misshapen apples or those having sunscald, not to exceed two healed-over stings, and the blemishes allowed for second-grade apples shall be permitted, and there shall be no requirement as to color.

"Combination Extra Fancy and Fancy" grade.—When first and second-grade apples are packed together the packages must be marked "Combination Extra Fancy and Fancy." Combination grade may also include all other

Position Wanted

By an experienced orchard and ranch man with executive ability as foreman; 12 years in West. Best references furnished. Strictly temperate. Can furnish A-1 3300-pound team if necessary. Address Box S, care "Better Fruit."

The "Sprague" Canning Machinery Company

are the Largest Builders of
and Dealers in Machinery
for Canners in the world.

☞ We build over one hundred separate machines in our plant at Hoopston, Ill., to serve every canning purpose, such as Preparing, Filling, Syruping, Conveying and Sealing.

☞ For Fruits, Fish and Vegetables.

☞ Surely there is some way in which we can serve you.

☞ Send for our great catalogue and ask us to put your name on our mailing list for "Cannery Notes"—It's Free.

Address the

Sprague Canning Machinery Co.

222 N. Wabash Ave.
Chicago, Ill.

apple varieties not provided for in first and second grades. When second and third-grade apples are packed together the packages must be marked "Third Grade." When first, second and third-grade apples are packed together the packages must be marked "Orchard Run," but orchard-run packages must not contain any apples that would not meet the requirements of third grade.

Summer and Early Fall Varieties.—
 Summer varieties such as Astrachan, Bailey's Sweet, Bietingheimer, Duchess, Early Harvest, Red June, Strawberry, Twenty Ounce Pippin, Yellow Transparent and kindred varieties not otherwise specified in these grading rules, together with early fall varieties such as Alexander, Blue Pearmain, Wolf River, Spokane Beauty, Fall Pippin, Waxen, Tolman Sweet, Sweet Bough, and other varieties not provided for in these grading rules, as grown in sections of early maturity, shall be packed in accordance with the grading rules covering Fancy grade as to defects, but regardless of color rules. All apples packed otherwise than according to the foregoing grading rules shall be accompanied by printed description of the contents on each package.

PEACHES

Peaches should be picked for packing only when fully developed, but firm or hard ripe. Yellow-meated varieties should show some yellow color. The fruit should be picked and laid, not dropped, in the basket or pails, and should be taken from the vessel only at packing table. All possible care should be used to avoid bruises.

Use standard peach boxes; cleats on top only; use 4d special orange-box cement nails for bottoms and sides. Drive nails one inch from corner, four nails to each piece. Use three 4d cement box nails for each cleat, one in the center and one driven two inches from the end of the cleat. The cover should hold the fruit firmly in the box but should not bulge more than three-eighths of an inch. Use 4½-inch boxes only for Elberta peaches running 50 to 84, both inclusive, avoiding the use of extra cleats except in extreme cases. Peaches that are too large to be laid five wide in the box should be packed two and three in 4½-inch boxes. If the peaches are roundish, as in the case of Crawford's, it will be necessary to use some 4-inch boxes with this pack.

Peaches that will go five across the box or smaller should be packed three and three in 4-inch boxes. The excellence of the pack depends upon uniform grading. The peaches in a box should not vary more than one-eighth of an inch in diameter. All peaches must be carefully wrapped in suitable paper.

Peaches that run less than 96 to the box must not be packed for shipment. Eighty-four count must be the minimum for Elbertas. In packing the box should set on an incline with the lower end of the box to the packer. Both tiers should be carried forward together. The peaches should be placed in the box stem-end down; those in the

Compare them



Compare the little old Haynes "horseless carriage" of 20 years ago with the latest 8-cylinder car. *Some advance!*



There's just as big a difference between the 1915 Caterpillar "75" and the old "45" of 1911 or 1912.



Compare the old battleship Oregon—now a side-show at the Panama-Pacific—with the new super-dreadnaught Wyoming.



The new "75" is just as much stronger. Simpler, too—5 pieces in the track unit where it took 25 three years ago—less wear, no waste of power, longer life.



Compare Engine 999—marvel of the Chicago World's Fair—with the latest Mallet locomotive at the P. P. I. E.



Just as much improvement in the latest Caterpillar "75"—stronger frame, all cut-steel gears in dust-proof cases, scores of important refinements.

Take the first chance to compare the new Caterpillar with the old one. Write us—we'll tell you where you can see them both together. Send for Bulletin BE 274, or see exhibits at San Francisco and San Diego Expositions.

CATERPILLAR

Reg. U.S. Pat. Off.

The Holt Manufacturing Company (Inc.)



Spokane, Wash
 Portland, Ore.
 Stockton, Cal.
 Peoria, Ill.

Crosby, Wagon & Mch. Co.
 Sales Agents
 Salt Lake City, Utah

Canning! Canning!

This Steam Pressure Canning Plant will save your perishable Fruit Crop when nothing else will. Ten different size outfits to select from.

Write for Catalog B-2

HENNINGER & AYES MFG. CO.

47 First Street

PORTLAND, OREGON



BY-PRODUCTS Growers, Bankers, Business Men STOP! LOOK!! LISTEN!!!

Do It NOW "Procrastination is the thief of time." Don't send inquiries when your evaporator should be under construction. Take time by the forelock; come early and avoid the rush. Are YOU going to wait till that sad time—TOO LATE. If you don't want those pigs to eat your big red apples write us TODAY.

MILLIONS OF POUNDS

of evaporated fruits will be needed by war-ridden Europe and REMEMBER Kitchener says: "The war may last three years."

LIBERAL DISCOUNTS ON EARLY ORDERS—Given by

Western Commercial Fruit Evaporator Co.

1005 Chamber of Commerce Building, PORTLAND, OREGON

SEE PICTURE OF PLANT IN MARCH, APRIL AND MAY ISSUES OF "BETTER FRUIT"
Our managing engineer will "sit up nights" to answer inquiries NOW; but will be "very busy" soon.

top tier resting in the spaces between those in the lower tier so that no peach will rest squarely on top of another.

Pack all peaches with the loose end of the wrapper down. No overripe, under-sized, immature, bruised, misshapen, diseased, wormy or otherwise defective fruit should be packed. The variety, numerical count and grower's name to be placed on the label-end of the box with rubber stamps.

PRUNES AND PLUMS

Pick as large a percentage as possible with stems on. Throw out all stemless fruit when skins are broken or torn. Pickers should be very careful in picking not to brush off the bloom. Gloves should never be used in handling prunes and plums. Prunes and plums should be hard ripe for picking. Fruit should contain some sugar and be matured enough so it will continue ripening and have a good flavor. Fruit should be free from all insect pests, scale, scab, blemishes and physical injuries.

Prunes and plums and all such fruit should be packed in four-basket prune crates unless ordered otherwise. Fruit too small to pack 6x6 top should never be packed in prune crates and should only be shipped in 3½-inch peach boxes. Whenever possible use a square pack.

Pack all Tragedies and Italians three-tier deep, top layer stem-end down; bottom layers to be packed and not jumbled; pack top tier with creased side up and all the same way. Hungarians, Bradshaws, Peach Plums and similar varieties that pack smaller than 5x5 in prune crates should not be packed.

PEARS

There shall be three grades of pears, Extra Fancy, Fancy and C grade.

Extra Fancy.—This grade shall consist of pears that are hand-picked, clean, sound and free from insect pests, sunscald, scab, scale or other diseases, worm holes, stings, limb rub, misshapen, broken skin or stemless, bruised, or evidence of frost by russetting, rough handling or serious defects, excepting a small amount of russetting, not clearly noticeable or covering a total area to exceed one-half inch

square may be admitted, no one spot to exceed one-fourth-inch area. No pears smaller in size than 175 to the box shall be permitted in this grade. Packed boxes should weigh not less than 50 pounds gross, except Winter Nelis, which shall weigh at least 47 pounds gross.

Fancy.—This grade shall consist of all fruit which does not meet with the requirements of the Extra Fancy grade as to blemishes, deformities and sizes, but which in every way is sound and marketable and shows no disease, skin puncture, stemless or defect that would injure the keeping qualities. Slightly misshapen fruit may be admitted in this grade. Pears will be accepted in this grade as small as 200 to the box.

C Grade.—This grade shall consist of all fruit which does not meet with the requirements of the Extra Fancy and Fancy grades as to blemishes and deformities but which in every way is

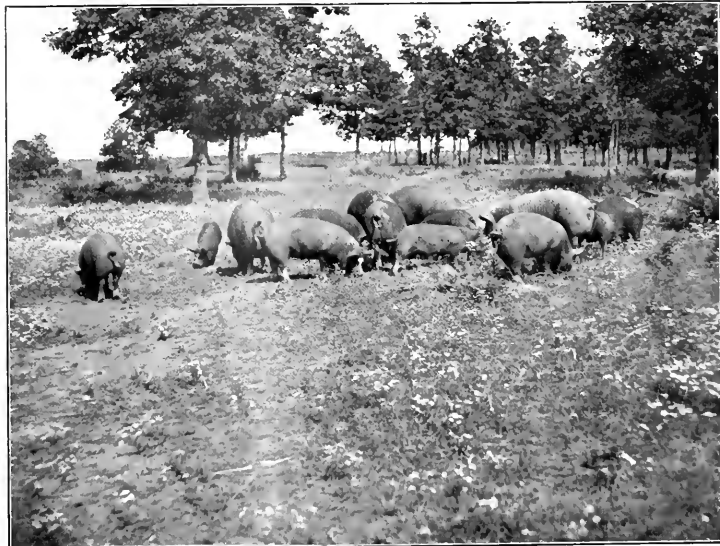
sound and marketable and free from disease. Smaller pears than 200 count to the box will be admitted in this grade.

In the case of Winter Nelis and Bose varieties same grading will apply except that the natural russetting is desirable and required. Winter Nelis to be accepted 200 count to the box in Extra Fancy and 300 to the box in Fancy grades. Every box of pears shall have clearly stamped upon it the number of fruit contained in the box. All packed pears to be wrapped.

CHERRIES

10-lb. Boxes.—All marketable varieties must be in perfect condition, of the right degree of ripeness, free from all insect pests and blemishes. Stemless cherries to be kept out. In packing the ten-pound boxes care must be taken by the packer to have the cherries as near uniform in size as possible

Continued on page 23



Courtesy of Southern Pacific Railway

Berkshire Hogs of Yamhill County, Oregon, showing diversified farming in the Northwest along the line of the Southern Pacific Railway

Handling Fruit by Machinery

The fame of Hood River Fruit is backed up first by the wonderful finish of nature's delicate touch and the extreme richness of flavor imparted by the perfect soil and climatic conditions of the Hood River Valley, but advanced methods in grading and packing the product have attracted the attention of both the trade and the general public, who appreciate superior food articles.

Now comes Walter G. Palmer, a noted Hood River inventor with a real practical and efficient machine for grading fruit. For several years Mr. Palmer has been improving his machine until now he has brought out a "simply wonderful and a wonderfully simple machine," with almost unlimited capacity, which will handle any kind of fruit ranging from one and one-half to four inches in diameter, or special machines can be made to handle fruit or any irregular roundish articles accurately up to six inches or larger in diameter.

This machine has three channels with traveling conveyors. Each channel has a capacity of about 150 apples per minute, or 275,000 apples in ten hours, which is equal to handling more than 2000 boxes or 700 barrels of apples in ten hours and running at half its capacity would handle nearly two car loads a day.

When three grades are wanted, each channel will handle one grade separating the principal grade into nine sizes, the second grade into six sizes, and the third grade into three sizes, or when only two grades are required, two channels can be used for the principal grade and one channel for the second grade, separating both grades into nine sizes.

The strong feature of this machine is that the fruit passes through square holes which expand both longitudinally and laterally at the same time, beginning at the feed end at 1½ inches square and expanding to 1 inches square at the opposite end, the fruit being discharged at a point where the expansion is sufficient to allow it to pass through into the bins.

The second important feature is Mr. Palmer's device for laying the fruit from the bins into the bottom of the boxes or barrels a half bushel or more at a time, more gently than the ordinary person would lay them in two or three apples at a time by hand.

In order to comply with the state law and also the demands of the trade, handling large crops of apples by hand is a thing of the past, as hand labor is too expensive and not sufficiently accurate, hence the production of this wonderful machine is very timely.

A cut of this machine appears on page 21 of this issue of "Better Fruit." —[Adv.]

A letter from the Spokane Fruit Growers' Company announces that Mr. L. J. Blot, formerly district manager for the North Pacific Fruit Distributors,

with offices at Minneapolis, has accepted a position with the Spokane Fruit Growers' Company. According to their letterhead, this company is affiliated with the North Pacific Fruit Distributors. It is capitalized for \$125,000, with offices in the Hyde Block, Spokane. Mr. Blot's record with the Distributors is good evidence of his qualification as a salesman. Therefore, it is expected he will render efficient service in this important position. The Spokane Fruit Growers' Company expects to do special work for the Spokane district, which is a comparatively new district and not so well known as some of the older-established districts. The Spokane fruitgrowers feel that through an organization of this kind, with concentrated effort, they can put the Spokane country on the map with the fruit dealers and the fruit-consuming public in a very rapid way.

Mr. Sam G. Campbell of Hood River, for the last two years inspector for the North Pacific Fruit Distributors, will have full charge of the inspection service for the Hood River Apple Growers' Association during the year 1915. There is no man in the Northwest that understands this business better than Mr. Campbell. The editor knows this, having selected Mr. Campbell as his inspector when he was manager of the Hood River Apple Growers' Union during its early years of organization. Mr. Campbell is an expert packer and knows the grading rules like the multiplication tables, and knows how to apply them with good judgment and intelligence. In addition to this, Mr. Campbell is a man of decision and firmness, at the same time tactful, diplomatic and respectful. The grower who thinks he can "get by" Mr. Campbell, will find if he tries, he has run up against a stone wall. In addition to this, Mr. Campbell is a splendid fellow, a courteous gentleman and a true friend.

The Bean Spray Pump Company of San Jose, California, has a very nice display of sprayers on exhibition at the Panama-Pacific Exposition, and through "Better Fruit" extends an invitation to all fruitgrowers to make the "Bean Booth" headquarters when visiting the Exposition. One feature of the exhibition which draws much attention is the "10-horsepower Bean engine," mounted on a circular table and revolving slowly by its own power. The Bean Spray Pump Company has a complete line of spray outfits ranging from a small rig for one man, known as the "Bean Eureka," to the "Bean Giant," which has a capacity of eight to ten gallons per minute. The small fruitgrower will appreciate and be interested in the "Bean Eureka," as this machine is calculated to do away with the use of a hand pump which the small fruitgrower has been compelled to use. The sprayer is light, so that one horse can pull it, and especially adapted to the small orchard, and being very light can be used on hilly ground. The "Bean



WINANS' PATENT

FIRST AID TO FRUIT TREES Winans' Net Tree Support

Prevents fruit-laden trees from breaking, holding the limbs up more efficiently and at much less expense than propping. Holds limbs in place, preventing damage and drooping when the wind blows.

Meshes are large enough so fruit can be picked through them—open at bottom so picker can get inside the net, or net can be removed at picking time.

This net of finer mesh will keep the birds from eating the blossoms or fruit in districts which are thus troubled.

For further particulars, descriptive circulars and price lists, write

W. ROSS WINANS, Hood River, Ore.

Mount Tamalpais Military Academy

SAN RAFAEL, CALIFORNIA

The most thoroughly organized and completely equipped Military School west of the Rocky Mountains; Cavalry, Infantry, Mounted Artillery. Sixteen miles North of San Francisco; U. S. Army officer detailed by War Department; accredited by the University of California, Stanford and other Colleges. Twenty-sixth year begins August 24th, 1915.

Address Rev. Arthur Crosby, A. M., D. D.

Giant," of course, commands more attention, for the reason that a large outfit is more extensively used by the commercial orchardist. In connection with the exhibit of spray outfits the Bean Spray Pump Company also has a splendid exhibit of centrifugal pumps, in which this company does a large business. The fruitgrowers will not only find this exhibit exceedingly interesting but a very profitable place to make headquarters, as the California people are celebrated for their hospitality.

Client: "I want to sue for a divorce and an allowance of \$1,500 a year."
Lawyer: "What is your husband's income?"
Client: "It's about that. I wouldn't ask for more than the man makes. I'm not that kind."—Boston Transcript.

BETTER FRUIT

HOOD RIVER, OREGON

Official Organ of the Northwest Fruit Growers' Association
A Monthly Illustrated Magazine Published in the
Interest of Modern Fruit Growing and Marketing
All Communications Should be Addressed and Remittances
Made Payable to

Better Fruit Publishing Company

E. H. SHEPARD, Editor and Publisher
H. E. VAN DEMAN, Contributing Editor

STATE ASSOCIATE EDITORS

OREGON

C. I. Lewis, Horticulturist.....Corvallis
H. S. Jackson, Horticulturist.....Corvallis
H. F. Wilson, Entomologist.....Corvallis

WASHINGTON

Dr. A. L. Melander, Entomologist.....Pullman
O. M. Morris, Horticulturist.....Pullman

COLORADO

C. P. Gillette, Director and Entomologist.....Fort Collins
E. B. House, Chief of Department of Civil and Irrigation
Engineering, State Agricultural College.....Fort Collins
E. P. Taylor, Horticulturist.....Grand Junction

IDAHO

W. H. Wicks, Horticulturist.....Moscow
W. S. Thornber, Horticulturist.....Lewiston

UTAH

Dr. E. D. Ball, Director and Entomologist.....Logan

MONTANA

O. B. Whipple, Horticulturist.....Bozeman

CALIFORNIA

C. W. Woodworth, Entomologist.....Berkeley
W. H. Volck, Entomologist.....Watsonville
Leo D. Batchelor, Horticulturist.....Riverside

BRITISH COLUMBIA

R. M. Winslow, Provincial Horticulturist.....Victoria

SUBSCRIPTION PRICE:

In the United States, \$1.00 per year in advance

Canada and foreign, including postage, \$1.50

ADVERTISING RATES ON APPLICATION

Entered as second-class matter December 27, 1906, at the
Postoffice at Hood River, Oregon, under Act
of Congress of March 3, 1879.

Home Canning Outfits—The Experiment Station of Idaho has demonstrated very successfully that home canning is a success. The business is carried on in a business like way; the exact cost is obtained and the output sold at a profit. The whole output of the home cannery in connection with the Experiment Station at Moscow was taken entirely by the hotels, restaurants, boarding houses and private families in that city. A number of fruit growers could install home canneries and sell their entire outputs in the local city where they trade. Those who could install a large outfit, by visiting some of the large cities and calling on the hotels, restaurants, boarding houses, etc., could easily dispose of their entire output at a satisfactory price. For quality and flavor it is hard to beat home canned fruit which is put up fresh from the orchard the day it is picked. This is a subject that is well worth the attention of every fruit grower, and one that every fruit grower should investigate. Home canning outfits can be purchased at very reasonable figures, all the way from \$25 to \$100. Catalogues can be obtained by writing the dealers who handle cannery supplies, and these catalogues not only give the price of the outfit but the size, and other information of much value.

Blossom and Early Estimates.—It seems to be an established custom to call for blossom estimates. For this there must be a reason, but the reason never seemed very clear. Blossom estimates are not very significant. It is true that if there are no blossoms there will be no crop. On the other hand it is equally true there may be

a heavy bloom and a light crop. Just why the fruit growers should be called on to "count their chickens before they are hatched," has never been very satisfactorily explained. It usually does more harm than good. Any information that is not correct information and that is not reliable is pernicious. Where estimates are made in the bloom, it is calculated the crop will be in accordance with the bloom. It invariably happens that there is an immense shedding following the blooming period, with the June drop afterwards. Therefore in most cases the blossom estimates are over estimates and create exaggerated impressions in regard to the quality of the crop, which are very difficult to overcome. All reputable dealers, handlers and growers should stand for reliable estimates. Apples are seldom sold or contracted for before July or August, and usually not until the harvesting begins, therefore it seems it is ample time to furnish estimates, if they are given when the crop is set, when there is reasonable assurance of the estimator being able to estimate intelligently with some degree of certainty.

The Northwest Fruit Grading Rules.—This edition contains a complete copy of the grading rules that were adopted by a committee from the Fruit Growers' Council and the Fruit Shippers' League at a joint session held in Spokane. It will be the first time in the history of the Northwest that a uniform grade has been adopted by all sections, all shippers and all growers. This should mean much towards standardizing the fruit industry of the Northwest, which means extra money for everyone engaged in the fruit business. Business is largely done on confidence, but confidence will not hold trade unless the goods are up to standard, therefore it behooves every grower this year to conform absolutely to grade requirements, doing his grading intelligently and honestly. Intelligence and honesty in grading will put many extra dollars in fruit growers' pockets. You can fool a man once, but you cannot fool him twice on the same thing very often.

The Apple Crop of the Northwest.—It is too early to put out anything definite in the way of crop estimates in the Northwest at the present time, because the first shedding after the bloom is not yet over and the June drop not yet occurred. However, it is a fact that the bloom this year was very irregular and in many orchards very light. The shedding following the blossom has been exceedingly heavy and very erratic; some trees shedding completely, others partially, and frequently one limb of a tree would shed while the balance of the tree would set fairly well. Generally speaking the shedding has been very severe. All of the old orchards from 12 years of age and over have shed

excessively heavy, the young trees from 5 to 12 years of age have set much firmer and better than the older orchards. It is the general impression that the apple crop of the Northwest this year will be very much lighter than in the year 1914.

Crop Estimates.—This edition contains a splendid article explaining fully and thoroughly how the Government estimates are made. It should be read by every fruit grower, who is a subscriber to Better Fruit, who should pass it along to his friends, if there are any in the fruit business, who are not subscribers. There has been a great deal of difference between the Government estimates, the International Apple Shippers' estimates, and the growers' estimates. An intelligent understanding of how Government estimates are made will account for this vast difference. The Government estimates the entire crop that is produced, including what is shipped, what is consumed by by-product factories, and what goes to waste. District estimates usually only include what is shipped in carlots.

"The Consumer's Dollar," published in the May edition of "Better Fruit" was an address given by Mr. G. Harold Powell, before the Western Fruit Jobbers' Association of America at Los Angeles this year. This excellent address was published in the Western Jobbers' monthly publication, and also in pamphlet form, copy of which was furnished "Better Fruit," the same being re-printed in the May edition. The editor desires to say it was an oversight in not giving credit to the Western Fruit Jobbers for a copy of this article, and also for neglecting to state it was an address delivered by Mr. G. Harold Powell before the Western Fruit Jobbers' meeting at Los Angeles, California.

Evaporators.—An immense amount of fruit goes to waste every year when the fresh fruit markets are glutted. There is always a good demand for evaporated and dried fruits. The sale for dried or evaporated prunes is immense every year. There is a good demand for evaporated apples. Fruit growers ought to give the matter serious attention and act quickly, as the time is getting short, if you intend to install an evaporator this year.

Canning Fruits.—The Northwest is at last beginning to realize the importance and the necessity of canneries in connection with the fruit industry. A large cannery is being built at The Dalles, Oregon; another large cannery is being built at North Yakima. A cannery was erected at Hood River last year.

The walnut crop of California for the year 1915 looks unusually good and will probably be one of the largest crops of walnuts produced in the state.

Fruit Distributors Perfecting Organization

The North Pacific Fruit Distributors have made some marked changes and improvements, which are fully outlined in the plan of re-organization, which was explained quite fully in the May edition of "Better Fruit." Since then the officials have been very active in perfecting their organization and laying the plans for the coming season. Some important changes have been made in the officials, Mr. H. F. Davidson resigned as President, and Mr. F. A. Reeves of Wenatchee, has been elected President. Mr. Reeves is one of the prominent fruit growers of the Wenatchee Valley. He has the reputation of being one of the ablest attorneys in the State of Washington, a splendid business man and very progressive. With his able advice and counsel, not only as an attorney but as a successful business man, it is only just and fair to assume that the North Pacific Fruit Distributors will render efficient service.

The Hood River district in withdrawing from the North Pacific Fruit Distributors expressed no dissatisfaction with the Distributors, but on the other hand commended the Distributors for the excellent work they had done, saying, "In the past two years that better results had been obtained by marketing through the North Pacific Fruit Distributors than would have been obtained without their assistance." It is believed by Hood River, owing to the fact that its apple output is confined principally and almost entirely to two varieties, the Newtowns and Spitzenburgs, that by special concentration on these two varieties, which Hood River can give through sales agents of its own, that better results can be secured than in any other way. However, it is the general impression that the Distributors will not suffer from the withdrawal of Hood River. On the contrary, it is believed that other districts will increase their tonnage with the Distributors, and it therefore looks as if they would handle as great if not a greater percentage of the crop this year than last year.

The following is a list of the new Board of Trustees for the North Pacific Fruit Distributors for 1915: Yakima—C. H. Hinman, South Nob Hill; P. L. Porter, Donald; Austin Woodyard, Sunnyside; W. B. Armstrong, Lower Nachez, and C. H. Stein, Selah. Wenatchee—D. W. Roderick, West Wenatchee; Frank A. Reeves, North and East Wenatchee, and H. E. Tibbits, Cashmere. Idaho-Oregon—W. N. Yost, Meridian, and J. H. Lowell, Parma-Roswell. Walla Walla—Harry Huber, Milton, Ore. Central Idaho-Washington—F. M. Slagle, Pullman. Montana—Ward M. Sackett, Corvallis. Western Oregon—C. A. Park, Salem. Spokane and Hood River—Unrepresented.

Nearly a Mile of SECURITY Orchard Ladders

4220 FEET

Washington Dealer Stocks 429 SECURITIES for 1915 Trade

IN use in more than 4,500 Coast Orchards.

There are reasons for this ever-increasing demand.



SECURITY 8-foot Tripod

SECURITY Dealers in 96 Coast Fruit Centers.

If not in stock in your town the SECURITY Introductory Offer is open to you.

Write for details.

WENATCHEE PRODUCE CO., Inc.
ROSE BRAND
WENATCHEE DISTRICT FRUIT
ORCHARD AND GARDEN SUPPLIES
Phone: Corvallis, Hood, Wall, Wenatchee, and Astoria

WENATCHEE WASH. Oct. 20, 1914.

J. B. PATTERSON
82 Franklin Street
OAKLAND

Will order the following number for shipment (quantity filled):

100 - 2 Ft. Tripod Security Ladders	.....
100 - 10 "	.....
100 - 12 "	.....
100 - 14 "	.....

Ship to us at **Corvallis, Wash.**

100 - 2 Ft. Tripod Security Ladders	.....
100 - 10 "	.....
100 - 12 "	.....
100 - 14 "	.....

Yours very truly,
J. B. PATTERSON
AGENT

A postal brings you 1915 Illustrated booklet and the WHYS of Security Success

82 Franklin Street OAKLAND **J. B. PATTERSON** 517 Union Oil Bldg. LOS ANGELES

Oregon Nursery Company

ORENCO, OREGON

Extensive growers of all lines of Fruit, Nut and Shade Trees, Evergreens, Flowering Shrubs, Vines, Roses, etc. Introducers of the VROOMAN FRANQUETTE walnut, recognized as the best walnut. Our large complete stock consists of varieties suitable for every kind of climate.

Write us about your wants before buying.

Mr. Wilmer Sieg

The Hood River Apple Growers' Association, which is a continuation of the Hood River Apple Growers' Union, having associated with it the Davidson Fruit Company and the National Apple Company, has had a number of managers. The first manager was Mr. Joe Wilson in 1903. The next manager was Mr. E. H. Shepard, Editor of "Better Fruit," who served for several years. He was followed by Mr. Huxley, who is now connected with the Hood River Exchange. Mr. Huxley was followed by Mr. C. H. Sproat, an apple grower of Hood River. Then came the upheaval, when Hood River was split seven ways for Sunday, and several new organizations were formed, the Directors of the Hood River Apple Growers' Association decided to get someone outside of

the district, appointing a committee for this purpose. This committee made a very thorough search throughout United States and finally decided upon Mr. Wilmer Sieg of Milwaukee, Wis. Mr. Sieg came west and accepted the position in 1912. In 1913 the Hood River Apple Growers' Union was merged into the Hood River Apple Growers' Association, which marketed through the North Pacific Fruit Distributors. Mr. Sieg was taken over by the Distributors as one of the Sales-managers with an office in Hood River. In 1914 the Hood River Apple Growers' Association marketed through the Distributors and Mr. Sieg was moved to Portland, maintaining an office in that city under the employ of the Distributors, and in January, 1915, Mr. Sieg went East to look after the export business to Europe, to succeed Mr. Davidson, who had to

Avoid Mistakes in Pump Buying

**LET US SEND YOU THIS
FREE BOOK WHICH IS A SURE
GUIDE TO PUMP VALUES**

Most articles can be judged with fair accuracy at the time of purchase but some cannot, for instance pumps. Unless you have had previous experience with a brand or make of pump, you don't know until you have the pump in service for some time whether it is worth the money you paid for it. We want to help you to full value by sending you this pocket Myers Pump Catalog. Be guided by the little booklet, and you will make no mistakes in pump buying. It shows in a brief way the big Myers line of

The Myers Patented Glass Valve Seat
If the Myers Pumps had no other advantage than the Myers Patented Glass Valve Seat they would be the best pumps in the world. This glass seat keeps the lubricating oil from coming in contact with the pump parts. Other Myers advantages, big capacity, easy operation and extra long life.

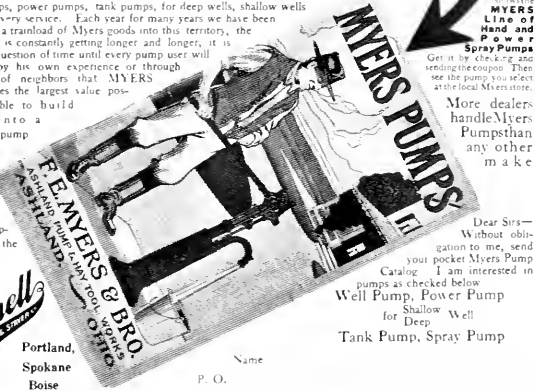
This booklet also shows the **MYERS Line of Hand and Power Spray Pumps**. Get it by checking and sending the coupon. Then see the pump you select at the local Myers store.

well pumps, power pumps, tank pumps, for deep wells, shallow wells and for every service. Each year for many years we have been shipping a trainload of Myers goods into this territory, the trainload is constantly getting longer and longer, it is only a question of time until every pump user will know by his own experience or through word of neighbors that MYERS signifies the largest value possible to build into a pump.

We handle the largest and best line of pumping and water supply goods on the Pacific Coast



Portland, Spokane, Boise



More dealers handle Myers Pumps than any other make

Dear Sirs— Without obligation to me, send your pocket Myers Pump Catalog. I am interested in pumps as checked below
Well Pump, Power Pump for Shallow Well, Tank Pump, Spray Pump

Name _____
P. O. _____

Mulconroy Flexible Metallic Spray Hose

**Can't Kink, Twist, Burst, Collapse or Chafe
LIGHT — STRONG — FLEXIBLE**

Answers all requirements for all kinds of spraying. 1000 lbs. pressure will not burst it. Weighs 6 oz. to the foot, and will coil in a 3-inch circle. Tube specially compounded to stand spraying solutions. **Hose cannot kink**, and therefore delivers full capacity at all times. Outside protected against knocks, dragging over rough surfaces, and sharp turns.



Trial order will show satisfaction and economy.

Manufactured solely by
PHILADELPHIA

MULCONROY COMPANY, Inc.

Established 1887
NEW YORK

AGENTS WANTED

return to look after his interests here. The Board of Directors of the Hood River Apple Growers' Association, after due consideration and deliberation, selected Mr. Sieg as Salesmanager for the coming year, which position he now occupies, with an office in Hood River. Mr. Sieg has devoted his entire life to the fruit and produce business and has built up a reputation that is equal to the best that is a record of achievement anyone could well be proud of, and has a host of friends. There is probably no other salesman connected with any of the Associations who has a wider acquaintance or

warmer friendship with the dealers all over United States than Mr. Wilmer Sieg. Mr. Sieg fell in love with the West, particularly Hood River, and having worked energetically and devotedly for the Hood River district, felt it his duty to accept the position with the Hood River Apple Growers' Association, although he was offered several other positions at higher salary in the East. He says, he has fallen in love with the West, which he intends to make his future home. It is his pleasure to assure the growers that he will give his best ability and most earnest service in marketing

their fruits to the best possible advantage, and in doing this, other districts can feel assured that he will give them a clean, honest competition.

Mr. F. E. Myers, of the firm of F. E. Myers & Bros., manufacturers of spray pumps, force pumps, hay tools and various other farming implements, of Ashland, Ohio, has just been appointed a member of the Jury of Awards at the Panama-Pacific International Exposition. This is very much of an honor and one we understand was entirely unsolicited by Mr. Myers. Mr. Myers will undoubtedly render efficient service in this capacity, and it may be said that it is a good plan on the part of the Exposition people to appoint Eastern people to various positions, because it will give them a splendid opportunity to familiarize themselves with the West and its wonderful opportunities.

A Caterpillar in Actual Service

The following extract from a recent letter regarding the use of a tractor in orchard work speaks for itself:

"We have had a Baby Holt Caterpillar Tractor in the 600-acre Baker-Langdon Orchard, adjoining Walla Walla, for the past three seasons. This is an 18-horsepower (drawbar) engine. Our land lies practically level, the soil is a rich bottom loam and sub-irrigated. We find by using this tractor, and attaching to it a 13-foot disc weighted down to force same 5 or 6 inches into the ground, and then attaching behind this disc a 13-foot spring-tooth harrow, we are able to keep a beautiful mulch on our ground without the necessity of plowing more often than once in two or three years. Later in the season, after we have completely done away with all weeds that have grown through the winter and early spring in this rich soil, we drop off the spring tooth and in its stead attach a common peg-tooth harrow, or harrows of the same width, which leaves the surface of the soil smoother than when the spring tooth is used. This machine this spring has covered from 30 to 40 acres per day, doing much better work than any three four-horse teams could possibly do; by that I mean no four-horse team could pull a disc and spring tooth thrown into the ground to the depth we put them and get away with 10 or 12 acres per day; indeed I am quite confident we do a better job with the tractor than four four or six-horse teams could do. On the tractor we have a driver, who is a young man with but little previous experience, who handles the machine beautifully; in addition we have one man who follows behind the spring tooth when running in weeds, to clean them when required and shift them around any tight place at the end of tree rows. This, however, is an exception rather than the rule, for the driver by passing or skipping one row makes a very certain turn. This helper often spells the driver and thereby becomes



**Watch
for other
illustrations**

PALMER FRUIT GRADER

Grades three grades at a time:
First Grade 9 sizes
Second Grade 6 sizes
**Third Grade 3 sizes for
boxes and any less number of
sizes desired for barrels.**

Complete with sorting table occupies a floor space of 5x18 feet. Grades over square holes which expands from 1½ to 4 inches square in traveling 11 feet.

Discharges the fruit into boxes or barrels without bruising.

Capacity 275,000 apples in ten hours. Working at half capacity will handle about a car and a half daily.

Box packing can be done direct from the machine or preferably on separate tables, giving the grower a chance to work his packers on the particular sizes and grades he wishes packed first.

Write or wire for catalogue and prices.

Palmer Bucket Co.
HOOD RIVER, OREGON

posted on the machine and capable of handling it if necessary. On an average we use about 28 gallons of distillate per day, and about 2 gallons of lubricating oil, worth 53 cents per gallon. Of course there is some wear and tear on the machine, much depending on the operator, but properly treated, I believe we reduce our cost of cultivation about 50 per cent, to say nothing of the satisfaction in doing the work well. We operate about three to four months in a season, all cultivating ceasing in September to enable the trees to become dormant when the proper season arrives for them to do so. There are probably no larger or more thrifty apple trees in the world, for their age, than our five-year-old trees.—Yours very sincerely, Baker-Langdon Orchard, by J. W. Langdon, Manager.”

The Peach-Twig Borer

The peach-twig borer has become one of our most destructive pests to the peach trees in Colorado. It is also one of the insects that is controlled with comparative ease if the proper remedies are applied at the correct time. We have been most successful in our experiments for the control of this pest when we have used either the ordinary home-made lime-sulphur spray or any reliable commercial lime-sulphur spray in the proportion of one gallon of the commercial article to each nine gallons of water. We have also had very good success in the control of this insect by spraying with

arsenate of lead in the proportion of six pounds of the paste to each one hundred gallons of water. Whichever of these insecticides is used, the application should be made a few days before the blossom buds begin to open enough to show the pink color.

The second brood of worms of this insect cause what is commonly called gummy peaches, although gummy peaches are very often due to other causes, so that the peach borer should not be blamed with the exudation of gum upon the fruit unless the burrow of the little worm can be found opening at the point where the gum exudes. After the peach borers have hatched and begun their work of killing the new growth, if the attack is at all serious, considerable benefit can be derived by promptly cutting off all infested new growths and burning them, or otherwise destroying the borers.—C. P. Gillette, Colorado Agricultural College, Ft. Collins.

Fighting Leaf Curl in New York State

The New York State College of Agriculture has issued the following circular regarding the dangers from peach leaf curl: “The three important factors to consider in the control of the disease, are time of application, thoroughness of application, and material applied. The application should be made before the buds begin to open, because at this time, under favorable weather conditions, the infection takes place. After this has

occurred subsequent applications to prevent the disease this year are useless. Select the first bright warm day for the application. Many persons sprayed too late last year.

“The spray material used should come in contact with every bud, for the fungus spores are sticking to the buds and these must be hit by the spray mixture in order to have perfect control. A fine spray under high pressure is most satisfactory. Some failures of last year were due to too much hurry in the application.

“The disease is readily controlled by each of several fungicides. Lime-sulphur solution (testing 32 degrees Baume) diluted with water in the proportion of one part solution to eight parts of water, should be used when both San Jose scale and leaf curl are to be controlled. When scale is not present, the lime-sulphur solution at a dilution of one part lime sulphur to 15 parts of water, or Bordeaux mixture in the proportion of five pounds copper sulphate, five pounds of lime, and 50 gallons of water. Since thorough spraying will absolutely control leaf curl, every peach grower should take steps to prevent its destructiveness this year.”

The Washington State Horticultural Association has just issued the proceedings of the Eleventh Annual Meeting of the Washington State Horticultural Association held at Wenatchee December 9-10-11, 1911.

The oil that's all oil
—all lubrication

ZEROLENE

the Standard Oil for Motor Cars

Dealers everywhere, and at all our agencies or Service Stations. Or ask us about delivery in bulk.

Standard Oil Co.
(California)
Portland



The Hardie Mfg. Co.

ANNOUNCES A NEW DEPARTMENT IN
ITS LINE OF

Orchard Supplies

If you are in need of a Lid Press, Nail Strippers, Ladders, Picking Bag, Picking Pail, Pruners, or any of the many devices used in picking and packing fruit, you will need our new catalog — which will sent on request.

The Hardie Mfg. Co.

49 North Front Street Portland, Oregon

MR. G. W. COBURN was born at Seneca, Kansas, in 1879, and is now 36 years of age. Six years later he moved to Whitewater, Wisconsin, where he attended the public school, graduating from high school in 1879, afterwards attending the Whitewater Normal School, earning his money working alternately one year and teaching school the next year. After graduating from the Whitewater Normal School he attended the University of Wisconsin, taking a special course in the School of Commerce. Mr. Coburn spent two years in the United States Census Office in the Department of Agriculture, having charge as chief of a section, which gave him a splendid opportunity to obtain a very thorough knowledge of agricultural work in different parts of the United States. During this period of service he spent much of his time becoming well acquainted in fruit sections in the Vir-

ginias and Tennessee. During the years 1903-4 he was connected with Long-Critchfield Corporation of Chicago, one of the largest agricultural advertising agencies in the United States. Ten years ago he moved to Spokane, the next year going to Wenatchee, where for one year he was connected with the commercial department as teacher in the high school; for two years and a half he was in the employ of the First National Bank of Wenatchee, then going to Klickitat County, on the Columbia River. The next year and a half he was employed in Klickitat County, spending part of his time in Hood River, Oregon, but instead of locating permanently as he originally intended, upon being offered the secretaryship of the Commercial Club of Wenatchee he returned to that city and for two years occupied the position of secretary and general manager. During the past two years Mr. Coburn has

been manager of the Wenatchee Valley Fruit Growers' Association, the oldest association in Wenatchee district. For several years Mr. W. T. Clark has been president of the Wenatchee Fruit Growers' Association. Mr. Coburn, as manager of the Wenatchee Valley Fruit Growers' Association, has spent much of his time in the East, where he had a splendid opportunity to inspect fruit on arrival and to study marketing conditions, having visited each one of the large marketing centers in the Middle West and East during the selling season. Mr. Coburn believes in co-operation between the



MR. G. W. COBURN
Manager of the Wenatchee Valley Fruit
Growers' Association

grower and the selling concern, and he advocated extending this co-operation from the growers' selling organization to the Eastern dealers. He believes the Eastern dealer should receive as great a per cent of profit on box apples as he receives on barrel apples, and that co-operation must extend along the line from the grower clear up to the consumer; and furthermore, he believes that if we expect people to sell our apples they must have an opportunity to make a fair profit and an equal profit with any other similar commodity.

Spokane Banks Prepare to Make Loan

Spokane, which is the big financial centre of the Inland Empire, has taken active steps through its banks and clearing house to perfect a plan to finance the fruit growers during the coming season. Plans are well under way which will probably culminate in the banks of Spokane being in a position to loan the fruit growers \$500,000 for the coming season.

YOU CAN EARN \$50.00 PER DAY

with the
Gearless Improved Standard
Well Drilling Machine.
Drills through any formation.
Five years ahead of any other.
Has record of drilling 130 feet
and driving casing in 9 hours.
Another record where 70 feet was drilled on 2 3/4 gal. distillate
at 9c per gal. One man can operate. Electrically equipped for
mining shafts, fishing job, engine removal. Catalogue W. B.
REIERSON MACHINERY CO., Manfrs. Portland, Ore.

Northwest Grading Rules

Continued from page 16

all the way through the box. Boxes should be marked according to the number of rows across the end, as in nine row, ten row and eleven row. In making the box, top should be nailed on and cleated, bottom left off; box should be placed before packer with open bottom up. Carefully pack the bottom tier, which will be the top when pack is completed. In packing the first tier care should be taken by the packer to place the rounding side of the cherry next to the board. Use only the square pack, never a broken one. Both ends of box should be packed alike. Allow no stems to stick out of the corners, which will be the top of the box to the packer. See that the corners are well filled. After the box is nailed up there should be no stems showing. Edges of box where cherries are exposed should present a neat appearance. Nailers should be very careful when lidding up not to cut or mash any of the fruit; all such cherries should be removed and replaced with good fruit.

20-lb. or 25-lb. Boxes.—Follow same instructions when packing either 20-lb. or 25-lb. boxes as those given for 10-lb. boxes.

Lug Boxes.—We also recommend the use of a lug box with a center partition for cherries to be shipped to market, not exceeding over 200 miles from point of shipment. These cherries are placed loose in the box with no facing.

The dimensions of box are as follows: Sides, 18x5 $\frac{3}{4}$ inches; ends, 14x5 $\frac{1}{2}$ inches; tops and bottoms, 18x7 inches. The box to contain thirty pounds net weight of cherries.

Strawberry Crates.—It is recommended that for all cherries that are packed in strawberry crates use the

pint hallock, packed 24 to the crate. Where strawberry crates of 24-hallock carriers are used for packing cherries, hallocks should be well filled, shaken down and topped or faced so they will be rounding full. There should be no stems showing. Use square pack.

BERRIES

Of all Northern fruit, berries are the most delicate and highly perishable. Don't try to market them fresh unless you have concluded to exercise extreme care in every detail in preparing the fruit for market. For strawberries use deep standard pint cups, 24 in a crate. Use only dry crates and cups. For other berries use shallow standard pint cups, 24 in a crate where possible. Deep pints will answer, but there is more danger of loss from bad condition on arrival if deep cups are used.

As the fruit is packed to eat, the appearance of the package is important. Keep your crates clean and bright. When handling the crate after being filled, set them down gently; don't drop them and don't allow your help to drop them. After packing deliver berries promptly on wagons with easy springs.

Get the fruit under refrigeration at the earliest possible moment after picking. Pre-cool the cars as soon as possible after loading if a pre-cooling plant is available, otherwise use from 50 to 100 pounds of stock salt on the ice in each end of the cars after loading. Leave the vents open for first 100 miles when possible. Don't cool berries in a refrigerator or cold-storage room and then expose them to a warm temperature even for a short time, as the berries will "sweat" and mold. When you do cool them off keep the temperature uniform. It is best to cool them gradually in a cool, natural temperature in pure air.

Pick often enough to prevent berries from getting overripe. Daily picking, in favorable ripening weather, is the only safe rule.

STRAWBERRIES

Extra Fancy.—This grade shall consist of all perfect berries, Clark's Seedling variety, picked at the proper stage of ripening for shipping. All berries must show at least three-fourths red. Nothing smaller than 5 $\frac{1}{2}$ x5 $\frac{1}{2}$ (meaning berries not less than three-quarters of an inch in diameter) and no stemless berries in this grade. Pack each cup firmly, without bruising the fruit, so that there will be no settling of the berries. Face the top of the box with berries 16 (4x1) or 20 (4 $\frac{1}{2}$ x5) or 25 (5x5). Fill the cups so that the top layer will show three-eighths of an inch above the top of the cup.

Picking.—Berries must not be picked while there is moisture on the vines. Berries must be picked riper in cool weather than in warm. Pickers must not be allowed to hold several berries in the hand at the same time. Pick all berries with stems a quarter of an inch long. Berries pulled off the stem decay very quickly. Do not pick green ber-

GALLOWAY
N-6
duty engines. Engine book free. Wm. Galloway Co. Box 1100

ENGINE PRICES LOWER
You get customers testify to quality of Galloway built goods. Our engines made in our factories. Modern design. Built for long, hard continuous work. Maintenance. Don't buy until you investigate these heavy weight, long stroke, large bore, low speed, heavy duty engines. **\$17.95** 172 H.P.

9873-7750-3950-3475-2675

Monitor Engine Now \$60!

The greatest, most powerful Farm Engine ever built to sell at such a price. Can be attached to any pump, furnishing abundance of running water for every purpose. Also runs cream separator, feed mill, washing machine, etc. The "Monitor" costs little to operate. Fewer parts than any other engine. Nothing to get out of order. Sold under absolute guarantee. Price - \$60.

Send your name on a postcard for full particulars. Do it NOW.

R. M. Wade & Co.
144 Hawthorne Ave.
Portland, Ore.

Fruit Growers Profit by Dairying

Hundreds of fruit growers are turning to dairying as the most profitable side line. Oregon's dairy products last year exceeded \$18,000,000.00.

Even if you have only a few cows, our Service Department can give you valuable ideas and assistance. We carry the most complete line of Dairy Supplies in the Northwest—Sole Oregon agents for

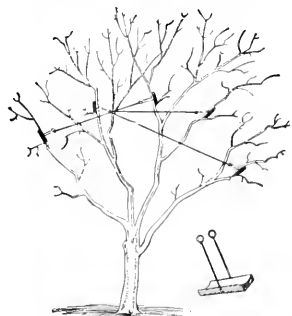
- Simplex Separators
- Buh Milk Cans
- Entire Simplex Line
- Papek Ensilage Cutters

Inspect our modern dairy equipment.

Free Catalogs gladly sent upon request.

MONROE & CRUSELL
Distributors of **The Simplex Line**
DAIRY EQUIPMENT AND OTHER AGRICULTURAL MACHINERY AND SUPPLIES
143 FIRST STREET, PORTLAND, OREGON

Tree Supports



WRITE FOR FOLDER

Thompson Mfg. Co.

Eight and Santa Fe Ave.

Los Angeles, Cal.

ries; this is reckless waste. Do not step nor kneel on the vines or green berries.

Packing.—Study carefully specifications. Do not allow filled carriers to stand in the sun or wind; the wind is more damaging than the sun. The strawberry is probably our most delicate, most perishable fruit and must be

YAKIMA FRUIT SELLERS

North Yakima, Washington

A Central Selling Agency for Yakima

EXCLUSIVE DISTRIBUTORS FOR

Yakima County Horticultural Union

Yakima Fruit Growers' Exchange

Richey & Gilbert Company

Our organizations handled 2,500 carloads of Yakima Fruit last season. Hundreds of growers have joined our movement and we already have under contract a much larger proportion of Yakima tonnage than ever before. Additional tonnage is coming to us daily. We have a large proportion of the fruit in the early districts—therefore we can load the early assorted cars—money-makers for the trade and the growers.

WRITE OR WIRE US IN SEASON

H. M. GILBERT, General Manager

FRED EBERLE, Asst. Manager

Phosphorus Makes Fruit

Ground Phosphate Rock is the most economical and profitable and only natural form of Phosphorus to use in systems of Permanent Horticulture and Agriculture, and when properly applied restores Fertility to worn out soils and Maintains and Increases the Fertility of good soils.

Write for our literature.

United States Phosphate Co.

405 Marsh-Strong Bldg., LOS ANGELES, CAL.

Our mines are located in Utah, Idaho and Wyoming.

handled with the best of care from the time of picking until it reaches the consumer. Face each box with berries as uniform in size as possible. See that not more than 15 per cent of the berries under the facing are not smaller than the facing or in any way inferior. Berries brought in from the field by the picker must be emptied out by the packer on a sieve constructed of cloth to allow the sand and dust to fall away from them.

Hauling.—Haul only on wagons with good springs and keep the fruit covered with canvas to keep out the dust.

Marking of Crates.—The state law requires the grower's name and location where berries are grown on each and every case of fruit placed on the market. In the upper left-hand corner place the grower's name and address, and in the upper right-hand corner mark the words "Extra Fancy" on all berries of this grade.

RASPBERRIES, LOGANBERRIES, BLACKBERRIES

Pick raspberries and loganberries when a light pink and firm. Blackberries when dark red or black, but firm. Berries that were overlooked on previous picking which are overripe must be put in a separate box and must be used for local consumption or canning or drying.

Don't rehandle raspberries, loganberries or blackberries to sort them, as they are too delicate. The grading must be done by the pickers. The berries are sure to settle unless the cups are properly filled. See that the berries are settled, the corners of the cups are rounded up about five-eighths of an inch above the top before putting the cups into the crate.

Have your crate made five-eighths of an inch higher than the top of the upper layer of cups. If the top of the crate is too low, put a cleat under the cover. Don't mash the berries when putting the cover on. Mashing the tops of berries starts mold and seriously injures the appearance and quality of the berries when they reach the market.

If you do not have enough product to load cars daily, try and arrange with a neighboring district to join in loading cars.

If on account of bad weather or a shortage of help you are unable to pick your berries at the proper time, make the next picking clean and turn that picking into the cannery or dryer. This will give you a clean start for picking for shipment. A few overripe berries will start mold and ruin a whole box or an entire crate.

The range of markets extends to Vancouver, B. C., Winnipeg, Duluth, Minneapolis, Chicago, Omaha and Kansas City, and the fruit must be packed and loaded so it will reach these markets in good condition. By complying with these instructions a standard will be established whereby buyers can safely order cars of berries from us at an f.o.b. price which will otherwise be impossible. All kinds of picnics or gatherings of people engaged in harvesting season should be discouraged.

LOW Round Trip FARES

to the

California Expositions

and

To the Principal **EAST**
Cities of the

via the

Columbia River Route

UNION PACIFIC SYSTEM

or you may add an "EXPOSITIONS" visit to your Eastern trip at small additional cost.

Tickets on sale daily to September 30; going and return limit, October 31, 1915.

Fares, reservations and full information upon application to any agent of the Union Pacific System (O-W, R. & N. Co.) or upon request to the

GENERAL PASSENGER AGENT
PORTLAND, OREGON





Trade Mark

Buy "Corona Dry"

One pound of "Corona Dry" will do the work of three pounds of Paste Arsenate and do it better

Imitated but not duplicated

But economy is not everything. Efficiency is more important. What would it mean to you to have a spray mixture of standard strength and be absolutely sure that all of one spraying or of many sprayings was absolutely the same strength? Evaporation, difficulty of perfect mixing, make this impossible with a paste arsenate. You can have a standard efficiency if you use *Corona Dry*.

Largest and most progressive growers have rendered the verdict

A large practical usage in every section of the country has proved that "Corona Dry" is unequalled in efficiency or as "easy mixing." It does not freeze, dry out or cake; always retains its original strength. A perfect mixture, a perfect standard of unvarying strength is assured with

CORONA DRY

Arsenate of Lead

Patented June 30, 1913

The "Standard" for Convenience, Economy, Efficiency

Quickly and easily mixed. No working up—no straining needed—no sediment. No lumps. No waste. Never clogs spray nozzle. Highest per cent. of actual killing power. Absolutely safe, will not burn. Sold in net weight packages: 200 lbs., 100 lbs., 50 lbs., 25 lbs., 5 lbs., 1 lb. No shrinkage, seepage, evaporation. Every package contains actual net weight of "Corona Dry" paid for. Remember, "Corona Dry" means no guesswork, but a standardized spray in which the mixture is always the same strength and efficiency

Write for Booklet. Ask for Corona "Tree Insurance" Policy. Address

CORONA CHEMICAL CO., Dept. E, Milwaukee, Wisconsin

MANUFACTURERS OF

Insecticides and Fungicides, Arsenate of Lead, Lime and Sulphur, 'Bordeaux Mixture, Paris Green, Etc.

Distributing Agents: Boston, Mass.—Joseph Breck & Sons Corporation
Philadelphia, Pa.—Pittsburg Plate Glass Co.

Memphis, Tenn.—Hessig-Ellis Drug Co.
New Orleans, La.—Finlay-Dicks & Co.

Spokane, Wash.—Spokane Seed Co.
Portland, Ore.—Portland Seed Co.

Northwestern Sales Agents **Portland Seed Co., Portland, Oregon** Catalogues and prices on request

Description of An Evaporator

By D. W. Seely, Sodus Point, New York.

THIS article is written for the benefit of orchardists, fruitgrowers and others who may be interested in evaporated apples. The time is here when every large fruitgrower or cooperative orchard company or small grower should have an evaporator, vinegar plant or some means of disposing of the lower grades of apples which now go to waste in many of the apple-growing sections of the United States and Canada, which if evaporated would add materially to the net profits of the orchard.

For the benefit of people who have never seen an evaporator, large or small, I am going to describe what you might call a unit-size dryer; by this I mean one of from 50 to 100 bushels daily capacity; and it is this size that makes the finest stock, and there are hundreds of them in this county (Wayne) and in the vicinity of Sodus, New York, one can see a dozen in about any direction you may look, and here is where all the best grades of evaporated stock is made and it is these small dryers that make it. They are mostly frame buildings two stories high, and we will say 16-foot posts and maybe 16x32 or 18x36, yet they may

vary in height, also in other dimensions, and in fact may be some old building converted over into a dryer, so do not think you have got to follow out these dimensions, as there is no fixed rule to go by in building, operating or equipping a dryer; a good liberal dose of common sense is the prime factor in the business. I am describing one that was built last fall and is a fair sample of one where it is built new throughout.

The building is 16x32, set on cedar posts set well in the ground, the sill being about a foot above the ground and the drying or kiln floor, as we call it, should be about 11 feet from the ground; the joists should be 2x8 and 16-inch centers; the kiln flooring is maple; they are cut triangular about one and a quarter inches on an edge with one edge cut off so it is about a half-inch wide so it will not roll over when nailed to joists, and they should be laid about a quarter of an inch apart. Cost of this flooring is about 5 cents per foot; all prices are based on New York prices. Now comes the furnace used in drying the fruit. Never buy a small furnace, as it is better to have one twice your capacity than one

you have got to force all the time to get the heat; it will consume enough more fuel in a season to more than pay the difference in price, and besides it is no time to get stuck when the drying season is here and you have to lay off help to get caught up with the drying. Use, if possible, a steel-dome furnace—the larger the better. Avoid a heavy cast-iron dome furnace, as it consumes too much fuel, and the castings being heavy it is hard to get the heat through them; while sheet steel, being thin, gives off the heat very fast. This furnace should have two holes in the top, nine or ten inches in diameter, and should be connected to the chimney with three or four coils of pipe of same size running horizontally under the kiln floor and distributed about an even distance apart under the kiln floor and from one and a half to three feet below it. Both smoke pipes should join in a T at the chimney and have a damper on each side. Chimney in this case is set on the inside of the work room, but is flush with the inside of the furnace room. This chimney answers for draft for the bleacher and stove, if one is required. Chimney should not be less than 12 inches square inside and

TIE UP
YOUR LABEL CONTRACTS WITH US WE KNOW HOW

TRAUNG LABELS ATTRACT ATTENTION

We are especially qualified to design and execute attention compelling LABELS that are necessary to give the proper selling power to your goods.

HIGHEST QUALITY - PROMPT SERVICE - LOWEST PRICES
SAMPLES AND PRICES UPON APPLICATION

"SATISFY THE CUSTOMER" Is Our Slogan

TRAUNG LABEL & LITHOGRAPH CO.
SAN FRANCISCO, CAL. BATTERY & GREEN STS. PORTLAND, ORE. PARK AND STARK STS.

Send for our 1915 Art Calendar. Free on Application

ENCYCLOPEDIA OF PRACTICAL HORTICULTURE JUST OFF THE PRESS

The only complete, thorough manual of fruit growing published—covering every feature—planting, growing, cultivating, spraying, diseases, harvesting, etc.—as used and approved by Northwest fruit growers. Contains valuable statistics. All reading matter arranged conveniently for reference and indexed.

It tells how to do the things that every fruit grower must do who is growing fruit as a business.

THREE LARGE VOLUMES HANDSOMELY BOUND
Write for circulars containing full descriptive matter and prices.

407 Miller Building
ENCYCLOPEDIA OF PRACTICAL HORTICULTURE, North Yakima, Wash.

Western Pine Box Sales Co. **Wanted SALESMEN SALESWOMEN**

HIGH GRADE FRUIT BOXES
APPLE, PEAR AND PEACH BOXES
Fruit and Vegetable Crates
GOOD SERVICE—Write us
SPokane, Wash.

Our representatives are earning \$50 to \$150 per week. Write quick for sample and territory. It's selling like wild-fire. Everybody's a Customer

HYTEE'S FACTORIES
199 Majestic Building **INDIANAPOLIS, INDIANA**

Paste for Labeling—"Palo Alto" Paste Powder

added to cold water, instantly makes a beautiful, smooth, white paste. Ready for immediate use at a cost of 10 cents a gallon. No labor. No muss. No spoiled paste.

PASTE SPECIALISTS
Robinson Chemical Works
349-351 Eighth Street
San Francisco, California

"PERFECT" Cement Coated Nails

OUR PRODUCTS ARE OF SUPERIOR QUALITY AND GUARANTEED TO GIVE SATISFACTION.
PRICE and QUALITY always right.

PITTSBURGH STEEL COMPANY, Pittsburgh, Pa.
A. C. RULOFSON CO.
"The Cement Coated Nail People"
Monadnock Building, SAN FRANCISCO, CALIFORNIA
PACIFIC COAST SALES MANAGERS

may start from the ground or be built on a bracket. Now comes the cold-air drafts, which are placed in the four sides of the furnace room and as near the ground as possible; this is to give the furnace air as well as allowing the moisture to pass off from the drying apples. The area of the four holes should be about 10 per cent of the area of the kiln floor and the area of the ventilator in the roof at least 15 per cent of floor area. There is no fixed shape for a ventilator so long as you get the opening large enough. Cost of large furnace about \$50, and cost of three coils of ten-inch pipe is \$30, made from best grade refined iron.

Understand this plant is a hand-power plant throughout and will not cost near as much as a power plant of same capacity. This plant ran about eighty days last fall and dried about 6,500 bushels. It is equipped with two hand-power machines that costs \$10 or \$11 each, and a hand-feed rotary slicer that costs about \$15. Three women were employed to trim the apples; one machine run full time and the other about half time, by the owner, and balance of his time was taken up with other work about the dryer, such as turning apples on kiln, getting in peeling apples, keeping floor clean as possible, slicing the bleached apples and keeping close watch of the furnaces. About 60 bushels can be pared on one of these machines and two average good trimmers will trim them. The third woman in this case trims the apples from the second machine; therefore I might call it a machine and a half dryer and run out about 80 or 85 bushels per day. Now these women were paid \$1 for nine hours' work and the man or boy who peeled steady about \$1.75 or \$2 per day. This is about all the help required when apples are delivered to the dryer and no night man is employed, so you see he has a help expense of \$5, not figuring his time, which we will figure at \$3, as he puts in long hours. This makes \$8 without fuel cost and machine repairs, which is not much in this case; but about \$2 more is about right. That will bring the drying price per bushel about 12 or 13 cents. Now most of these apples were bought at 35 or 40 cents per hundred pounds, delivered. Now it has cost about 33 cents to buy the stock and dry it; the average selling price of this fruit last fall, which was not a good year for the dry-house man by any means, was 6 1/4 cents per pound, and as they were mostly Baldwins, I think he made them go 7 pounds per bushel, which is really heavier than they ought to be made; that makes 47 cents for the white fruit. Now there will be about four or five pounds of waste, which sold for a cent a pound, which is rather cheap. Therefore you can see his bushel of apples bring in about 57 cents, less cost of production, giving the dryer 24 cents profit per bushel, but it will take experienced help to do this amount daily. Probably one-half this would be fair for all new beginners, but in a week or

for
power

Red



Crown

the
Gasoline
of
Quality

Refinery gaso-
line—every drop.
Not a mixture.
Keeps your en-
gine "steady."
Dealers every-
where.

**Standard Oil
Company**
(California)
Portland

Orchard Yarn

Progressive orchardists, these right down to the minute in methods of protecting heavy laden fruit trees, are agreed that tying branches with Orchard Yarn is the modern way of supporting orchard trees. It is not expensive, is easily done, and the time to do it is when trimming. The spurs are then tougher, less easily broken off than later, leaves are not in the way and all parts of the tree can be seen. Saving but a small percentage of loss from being broken down will pay for the expense of tying an entire orchard. One-ply Tarred Manila Yarn will run about 200 feet per pound. Two-ply will run from 90 to 100 feet per pound. Put up in 5-pound balls or on 10-pound spools. In 5-pound balls the yarn pulls from the inside and is more easily handled.

Sold by all merchants handling orchard supplies.

Manufactured by

The Portland Cordage Company
PORTLAND, OREGON

W. van Diem

Lange Franken Straat 45, 47, 49, 51, 61

ROTTERDAM, HOLLAND

European Receivers of American Fruits

Eldest and First-Class
House in this Branch

Cable Address: W. Vandiem
A B C Code used; 5th Edition

Our Specialties are

Apples, Pears, Navel Oranges

so you will come nearer the amount mentioned. Many dried apples sold as low as 4¼ cents, but these were what we grade as choice; and some grades brought more, such as picked fruit without the barrel fruit removed.

Now, describing the work room, which is on a level with the kiln floor and is the same size (but ought to be larger). The paring table is about three feet wide and five or six long, and is set upon a platform about eighteen inches high to give a pitch sufficient to allow the trimmed fruit to run down in the bleacher, which is set at the end of the trimming table and is connected by a spout which runs down through the table. In this case the bleacher is nothing more or less than a box about five feet square and about as high, with a tight vertical partition in the middle and a slat floor made of the same kiln slats, and the lower edge of the floor is only high enough to let a crate under when you want to draw the apples out after they are bleached, which is about 45 to 60 minutes, depending somewhat on the maturity of the apples. In fact you should not dry any fruit that is not matured, as it hurts the market and is liable to sour, no matter how dry it is made. The pitch of this bottom is about the same as the spout in the table. The brimstone is placed under the slat floor, using first one side of the bleacher, then the other. While you are filling one side, slice and put on the kiln floor as fast as sliced if the kiln floor is empty; if not leave them in crates until your floor is empty. Do not slice and leave them for half a day before putting them on the kiln, as they will leach and not make as good fruit. The draft pipes to this bleacher are connected to the chimney, and each one should be a six or seven-inch pipe, and there should be two of them, as this is virtually two bleachers in one.

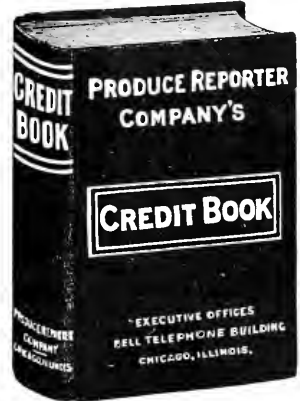
Any metal basin of pint capacity may be used for a bleach cup and you must be careful of fire, as here is where many fires start from. There would be about fifty bushels of slices from the day's work. These would cover three-fourths of the floor four or five inches deep. They should be handled carefully so as not to break any of the perfect slices. They should be as level as you can make them, and if you have your kiln piped right they ought to dry pretty evenly, but if it doesn't you will have to load heavy or light in some spots, as the case may be, and you will soon learn how to gauge your spreading on the kiln. The balance of the floor is used for waste, which consists of skins, cores and trimmings, and they should be well shook up with a fork so as to lay as loose as possible to permit of free circulation. Never step on any white stock or waste while drying. The floor should be washed at least once a week and oftener if it needs it. It should have two or three coats of raw linseed oil before you do any drying on it, and hot tallow is used in greasing it after that. Always keep a clean pair of rubbers near the door

Associations! —Shippers!

This Credit Book will bring you
**More Profits—
—Less Worry**

A Directory of
"Business Reputations"

200,000 Ratings of Receivers, Brokers,
Jobbers, Shippers, Etc.



NOW IS THE TIME TO ASK YOURSELF

"How Am I Going to Market My Crop Most Profitably?"

You can satisfactorily answer this important question with the aid of PRODUCE REPORTER SERVICE.

The CREDIT BOOK guides you to reliable, responsible buyers—points out the "tricky" and "unfair" dealers—gives the summarized experiences of other shippers with every firm in every market. It is used today by the great majority of successful fruit and produce handlers.

Our Inspecting and Adjusting Department looks after rejected or complained of shipments—Adjusters located in all principal markets. Collections, Litigations, Railroad Claims promptly, efficiently handled for members.

PRODUCE REPORTER SERVICE operates on the correct co-operative principle for the mutual benefit and protection of members—it enables the smallest shipper to profitably compete with the largest "Distributor." It affords the only practical solution of your problem—write us today for full information—you incur no obligation whatever in doing so.

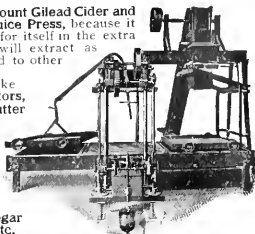
Produce Reporter Co.

NEW YORK CHICAGO
Fruit Trade Building Bell Telephone Building

BIG PROFITS in the Cider Business

with a Mount Gilead Cider and Grape Juice Press, because it will pay for itself in the extra juice it will extract as compared to other makes.

We make Evaporators, Apple Butter Cookers, Vinegar Generators, Spraying Outfits, Cider and Vinegar Filters, etc.



Send for Catalog

THE HYDRAULIC PRESS MFG. CO.
60 Lincoln Avenue Mount Gilead, Ohio
Pacific Coast Representatives:
BERGER & CARTER CO., 17th & Mississippi Sts.
San Francisco, California

SEE CALIFORNIA AND HER TWO GREAT EXPOSITIONS NOW

California is this year holding two great universal Expositions, one at San Francisco and the other at San Diego, in celebration of the completion of the Panama Canal and the joining of the Atlantic and Pacific Oceans. These two Expositions represent an expenditure exceeding one hundred million dollars. To supply the demand for reliable and authentic information on these Expositions and California, we have published two beautiful books; one on San Francisco, the Exposition and Northern California; the other on Los Angeles, San Diego, the Exposition and Southern California; also a lithographed view of San Francisco in colors (size 30x45 inches), a picture of the rebuilt city, including the Exposition. Each book is 6x9 inches, contains nearly 200 pages and many beautiful illustrations.

These two books and large bird's-eye view give a comprehensive, honest history and description of the state, her principal cities, resources and her two great Expositions. Sent prepaid for 35 cents each or all three for a one dollar bill, money order, draft or check. Order now, addressing

North American Press Association,
Publishers,
1420 Hearst Building, San Francisco.



Ask for Catalogue No. 5

and put them on when working in the kiln in any way.

Now we will suppose the day's work is done and apples are on the kiln and you have a good fire, that is, your furnace is red hot and your cold-air drafts about half open. Keep it this way until you wish to retire, or about nine o'clock, when you can open the rest of the cold air and check the furnace for the night; and it would be best for you to stay up a few nights until you learn how to regulate your furnace. You must not have too much heat or they will dry so they will stick fast to each other; also to the floor. In the morning they should be thoroughly wilted when you go to the dryer, which should be as soon as you get up. Now they want turning, which is done with a snow shovel. Start by shoveling a path across the floor, throwing the apples well across to the other side, then start and fill in the path, keeping them smooth and level. Do the same with the waste; finally back out the door and you will not have stepped on any fruit. It will take about twenty to thirty minutes to turn the kiln, and it should be turned again about the middle of the forenoon and again about noon. This should be enough and they should be ready to come off the kiln anywhere from two to four o'clock. In this dryer the lower story is used for the storage of dried stock; it is shoved off the kiln down a spout that discharges on this lower floor. This leaves a pile of warm apples, and they should be spread out to get the kiln heat out of them. They should be shoveled over every day for four or five days, when they will be in good condition and have a spongy feeling, and when squeezed up in the hand will spring back and not remain soggy. Keep each day's drying by itself until cured, then you may put them on the cured stock, which is now ready for the market. Here we have dealers in every town who make it a business to buy these goods, and they are delivered about as fast as a ton is ready, so you see we have a quick market and very little capital is required, but you who have no home market will have to look to some wholesale grocery house, commission man or broker. As this business grows in a locality someone will make it a business to buy this stock and in time you will have a home market same as we have. Never carry any dried apples over from one season to another, as they will not keep outside of a chemical storage. Sell your goods when they are ready for the market, for you cannot afford to speculate, as it takes lots of money as well as lots of brains.

From these descriptions any man ought to be able to build and operate a dryer and make good wages and a fair profit for the dryer. Now don't think because a unit-size dryer will give you a profit of ten or fifteen dollars per machine that if you build one with fifty-machine capacity you would make fifty times as much, for you would go bankrupt the first season.

SPRAYING HOSE

SERVICE AND QUALITY PROVEN

Our hose will stand more pressure and last much longer than any other.

PERFECT, 1/2-inch, for 200 lbs. pressure. 50-foot pieces, coupled. Per foot 15c

STERLINGWORTH, 1/2-inch, for 300 lbs. pressure. Any length up to 500 feet. Per foot 15c

VULCAN, 1/2-inch, for 200 lbs. pressure. In 50-ft. pieces, coupled. Per foot 12c

WIZARD, 1/2-inch, for 100 lbs. pressure. In 50-foot pieces. Per foot 10c

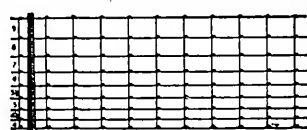
Freight or express paid; cash with order.

Hose replaced free of charge or money refunded if not satisfactory.

Orders filled same day as received. Try us once—you will use no other.

HAMILTON RUBBER MFG. CO.
TRENTON, N. J.

DIRECT TO CONSUMER



39-INCH FENCE 28 CENTS A ROD
Made of high grade galvanized wire. Write for catalog and prices
NATIONAL FENCE COMPANY
Columbia and Water Sts. PORTLAND, ORE.

I'LL SHIP YOU THIS "Can't-Sag"

Gate On 30 Days' Trial
I prove the value of my "CAN'T SAG" Gates before you pay. I want you to see for yourself that they can't sag, and that you can't buy or make a better gate, no matter what material you use. My gates are **Guaranteed For 5 Years** cost less—last three times as long as iron, galvanized wire. Any size, weight, or complete, ready to hang, or you can buy just the Gate Sills, Hinges, Bolts, etc. and make your own gates and save money. Write now for Free Catalog and prices.
KOVMEFG. CO. 510 Adams St., Galesburg, Ill., A. V. Howe, Pres.

True-to-Name Nursery

GALLIGAN BROS. Proprietors
HOOD RIVER, OREGON DUFUR, OREGON
Growers of high grade nursery stock, guaranteed true-to-name. Breeders and importers of purebred Big Type Poland-China Hogs. Service boards, bred gifts and wearing pigs for sale.
For catalog of nursery stock and prices on wine, write

True-to-Name Nursery

HOOD RIVER, OREGON

BOOK ON DOG DISEASES
And How to Feed
Mailed free to any address by the Author
H. CLAY CLOVER, V. S.
118 West 31st Street, New York

America's Pioneer Dog Remedies

Beware of any firm or individual that says build a big power plant and see the money roll in—big money in evaporating apples, etc. Better get rich in a slower and surer way; best to start on a small scale, get experience and grow with the business. The market will never be glutted with high-grade evaporated apples. If you wish to build a little larger dryer, don't build more than four kilns in one plant. I have kept a close watch on all these big dryers and I know pretty well what will happen inside of three years. Do not get in over \$3,500. The trouble with a large plant is you have to have such a large stock of apples that the waste by decay will eat up your profits. The dryer here described can be set on a side hill and the work room on the ground floor. This will eliminate a lot of hard work in carrying peeling apples up stairs.

There has been about 600 carloads of evaporated apples carried over from last year. This represents about one-third or one-fourth the output, and were bought at about five cents, and it costs a half cent to carry them over and another half for boxing, so you see they stand the speculators six cents without a profit; and with not any too good a crop in prospect this year we can look for a pretty fair price for good stock, but I will not make any prediction on price for the public. I have given you the straight facts in this line as from my experience. I think I am quite able to do so, and I have not overdrawn this in any way. If any man will use good business sense there is no reason why he cannot succeed in this business, but it's all work, and it's no get-rich-quick business either. If people do not fully understand or there are other things they wish to know and will write me, I will put all together in an addition to this next winter, and will be sent to you for the asking.

Explanation of Government Crop Reports

[L. M. Eastbrook, in The Packer]

THE methods employed by the United States Department of Agriculture in estimating the production of the various crops of the country, were explained by L. M. Eastbrook of the Bureau of Crop Estimates in an address to the members of the Eastern Fruit Growers' Association. The address was both a defence of the bureau, which often has been criticised for either overestimating or underestimating a crop, as well as an explanation of the work involved. The government began making crop estimates as early as 1839, with an appropriation of only \$1,000, but the machinery of the bureau now has grown until no less than 145,000 voluntary crop reporters are employed, as well as those employees drawing regular salaries, and an expense of \$275,000 annually. Estimates are made on over 50 different crops. These crop reporters are subdivided into districts

Pacific Coast Agents
**United States Steel
 Products Co.**

San Francisco
 Los Angeles
 Portland
 Seattle



J. C. Pearson Co., Inc.
 Sole Manufacturers

Old South Bldg.
 Boston,
 Mass.

PEARSON
ECONOMY in buying is getting the best value for the money, not always in getting the lowest prices. PEARSON prices are right.
A **ADHESIVENESS** or holding power is the reason for PEARSON nails. For twenty years they have been making boxes strong. Now, more than ever.
R **RELIABILITY** behind the goods is added value. You can rely on our record of fulfillment of every contract and fair adjustment of every claim.
S **SATISFACTION** is assured by our long experience in making nails to suit our customers' needs. We know what you want, we guarantee satisfaction.
O **ORIGINALITY** plus experience always excels imitation. Imitation's highest hope is, to sometime (not now) equal Pearson—meantime you play safe.
N A I L S

LADD & TILTON BANK

Established 1859

Oldest Bank on the Pacific Coast

PORTLAND, OREGON

Capital \$1,000,000.00
 Surplus 1,000,000.00

Officers:

W. M. Ladd, *President* R. S. Howard, Jr., *Assistant Cashier*
 Edward Cookeingham, *Vice President* J. W. Ladd, *Assistant Cashier*
 W. H. Dunckley, *Cashier* Walter M. Cook, *Assistant Cashier*

INTEREST PAID ON TIME DEPOSITS AND SAVINGS ACCOUNTS

Accounts of banks, firms, corporations and individuals solicited. Travelers' checks for sale, and drafts issued available in all countries of Europe.

LESLIE BUTLER, *President*
 TRUMAN BUTLER, *Vice President*
 C. H. VAUGHAN, *Cashier*

Established 1900

Butler Banking Company

HOOD RIVER, OREGON

Capital \$100,000.00

4% Interest Paid in our Savings Department

WE GIVE SPECIAL ATTENTION TO GOOD FARM LOANS

If you have money to loan we will find you good real estate security, or if you want to borrow we can place your application in good hands, and we make no charge for this service.

THE OLDEST BANK IN HOOD RIVER VALLEY

"BLUE RIBBON"

(EXTRA FANCY)

"RED RIBBON"

(FANCY)

Quality Brands of Yakima Fruits

We specialize in mixed cars of

BERRIES AND CHERRIES

and will also have straight and mixed cars of the earliest Apricots.

Prunes, Pears and Peaches grown in the Yakima Valley.

Write or wire for information.

Yakima County Horticultural Union

FRED EBERLE, Manager

NORTH YAKIMA, WASHINGTON



WANTED A MAN

To retail Rawleigh Products, towns and country. Some good old vacant territories. Largest and best line. One of the oldest and largest companies in the world. Six Factories and Branches. All Products supplied from new Pacific Coast Branch. Quick Service. Low Freight. We want only industrious men capable of earning \$100 and up per month and expenses. Must have means for starting expenses and furnish Contract signed by 2 responsible men. Address W. T. Rawleigh Company, Oakland, Cal., giving age, occupation and references.



POWER WASHER

WOMANS FRIEND

A REAL POWER WASHER

Round rubber rubs the clothes, turns them over and over and forces the hot, soapy water through them. Washes tub full perfectly clean in 5 minutes. No wringers to shift. Nothing to get out of order. Special low prices to introduce. Catalogue Free. BLUFFTON Mfg Co. BOX 87, BLUFFTON, OHIO.

Visit the CALIFORNIA EXPOSITIONS

On your way to or from the East.

Summer Excursion Tickets

On sale daily to September 30 permitting stop-overs en route. Ten days' stop allowed on one way tickets at San Francisco and Los Angeles.

SPECIAL CONVENTION FARES

To San Francisco—July and August
Los Angeles—July and August
San Diego—July

Low Round Trip Fares to San Francisco and San Diego during the Exposition period.

Visit the Southern Pacific building at the Panama-Pacific Exposition. Rest Room, Moving Pictures, Travel Lectures, Ticket and Validating Office and Information Bureau.

Full information from nearest Agent of

SOUTHERN PACIFIC

John M. Scott, General Passenger Agent, Portland, Ore.

usually represented by the various county and township boundaries, so that practically every township in the United States has its crop reporter. These men make reports each month of the year, with the exception of February. The individual estimates are tabulated and an average struck for each state. Great care is taken by the government that no information about its crop estimates be given out in advance and a heavy penalty is prescribed for anyone guilty of doing so. Clerks and computers who tabulate the returns on speculative crops do not know the state to which the totals pertain.

The term "normal" is used by the government instead of "average" as better illustrating the meaning intended, as the "normal" corresponds with what is commonly called a "full crop," which may be understood as meaning the average good crop which the farmer expects his particular field to grow, with average or normal growing conditions. However, for a single year the condition of a crop expressed as "normal" would not mean anything, but when compared for a long series of years it enables the government to estimate very closely what the prospective yield will be. Mr. Estabrook does not claim that these crop estimates are infallible, and admitted their accuracy cannot be demonstrated. However, he pointed out that growers as a rule contend that the estimates are too high, while dealers on the other hand complain that they often are too low. The work is done without bias and is checked up in every way possible to prove its accuracy. In showing the accuracy of the government's crop estimates, Mr. Estabrook cited the case of Colton. In fourteen years the government has overestimated the crop six times and underestimated it eight times. In the years of overestimates the average error was 1.8 per cent and in the years of underestimates the average was 3.5 per cent. For the fourteen years the net average underestimates was 1.4 per cent. Mr. Estabrook said:

"It may be of interest to know how the apple crop is estimated where, to start with, we do not have a census acreage as a basis. In the first place, the census gives us what purports to be an actual enumeration of trees of bearing and trees of non-bearing ages. Also the number of bushels of apples produced in the census year. These figures are given as totals for each county and state.

"Once a year, usually in the autumn, our crop reporters submit an estimate of the number of trees of bearing age and the number of trees of non-bearing age, as compared with the preceding year and as compared with the usual number. This enables the bureau to estimate the rate at which the number of bearing trees is increasing or decreasing in each state. From the best information available it is estimated that trees of bearing age are increasing at the rate of one per cent annually in the whole United States.

"Then, beginning with June, a monthly estimate is made of the condition of the apple crop as a percentage of normal. These condition reports have been made to the department for the past quarter of a century or more. Last year for the first time the bureau interpreted its condition reports as a forecast of production, beginning with August and ending with November. These forecasts or estimates of production are based on the census. For instance, our system of reporting condition as a percentage of normal has remained practically the same since the work was started, so that the figures for each year are strictly comparable with those of any other year. The production in census years is known for each state. The monthly condition figures and the percentage of a full crop as estimated by this bureau are also known for the census years. If, therefore, at the close of the season the crop in 1909 was estimated to be 43.8 per cent a full crop, and the total production for the United States as reported by the census for that year was 146,000,000 bushels, the full crop represented by 100 per cent would equal 333,000,000 bushels. In the same manner the normal or full crop production of each state is computed. Of course the normal or full crop production of each state is changing constantly because old orchards are dying out and new ones are being planted. These facts are taken into consideration in fixing the state normal each year. Knowing the normal or full crop for any state, it is a simple matter to forecast the prospective yield from the monthly estimates of condition.

"The bureau has a number of checks for use in its system of estimating. Among the most useful are series of tables showing ten-year averages of condition reports by months, numbers of bearing and non-bearing trees, yields and prices. Practically all of these ten-year average tables of condition reports show a relatively high condition at the beginning of the season and a relatively low condition at the close of the season, showing that the condition as a percentage of normal steadily and regularly declines from month to month. The point I wish to make is that if we have a condition report near the close of the season which is higher than the ten-year average of condition reports for the same month, it may indicate a greater yield than a higher condition report earlier in the season. This is exactly what happened with apples in 1914. The season was so favorable to apples that the monthly condition reports remained nearly the same throughout the year, in some cases actually becoming higher as the season advanced, while in other cases the decline in condition was less than the ten-year average decline. Take New York as an example: In June the condition was estimated at 88 per cent of normal, which was 4 per cent higher than the ten-year average for that month; July it was 75 per cent, a de-

Buy Telephones for Telephone Service

THERE is as much difference in telephones as in automobiles, and they should be bought as carefully. You want to use a phone giving reliable service. Cheaply made phones sometimes give good service for a week or a month; then trouble begins. Repair bills make cheap phones costly. Voices come over the wire faintly. Many sounds do not get over at all.

With a Kellogg Telephone repair bills amount to nothing. After years of use you can hear a watch many miles away tick loudly and clearly. They are so strongly and simply made that everywhere among users of telephones the name Kellogg has come to stand for ideal telephone service.

Kellogg Telephones Stand for Service

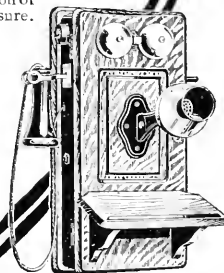
They are made in the largest independent telephone factory in the world. Every instrument passes 37 rigid tests before it is shipped. You have day by day the satisfaction of using a phone that makes telephoning a pleasure.

We have an expert department costing us \$100,000 a year that is maintained for telephone users and those who are starting new lines. Why not put your problems before these experts? The service costs you nothing. You cannot fail to get information that will save you time, money and trouble.

Get your name on our books to receive valuable bulletins and other telephone literature that we send free.

Write for Bulletin 21s

KELLOGG SWITCHBOARD & SUPPLY CO.
Mission and Third Sts. San Francisco, Cal.



GO IN
via

Gardiner

and

Mammoth Hot Springs

The Original and Northern Gateway to

Yellowstone National Park

Season June 15 to September 15

On the original "Pacific Highway"

Ask for tickets
via
Spokane
and
Northern
Pacific Ry.



Use the
Through
Daily Trains
from
Pacific
Northwest

Stopovers permitted for visiting the Park on all tickets,
one-way and round trip, including

Eastbound Summer Excursion Tickets

On sale daily May 15 to September 30

Northern Pacific Railway

A. D. CHARLTON, A. G. P. A., Portland, Ore.

BUY AND TRY

White River Flour

MAKES

Whiter, Lighter
Bread

FRUIT GROWERS

Dehydrate Your By-Products

It gives you a high grade quick selling product at a minimum cost. It makes a clean and natural tasting product. Dehydrated fruits and vegetables have been approved by the U. S. Government, while desiccated, dried and evaporated products have been rejected. There is but one Dehydrator manufactured in the West and it is the best By-Product machine ever devised. It is adapted to the individual grower, as it can be constructed to meet any and all requirements. It is fully covered by U. S. patents. Therefore, you are protected in its use.

The manufacturers of this Dehydrator have recently patented new and improved automatic labor-saving preparatory machinery which will further reduce the present low cost for the production of this product.

For new descriptive booklet address

LUTHER MANUFACTURING CO.
San Francisco, California

F. A. BISHOP, Secretary

HOOD RIVER ABSTRACT COMPANY

HOOD RIVER, OREGON

ABSTRACTS INSURANCE
CONVEYANCING

cline of 13 per cent from June, but still 4 per cent better than the ten-year average; August 69 per cent, a fall of 6 per cent, but 9 per cent better than the ten-year average; September 73 per cent, an advance of 4 per cent from the previous month instead of a decline, and 19 per cent better than the ten-year average; October 79 per cent, a further advance of 6 per cent over the previous month instead of a normal decline, and 24 per cent better than the ten-year average; November 84 per cent, which was an increase of 5 per cent over the previous month and 31 per cent above the ten-year average. Thus, while the condition of the apple crop in New York started in June at 88 per cent of normal and ended in November at 84 per cent, a net decline of four points, yet if compared with the ten-year average it started in June at 104.8 per cent and ended in November at 158.5

per cent. The equivalent of a full crop or 100 per cent production in New York is estimated at 59,100,000 bushels. Taking 84 per cent of this, the percentage of a full crop indicated by the November report, the estimated production in 1914 was 49,600,000 bushels.

"For the United States as a whole the condition of the apple crop was estimated in June to be 73.7 per cent normal, and in November as 74.5, an increase of nearly 1 per cent instead of a normal ten-year average decline from 66.5 per cent to 51.3 per cent. Expressed as a percentage of the ten-year average the condition of the apple crop for the United States in June was 110.8 per cent, July 108.1, August 112.9 per cent, September 115.5 per cent, October 130.1, and November 145.2.

"Another fact which should be borne in mind with respect to the bureau estimates of the apple crop is that they are estimates of total production on all farms in the United States as distinguished from estimates of the commercial crop. The commercial crop is that portion of the total crop which is shipped out of the counties where grown. In November, 1913, the bureau estimated this movement for the first time and the inquiry was repeated in 1914. In 1913 it appeared that 41 per cent of the total apple crop was shipped out of the counties where grown and 59 per cent was consumed on the farms or within the counties.

On this basis the 1913 commercial crop was about 59,000,000 bushels and the crop for home consumption was about 86,000,000 bushels. On a per capita basis, assuming roughly that the population of the United States is approximately 100,000,000 and that 65,000,000 are living in cities and 35,000,000 on farms, it would seem that in 1913 the per capita consumption of apples in cities was about nine-tenths of a bushel, while on farms it was 2.4 bushels. Our estimates for November, 1914, indicate that the commercial crop was 38 per cent of the total and that 62 per cent was consumed or remained in the counties where grown. This would give us a per capita consumption in cities of one and one-half bushels and in the country four and one-half bushels. Of course such an estimate of per capita consumption is not strictly accurate because a portion of the crop is consumed in cities and towns in the counties where raised. But these estimates of per capita consumption are partly confirmed by a special investigation which was made in 1914 by the Bureau of Plant Industry on the subject of 'What the Farm Contributes Directly to the Farmer's Living,' and published in Farmers' Bulletin No. 635. This shows the per capita consumption of apples on farms as ranging from one to five bushels, with an average of 3.1 bushels."

If you have a soft wood floor on the kitchen do not spend time and energy scrubbing it. Cover it with a good linoleum, which if varnished once or twice a year will last five or ten years.

**"WE STARTED RIGHT
AND WE ARE RIGHT"**

6458 Acres

IN OUR ENTERPRISE

4178 Acres

ALL IN APPLES

Nine miles continuous rows of trees, the largest apple orchard ever planted.

All are one, two and three years old; the two and three year old all sold, amounting to over 3,000 acres.

We are now offering our one year area terms to suit you.

We give five years' from date of planting, free care. Our company is unlike others in the feature of staying with our purchasers after the free care period. Our plans make our interests mutual; we all work together for the interest of all.

Our Booklet will give you a simple statement of our dealings and methods. Write us for information.

DUFUR ORCHARD COMPANY

Northwestern Bank Building
Portland, Oregon

The First National Bank

Hood River, Oregon

Capital and Surplus
\$135,000

4% Interest Paid on Savings
and Term Deposits

F. S. STANLEY, President
E. O. BLANCHAR, Cashier

Apples and Health

Albert Hubbard in the Chicago Examiner

A DOCTOR'S bill doesn't always have to be paid at once. Apples are generally bought for cash. But in the long run apples are much cheaper than medical service. The old maxim still holds, "An apple a day keeps the doctor away." As a race we have never had enough fruit. We have lived too much on meat and white flour. Any doctor will tell you that there are a hundred diseases that would absolutely disappear if we would adopt a fruit diet, say for one meal a day. Apples agree with everyone. Apples tend to modify the demands of the Meat Trust, increase the flow of bile, and their plentiful use will add to our happiness and length of days by eliminating the dregs of much pessimistic theology that yet clogs our social system.

In apple season, when you saunter through an American orchard and see a pile of Nature's Health Nuggets, you think of a painting by Turner. Old Sol has dipped into Mother Earth's palette and colored them with gold, russet and vermilion drawn out of the soil, and then flavored them with an Elysian essence. Later, man learned to cooperate by spraying the trees, irrigating, plowing and leveling the soil. And it came to pass that the world learned that art in apple culture paid. The apple growers of California, Oregon, Washington and Colorado were the orchard teachers of this country. They made the farmers of the East realize that apples might well be taken seriously—that they were not a sort of garden truck. The Hood River Valley apples have attained an international reputation. This Hood River Valley is one of the most picturesque and beautiful spots one can imagine. The cool nights and the warm sunshine of the days seem to contribute exactly the right conditions for apple culture. However, there are many other districts that can produce just as good fruit as the Hood River Valley, provided the same amount of genius is brought to bear. I admire the Hood River Valley apples, but I admire the Hood River people more. They have brought genius to bear in the business of apple culture and apple salesmanship. They know how to prepare their wares for the market in the most attractive shape.

Many American apples command a price in England. I have paid a shilling for an American apple and had it brought in on a silver platter with the original wrapper upon it, duly served by a flunky in side whiskers, who expected a tip for his genius in selection. And, really, I was a little proud of the fact that people in America occasionally do their work so superbly well. And, as the years go by, apple culture will receive a degree of attention that it has never had before. Fruits, vegetables and poultry are now being regarded just as important as corn, wheat and oats, and perhaps a little more so.

D. Crossley & Sons

ESTABLISHED 1878

Apples for New York and Export

CALIFORNIA, OREGON, WASHINGTON, IDAHO AND
FLORIDA FRUITS

Apples handled in all European markets at private sale. Checks mailed from our New York office same day apples are sold on the other side. We are not agents; **WE ARE SELLERS.** We make a specialty of handling **APPLES, PEARS AND PRUNES** on the New York and foreign markets. Correspondence solicited.

200 to 204 Franklin Street, New York

NEW YORK LIVERPOOL LONDON GLASGOW

HOOD RIVER VALLEY NURSERY COMPANY

Phone 5634

Route No. 3, Box 227

HOOD RIVER, OREGON

Plantation four miles southwest of station, Belmont Road

We will be pleased to show you trees, apple trees that have a heritage, a quality that should be considered by everyone who plants a tree. Our trees are grown in clean hillside virgin red soil with clay subsoil, producing the most vigorous root system. Our buds are selected from the best bearing healthy Hood River trees that make the Hood River apple famous throughout the world. Our trees will give you satisfactory results in vigor, fruit and quality. Ask for catalog. We guarantee our products. Apples, pears, peaches, apricots, almonds and walnuts. A complete line of the best varieties of all kinds of fruits.

H. S. BUTTERFIELD, President

W. J. ENSCHEDÉ, Manager



**RHODES DOUBLE CUT
PRUNING SHEAR**

Pat'd June 2, 1903.

RHODES MFG. CO.,
520 S. DIVISION AVE., GRAND RAPIDS, MICH.

**THE only
pruner
made that cuts
from both sides
of the limb and does
not bruise the bark. Made in
all styles and sizes. We
pay Express charges
on all orders.**

Write for
circular and
prices.



To California and the Expositions

"North Bank" Rail and 26 Hours' Ocean Sail

Steamer train leaves Portland 9:00 A. M.

Arrives Flavel 12:30 Noon. Lunch on ship.

S.S. arrives San Francisco 3:30 P. M. next day.

Palace of the Pacific S.S. "Northern Pacific"

Fastest ship on the Pacific.

Built in America for the Stars and Stripes.

Sails June 4, 8, 12, 16, 20, 24, 28

Same Time and Rates as All Rail
Fares Include Meals and Berths

Between Portland and San Francisco

All agents Great Northern, Northern Pacific Rys.
Burlington Route and
THE NORTH BANK ROAD

A. B. JACKSON, G. A., Davenport Hotel, Spokane

R. H. CROZIER, A. G. P. A., Portland, Ore.

SAN FRANCISCO—665 Market St. C. E. STONE, Traffic Manager

Arcadia Irrigated Orchards

THE LARGEST AND MOST SUCCESSFUL ORCHARD PROJECT
IN THE ENTIRE WEST

7,000 acres planted to winter apples. Gravity irrigation. Located 22 miles north of Spokane, Washington, directly on the railroad. We plant and give four years' care to every orchard tract sold. \$125, first payment, secures 5 acres; \$250, first payment, secures 10 acres; balance monthly.

SEND FOR BOOKLET

Arcadia Orchards Company
Deer Park, Washington

Prospects for Short Apple Crop in the Northwest

The Northwestern apple crop this year will fall short of the 1914 output, which was approximately 14,000 cars. This is indicated by the similarity of reports coming to the Northwestern Fruit Exchange from the various producing districts. They state that the bloom on the old trees is much less than last year, but that trees coming into bearing will have considerable counteracting effect.

The Yakima district was the heaviest contributor to Northwestern tonnage in 1914, with nearly 6,600 carloads, but the consensus of opinion now is that it will ship only 60 per cent of that tonnage this year. Many of the old trees will carry but 25 to 40 per cent of their last load if the bloom is a true indicator. Even with new orchards coming into bearing, it is not safe to estimate above 4,000 carloads for 1915.

Wenatchee shipped 5,570 carloads of apples during the season just closed. Its old trees show indisposition to bear heavily, but not so much so as at Yakima. Many new orchards will bear their first substantial crop, especially in the section of the north called the up-river country, where it is estimated that 400 cars will be rolled, as compared with 150 last season.

Jonathans are short at both Yakima and Wenatchee, although the same trees bore a light crop last year. Winesaps will be heavy again.

The same story comes from Hood River. Its shipments for 1914 were close to 1,200 cars, and it will not have any more in 1915.

Spokane reports a shortage and estimates less than 400 cars.

Rogue River Valley of Southern Oregon had a very light crop in 1914 on account of drouth, and it is now feared that there will be another shortage of water and crop. The present normal prospect is for 1,200 cars, consisting of 700 of pears and 500 of apples. However, unless weather conditions are favorable, this estimate will fall short of realization.

There are still many things that can happen to cut down the crop, but very little to increase the above estimates. Hundreds of growers in some districts are fighting frosts nightly, although this danger is now nearly past. In some sections the battle with blight is serious and the issue problematic. There will be more or less June drop. Wind and hail storms may come to any or all districts during the summer.

Several of the less important districts will have increased tonnage, but this is more than offset by the shortage in other sections.

No fruitgrower's home should be without a water system, with hot and cold-water attachments, in the kitchen, bath and laundry room. No woman should be compelled to carry water from a well when it can be pumped into the house with very little expense.

High
Quality
in

F·W·BALTES
& COMPANY
PORTLAND, OREGON

Printing

WRITE FOR PRICES AND SPECIFICATIONS on Catalogs, Booklets, Labels for Fruit Boxes, Circulars, Stationery, etc. We can supply your wants quickly, accurately and economically. Best Equipment in the Northwest. We print *Better Fruit*.

at Low
Prices

PORTLAND, OREGON

PORTLAND HOTEL

The hotel which made Portland, Oregon, famous
Most Desirably Located. In the Center of Shopping and Theatre District
Covers a City Block

Broadway, Sixth, Morrison and Yamhill Streets

EUROPEAN PLAN—\$1.00 per day and upward

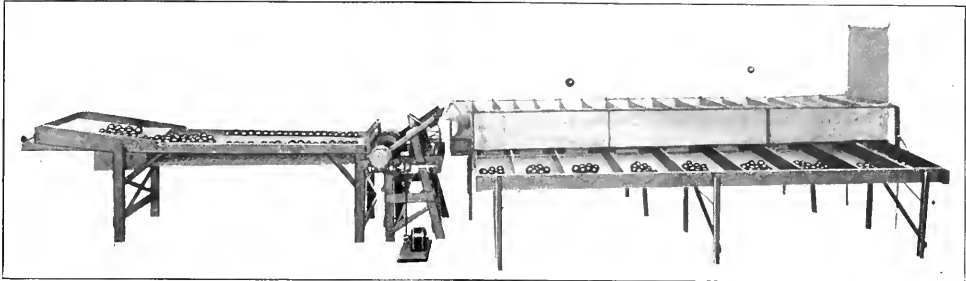
Write for Portland Hotel Booklet

Geo. C. Ober, Manager

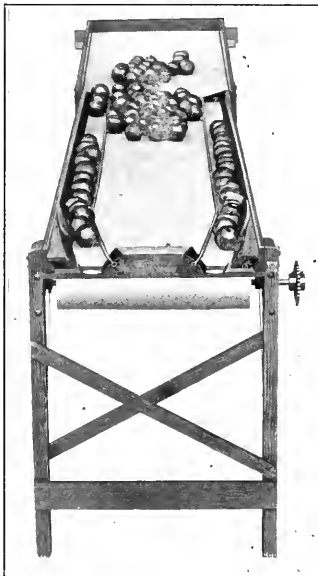
THE TWO-CUP PRICE FRUIT SIZER

Cut down your packing and grading expense \$45.00 to \$65.00 on every \$100.00

This machine handles two grades; we have one-grade and three-grade sizers also, capacities ranging from 350 boxes per day for the one-grade to 1,800 boxes for the three-grade. Handles any shape of apple, peach or pear, for it does it by weighing, like a pair of scales.



OUR MOTTO—To simplify and reduce the cost of packing fruit, so that even a child could do it and obtain the perfect pack.



Two-Grade Sorting Table

The sorting table that revolutionizes the grading question. Notice the moving endless belt that carries the fruit past the sorters. The grades are rolled over the rods—Extra Fancy on the right, Fancy on the left. There is a clutch attachment that stops and starts the belt by simply leaning the body against a lever. This arrangement permits more time for grading in the case of a bad lot of fruit. Grading has been done on this table for ½ cent per box. We say you can do it for 2 cents, at the most. **USERS HAVE GRADED AND PACKED FOR 4½ CENTS PER BOX** on our three-grade sizer. A child can pack after this machine.

Non-Bruising Qualities

During a two weeks' demonstration, we put two dozen eggs through the sizer from 800 to 1,000 times, never cracking a shell.

DEEDS speak louder than words. Read what users say, then write us for more information and what other users think.

We have just finished the packing season and have packed about 18,000 boxes of apples. Our grading cost us about 1 cent a box and our packing 3½ cents, making the total cost about 4½ cents for packing and grading.

It is necessary for fruit growers to save every cent possible in putting their fruit on the market, and at the same time improve their pack. We cannot say too much in recommending the machine to fruit growers.

WEISER RIVER FRUIT ASSOCIATION,
Weiser River, Idaho

In the capacity of warehouse foreman for Lynch-Taylor Produce Company, where we used one of your machines, it places me in a position to state what the machine can do. We paid 4 cents for packing, and our grading, packing and sizing cost us from 5½ to 6 cents per box. In addition to that saving we have a much better pack and a considerable saving in wrapping paper. This last item I have not figured in the above saving.

We have packed every variety of apple and pear and find that there is absolutely no bruising. Packers on our machine average from 85 to 150 boxes per day. I wouldn't go back to the old system again for a farm. H. G. BULLOCK,
Warehouse Foreman for Lynch-Taylor Produce Co.

I packed about 20,000 boxes of apples, consisting of Jonathan, Spitz, Stayman, Rome Beauty and Arkansas Black. My packing, grading and sizing cost me 5½ cents per box, and I got a much better grade of pack than I was ever able to get from the old hand-sizing methods. I saved ½ cent a box by using the proper sized paper on the different apples.

There is absolutely no bruising of the fruit with this machine. I have sized apples quite wet when run through the machine and found them dry when they came to the packers.

I take pleasure in recommending this machine to any man who has a small or large amount to pack.

H. B. HUMPHREY,
North Yakima, Washington.

BELLE TERRA ORCHARDS

Zillah, Washington

It gives me pleasure to tell you that the Price Fruit Sizer has given me the greatest satisfaction and enabled me to manage all the work in the packing house while Mr. Estes attended to other business on the outside. Without the sizer I could not have done this.

Our packers averaged 100 boxes a day and we paid 3½ cents for packing. The packers I had last year without the machine are happier and better satisfied this year while packing from it, although packing for 1½ cents a box less.

I can heartily recommend the machine to every fruit grower. MRS. JOHN H. ESTES

We could go on giving you hundreds of such testimonials. Write for further particulars.

This machine will be demonstrated every day except Sundays during the year at the Panama-Pacific International Exposition in the Palace of Horticulture, by our California State Agent.

Price Fruit Sizer Co.

DESIGNERS AND MANUFACTURERS OF

Machines for Sizing and Sorting Apples, Peaches and Pears, Potatoes and Other Vegetables

Works and General Sales Office, NORTH YAKIMA, WASHINGTON, P. O. Box 934

W. G. PRICE, President
W. K. PRICE, Manager of Works
J. W. LAVIGNE, Sales Manager

Hundreds of these Machines Now in Use

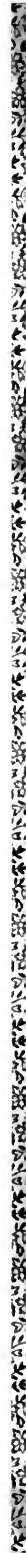
The World — Our Orchard

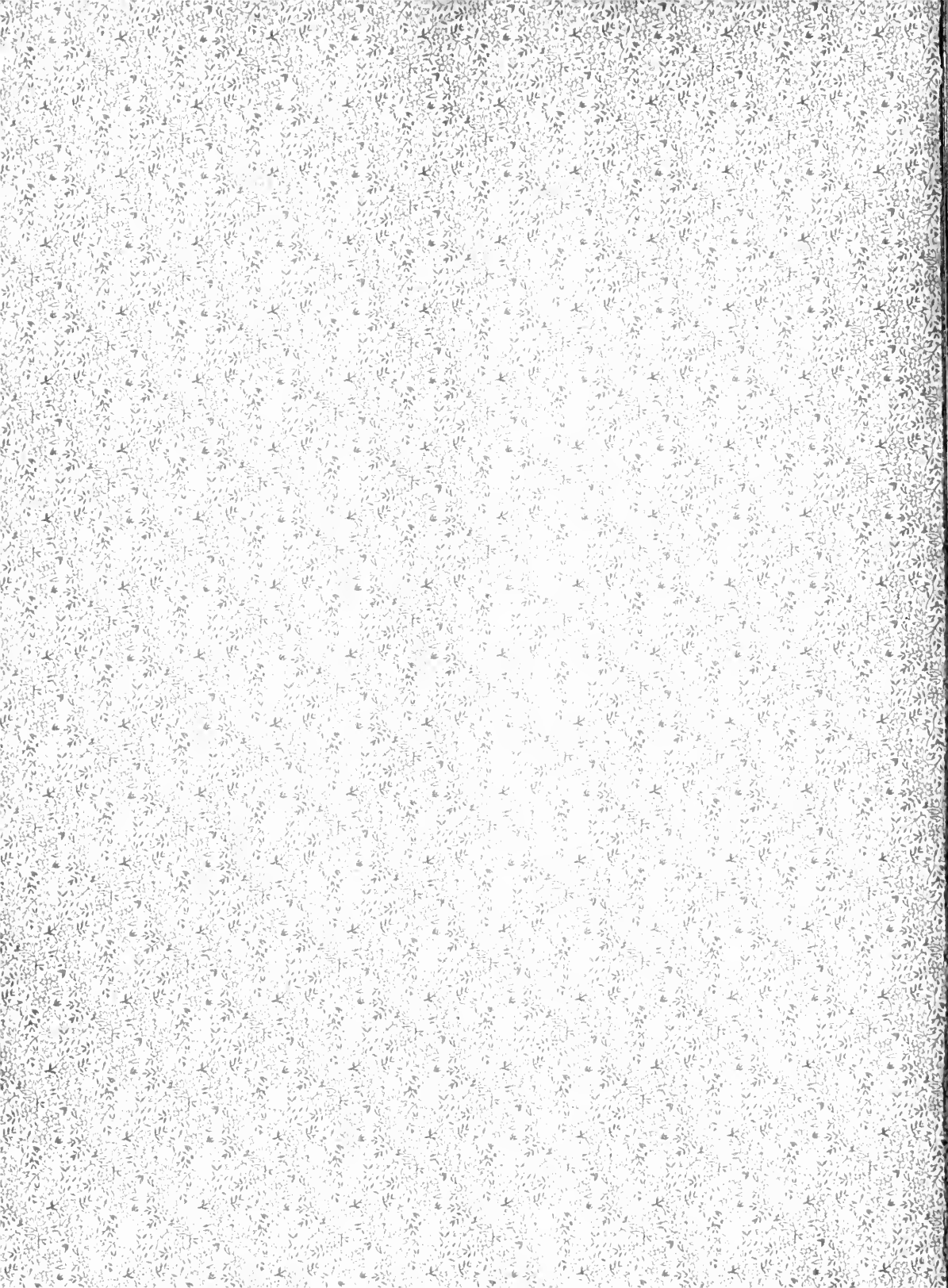
STEINHARDT & KELLY

**101 PARK PLACE
NEW YORK**

=====
**Unquestionably the most
important factors in
the fruit industry
of the
United States**

Our Market — The World







3 5185 00259 1657

