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Eastern Montana Irrigated Projects Growing Corn

Montana Seed Growers' association, with headquarters at Bozeman, stands for quality in field seeds which a sizable group of farmers are raising as cash crops. The association lends prestige to the state as a source of supply of these products.

The association's activities are concerned especially with wheat, oats, barley, flax, rye, corn, alfalfa, red clover, crested wheatgrass, brome grass and field beans. In one of the organization's important functions — that of inspecting and registering fields and seeds—a number of significant points concerning agriculture of the state are brought to attention.

"In two-thirds of the state, good mature corn can be produced every year," says Ralph D. Mercer, secretary of the association and exten-

Million Berry Plants

A million strawberry plants of an everbearing variety have been shipped this spring to eastern Montana, North Dakota, South Dakota and other states from the Bitter Root valley in western Montana. The plant industry was started five years ago in the Charlos Heights community. An improved variety of berry has been developed in the Bitter Root valley.

sion agronomist for Montana State college.

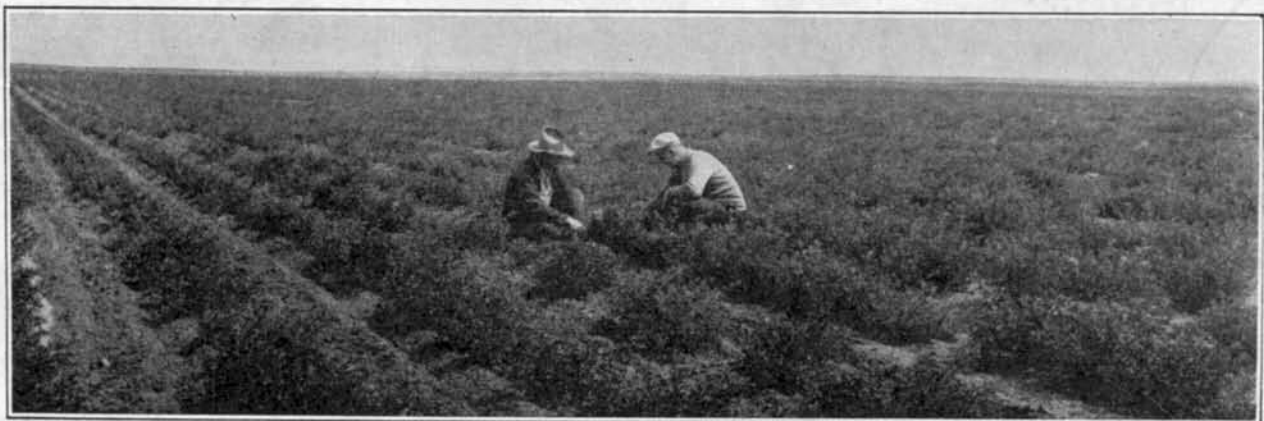
The most corn has been grown on the irrigated projects along the Yellowstone river in the eastern two-thirds of the state. Early strains are used. Some interest now is being shown in improvement of corns suited especially to

Montana conditions. It is likely that new hybrid strains that meet the seasonal requirements and give higher yields will be ready after-while for Treasure State corn growers.

Crested wheatgrass is a coming crop in the state for hay and pasture. Seventeen growers last year registered their crested wheatgrass seed after passing the association's inspections. A hundred thousand pounds of seed were produced, and the volume will greatly increase.

Growing of alfalfa seed for some time has been important in Montana. Two hundred and forty-seven growers registered more than 22,000 acres of Grimm, Cossack and Ladak alfalfa for seed purposes in 1936. Some years there

(Continued on page 2)



Alfalfa for seed in eastern Montana. This state has gained a reputation for growing alfalfa seed of high quality. The same sort of high standards required for this crop, promulgated by the Montana Seed Growers' association, are applied to production of other field seeds in the state.



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This magazine is sent free for five months to those indicating an interest in the Northwest states. On expiration of that period it may be obtained on a yearly basis by sending 25 cents in stamps, coin or money order made out to J. W. Haw. If you wish to renew on a complimentary basis for five months this may be done by making a written request.

JUNE, 1937

**EASTERN MONTANA
IRRIGATED PROJECTS
GROWING CORN**

(Continued from page 1)

have been 600 producers making applications. Clover seed also is produced particularly in the western part of the state.

One hundred and six growers last year applied for registration of small grains.

Montana seeds go not only to farmers within the state, but a de-

mand is evident from buyers outside also.

A thorough system of establishing good seed in the state is followed. The experiment station at Bozeman and other points over the state develops and tests foundation stock. When this is perfected, it is distributed to a very few selected growers who increase it and produce it according to standards which permit its registration. The increased seed stocks pass on to a somewhat larger group where a further increase takes place, the group being selected by county agents and their fields and seed being inspected by the association. The next step is distribution of the further increased and tested supplies to a third group chosen by the county agents and from them the commercial producers or average growers obtain the seed they want for field planting. Thus the job of building up adequate supplies of seed of any variety is carefully worked out and guarded against mixtures.

DAIRY DIVIDEND

More than 1,000 dairy farmers in the Yakima valley, central Washington participated in a dividend of \$14,465 paid during December of the Yakima Dairymen's association. Average return to farmers of 33½ cents per pound of butterfat was made during 1936 compared with 28 cents a pound the previous year.

Private enterprises operating in the valley also buy dairy products. Irrigated alfalfa and sweet clover swell the milk volume.

CLOSE-UPS

Short Paragraphs About Agriculture in Northern Pacific Territory

A few years ago Jim Eddington located in Lake county, Mont., on the Flathead Irrigation project. Recently he completed a new dwelling on his farm with garage attached for his new car.

A Montanan, Stanley K. Smith, cattle breeder living in the Gallatin valley, has been designated by the Milking Shorthorn society as an approved judge to act for this breed at fairs and shows in the United States.

North Dakota bees last year produced an average of 147.2 pounds of honey per hive, or twice as much as in 1935. There were 32,000 hives in the state in 1936, or 2,000 more than the previous year.

A British poultryman visiting in this country, M. B. McNamara, took back to England with him a quantity of eggs from a flock of Bronze turkeys at Aitkin, Minn., owned by Mr. and Mrs. Claude Wright.

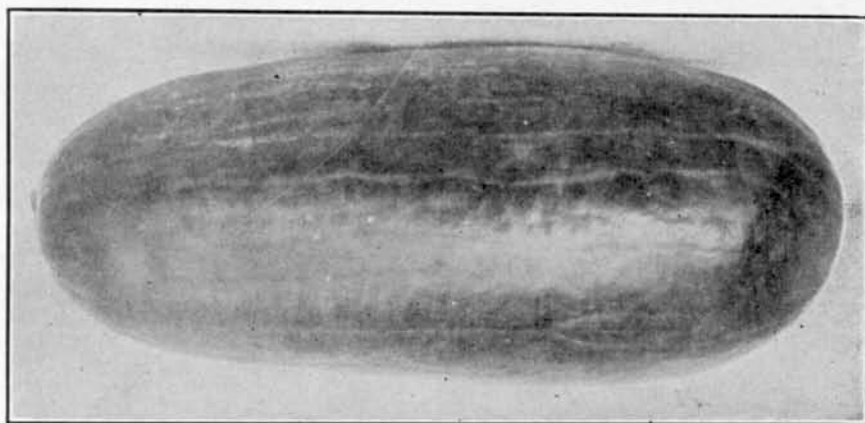
Benz Brothers, in the Yakima valley, central Washington, raised 18 tons of merchantable potatoes on an acre, on land that has been in potatoes three times in 13 years. The 18-ton yield was obtained after three years of alfalfa, commonly used in Yakima potato rotations.

W. A. Keller took over a 40-acre farm near Charlo, Mont., in the Flathead irrigated valley, during 1932, agreeing to pay \$2,500 for it on contract. He has kept up the payments and interest, having reduced the principal by half, and asked recently what he would take for the place, Keller replied his price is \$3,200.

One-third of the nation's hardy daffodils are raised in Pierce county, western Washington. In a recent festival parade in the county 25 floats were decorated with this flower. Tulip and iris culture is increasing in that section.

Landrace hogs from Denmark are being used in experimental breeding work at the United States department of agriculture's range livestock station near Miles City, eastern Montana. Two stallions and four mares from Europe also are at the station for experimental use in developing new strains of draft and light horses.

Twelve hundred acres of peas to be sold fresh in the pod and for freezing are being raised this year near Raymond, South Bend, Elma and Tenino, western Washington. White River valley growers also will raise peas and a large acreage will be grown in addition for canneries.



The new Improved Kleckley Sweet No. 6, wilt resistant watermelon, tried out by Washington State college, and which promises to replace the Klondyke variety in many fields in the Yakima valley where melons are grown by the carload.



These Farmers Can Afford New Conveniences

There is a quickened demand for building materials, carpenter and masonry tools in the Lower Flathead valley, just west of the Rocky Mountains' Mission range in Montana. Farmers are building new homes and paying for them with the proceeds from seed pea, sugar beet and alfalfa crops and the returns from dairy cows and poultry and the cash they get for clover seed.

Intensive agriculture is coming into the Flathead valley. That, with improved prices for farm products, is improving the condition of the settlers every year.

Has Electric Fence

A few years ago Roy Webb came into the valley looking for a place to dig in with his small means. He found it on 80 acres that hadn't been farmed very much. After he cleaned up this land and did some good farming, the first crop put him on his feet. Since that time Webb has built a new cottage, furnished with many of the electrical devices one finds in strictly modern homes—an electrical refrigerator, cleaner, washer and so on. Water is piped into the house. An electric pump keeps the water on tap. Webb even has an electric fence around part of his farm to keep his livestock corralled. Now he thinks he will expand conservatively while land prices still are favorable, possibly buying another small tract.



This is the cottage near the foot of the Mission range in western Montana, that Roy Webb built on the 80-acre farm in the Lower Flathead valley which has brought cash returns that allow him to provide for himself and family many of the modern living conveniences.

In 1928 Dave West, his wife and family of youngsters landed in the Flathead valley looking for a new start. They got it raising sugar beets. The nine years that have elapsed have been a story of good farming, continual attention to the job and now three children are grown and married, living on and running the farm while Mr. and Mrs. West spend the winter in California and the summers in Missoula, Mont., not far from the valley.

Peter Cook thought he would rather not farm in the valley any more. He had been at it on his place near Charlo since 1925, in which year he bought a raw 160 acres. He put on buildings, got the

land into crop and had everything paid for. In the fall of 1936 he sold out for \$3,000 more than he paid for the farm and went back to his old home, stayed all winter, traveled in various states looking for a new location. With the coming of spring Cook was back in the Flathead valley ready to reinvest in farm land. The Flathead had given him some big crops. On 40 acres last year he raised clover seed that brought \$1,100. From 12 acres of sugar beets in 1936 he took 26 tons to the acre of crop and four more acres averaged 15 tons per acre.

Bought New Car

O. E. Mikelsen is a more recent Flathead valley settler. He arrived three years ago and bought an 80-acre farm for \$2,500 on terms. Part of this land hadn't been farmed for three years, but water was now available for it and he put it into shape. Last year 600 bushels of seed peas brought him \$2.24 a bushel. One year he had 1,000 bushels of seed peas. He raises grains, hay, a few beets, keeps cows, a couple of litters of pigs and grows a home garden. Mikelsen is wearing a smile. His efforts have afforded himself and family a new car. Now he has a new tractor and this summer will start building a new house on the farm.

The Lower Flathead valley is irrigated and each year more improvement has been made in the



Harry Miller developed this set of improvements on a tract of irrigated land in the Lower Flathead valley which he bought some years ago. Flathead farmers are busy using the returns that sugar beets, seed peas, alfalfa, grains, dairy cows and poultry bring them to build new homes, provide better equipment and further develop their cropping practices.

(Continued on page 8)



Near Missoula in a sheltered Rocky mountain valley J. S. Cusack presides over a cattle domain.

Resident manager for the Harris Grain company, a Colorado firm, Mr. Cusack went to western Montana in 1934 and set up a cattle feeding establishment which has been operating ever since. It is a beef producing plant which functions in some respects like a factory.

Harris Grain company in its Montana feeding operation fattens cattle of its own and those of other people who make contracts with the firm to do a custom job. Raw materials are purchased from the surrounding territory—feeder cattle, grains, forages, supplements.

Care and Planning

At the modern yards adjacent to DeSmet, five miles west of Missoula, Mr. Cusack has at hand the equipment required for him and his men to do their work. When they get through putting fat on their livestock, buyers at the markets know from experience the care and planning that have gone into the finished product.

On a well-drained spot on the main line of the Northern Pacific Railway, the yards cover 35 acres. First there is an office, and large scale used for weighing the feeds. There is a warehouse for certain feeds, blacksmith shop, garage and barn. At one side is the branding and dehorning chute, an important feature, for no steers with horns can enter the Harris lots. Also western people are particular about brands. Everything must be branded according to ownership and a record made of these details at the state capital. At the time shipments are made, a clearance on brands can be obtained through state officials, when it is called for in accordance with law. Brands also obviate a mixup in the event a fence between yards becomes faulty.

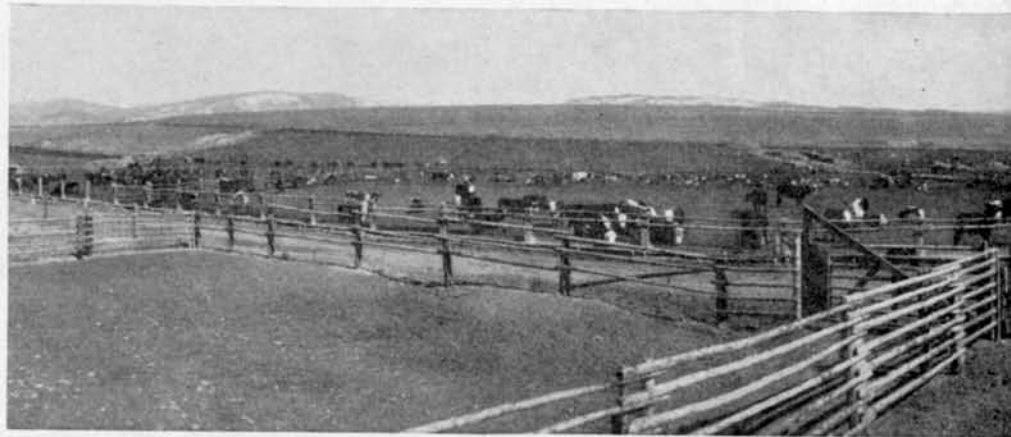
Proof Against Microbes

The cattle are classed as to ages and sex, yarded according to these groupings. All calves receive double vaccination, which protects them against microbes of blackleg and hemorrhagic septicaemia.

Sugar beet pulp is a major item of the ration served up to cattle in

WESTERN MONTANA FEED

Beet Pulp, Chopped Alfalfa Hay, G in Yards of Harris



Here are the 35 acres of feeding yards under the supervision of J. S. Cusack for the Harris C in these yards every winter in a 180-day feeding program that entails acquiring of big piles of sugar b from farmers in the surrounding irrigated valley. The company feeds both cattle it buys and those basis.

the yards at DeSmet. They will eat various amounts, depending on size and age of the different critters. Daily pulp consumption per head ranges from 50 pounds to 115. To keep a stream of pulp coming into the establishment for appetites that must be satisfied every day, a motor truck plies the highway between DeSmet and Missoula, pulling a rubber-tired trailer carrying six tons a load. When it arrives at the yards, the motor unhitches, takes an empty back to the Missoula factory of the American Crystal Sugar company for another. The loaded trailer becomes a wagon. A tongue, doubletrees and neckyoke slip into place and a sturdy team of horses pulls it through the alleys between pens while two men fork the pulp into the feeding space around the fences.

Water is a major item. Standing a little distance from the yards and at higher elevation is a 26,000-gallon storage tank from which water flows to the various points where it is available in large drinking tanks. From a well 100 feet deep, motor power pumps water to keep the storage filled. On a wet beet pulp ration an average steer consumes 15 gallons of water daily.

On dry feed, he ups that amount to 25.

Pulp Is Basic Feed

With pulp as the basic feed, much chopped alfalfa is given to the steers. It comes from nearby irrigated valleys whose farmers have a surplus to sell. Chopped, it is more easily handled and the steers eat it all—not wasting a large part of the stems, which they would if they got it whole.

Every steer has a sweet tooth, but that's not the important reason why each one receives two pounds daily of molasses. It does increase the palatability of the ration, but it also gives them valuable carbohydrates and proteins. In addition, such proteins as linseed, cottonseed or soybean meal are fed. Another feeding detail is the piles of good quality straw at hand for the cattle. They can munch on this either for added bulk or variety. In the bovine ration it's something akin to lettuce salad in the human diet, Mr. Cusack says.

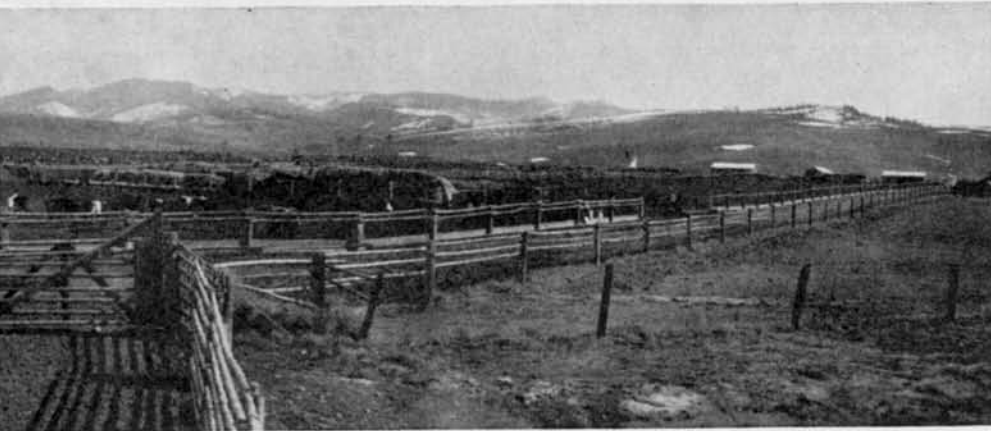
Market For Crops

Mr. Cusack is careful that his fat steers do not become disturbed. A prime animal, he says, fat and ready for market after feeding for 180 days, can be ruined in 30 min-



USED FOR QUALITY BEEF

Grains and Concentrates Fatten Stock Grain Company



Grain company at DeSmet, western Montana, near Missoula. Thirty-five hundred cattle can be fattened on pulp, alfalfa hay and grains from the American Crystal Sugar company factory at Missoula and range cattle growers who wish to make contracts with the company to feed for them on a custom

utes by being made to get excited and too warm. Therefore, when time comes for shipment to market, Mr. Cusack's men go at the job quietly and deliberately. But it doesn't take long. With his crew he can load a car every three minutes from the yards, because his loading yards, chute and gates are arranged conveniently. No one is permitted to use whips, clubs or any other implement of persuasion, nor is it permissible to shout in urging the cattle along. His men work quietly and carefully according to a plan and the cattle move along. The loading chute is narrow, has no cracks in the sides and the lower portion of these sides slants in toward the floor. A steer can't turn around in it. If he attempts to, his foot strikes on the slanting side, slides down to the floor, the critter is diverted by this incident and he goes right on up the chute.

The Harris Grain company's western Montana cattle feeding operation makes a market for sugar beet byproducts produced near at hand; it's an important avenue for marketing alfalfa hay and the range cattle producer also finds a market for his product here.

Furthermore, Missoula is an im-

portant feeding point on the Northern Pacific railway where hundreds of carloads of livestock every year en route east and west are stopped for rest, feed and water in the railway company's yards.

NEW BOOKLET PUBLISHED

A 56-page booklet in color, fully illustrated with new pictures, has just been published by the agricultural development department of the Northern Pacific Railway, portraying agricultural and industrial advantages and the opportunity offered by attractive living conditions in Washington and northern Idaho.

Climate of the Pacific Northwest, "air-conditioned by Mother Nature," receives major attention. From cover to cover the booklet's illustrations, narrative and statistical matter are based on the theme that Washington and northern Idaho have wide appeal to the aggressive prospective investor thinking either of rural or urban property.

Building a background for the reader by touching briefly on early history of the area and sketching the fundamental reasons for its growth on a wide base agricultur-

ally and industrially, the booklet illustrates the flexibility of Washington and northern Idaho producers to meet changing demands for crops and finished products. Further, it looks into the future with a prophecy of even greater developments to come.

Continued irrigation construction in central Washington and in Idaho to utilize more fully the constant flow of the Columbia, Yakima, Snake and other important streams for crop production and electrical power development, along with the increasing population and expanding trade, give the Pacific Northwest great promise for the future, the booklet points out.

Schools, rich natural resources, transportation, markets and recreation all receive attention.

EARLY CROPS SOLD

This spring asparagus in carloads has moved from central Washington to several points in Canada, western Washington, Minnesota and New York. Apples from storage houses went to Minnesota, California, Canada, Illinois, Missouri, Kansas, Rhode Island, Colorado and western Washington.

Asparagus going out fresh has brought up to 10 cents a pound for extra quality offerings. Local canneries have taken a part of the output. Usual price from the canneries has been four cents a pound to growers. By the middle of May a few crates of strawberries had been marketed at Pasco and Kennewick, Wash., bringing \$3 a crate. The first shipping of spring head lettuce for the season from Pasco in carloads took place May 15. Weather was particularly favorable this spring for the head lettuce crop.

NORTH DAKOTA MELON

North Dakota Experiment station's horticulturist, A. F. Yeager, has developed a new muskmelon for North Dakota conditions. It is a large melon with superior quality. At Fargo it is ready to pick in July and early August.

Truck crops raised in central Washington are being put up in frozen pack at a factory in Pasco.



ELECTRICITY COST LOW

In Washington 40,060 farms, or nearly 48 per cent of the farms in the state, have electric service. In Oregon 17,839 farms, or about 35 per cent of the state's total have electric service. About 36 per cent of Idaho's farms, or 13,433, have similar service.

Washington residents pay an average of 2.7 cents a kilowatt hour of electric service. In Oregon the cost runs slightly higher. Idaho residents pay an average of 3.5 cents per kilowatt hour. Washington and Oregon farmers buy electricity at the lowest rates available in any state in the Union. The Idaho rate is the next lowest. The United States average cost per kilowatt hour is 5.39 cents.

The three states named lead the nation in average annual amount of electricity consumed per user and in the low cost per kilowatt hour. In Washington farmers use an average of 1,700 kilowatt hours a year.

The service is put to many uses—from washing clothes to turning grindstones.

HENS UPSTAIRS

Here is an example of triple-deck poultry farming. Grant Sloop & Son, poultry raisers near Portland, in western Oregon, house 3,000 laying hens under one roof 96 feet long and 36 feet wide. The answer to this seeming impossibility is a modern three-story structure, with 1,000 hens on each floor and the equipment and floor plan arranged to minimize work.

All feed for the two upper floors is carried up on a small homemade elevator driven by a one and a half horsepower electric motor, which is capable of lifting at least half a ton at a time. The hens all are fed from a central runway on each floor by troughs placed about four feet above the floor. The hens reach their troughs standing over wire screens stripped with slats, which also serve as roosts. Thus the hens are on the screens about 70 per cent of the time.

Water is piped to automatic watering troughs, two being used for each 500 hens. They are so constructed that electric water warmers may be installed during winter

Mustard Seed

Several hundred acres have been contracted in western Montana for growing mustard seed which is used in making prepared mustard for cooking purposes, for salad dressings and seasoning in pickles. Two varieties of cultivated or tame mustard are used and under field conditions these are reported to be susceptible of control so they do not become the weed menace that commonly results in the case of the wild mustard.

months if needed. All lighting is effected from the center aisle.

Owners of this modern poultry house find the arrangements offer advantages of accessibility, compactness, convenience, cleanliness and economy. The Sloops report they always have a ready market for their eggs.

FOREIGNERS BUY SHEEP

A number of unusual sales have been made by Coffin Brothers, sheep producers in central Washington. A few months ago they sold 40 head of registered Romney rams to representatives of the Russian government, to be used in improving the quality of stock in Russia.

Previous to the Russian sale, Coffin Brothers had shipped a large number of Romney ewes to Kentucky and supplied 600 head of ewes and 35 rams for the Matanuska resettlement colony in Alaska. Some of the Coffin foundation Romney stock came to this country 20 years ago from New Zealand.

WESTERN RANGE LAND

There are about 60,000,000 acres of range land in Oregon and Washington east of the Cascade mountains. The range livestock industry of the area is valued at approximately \$125,000,000. About 36,000,000 acres of the range is semi-arid, untimbered and is chiefly valuable for spring and fall grazing. The remaining 24,000,000 acres are mountainous, timbered range. This range, due to higher elevation and more rainfall, produces forage best suited for summer grazing. Over half of the mountainous range is in the national forests.

EGGS FOR EASTERN BUYERS

During 1936 carloads of eggs shipped out of the state of Washington totaled 1,647 compared with 1,388 the previous year. Oregon poultrymen shipped 303 carloads to markets outside the state in 1936. New York City last year continued to be Washington's best market for eggs, receiving 673,658 cases. The four markets—New York, Chicago, Philadelphia and Boston—took 792,570 cases of eggs from Washington. New York City consumed 243,462 pounds of dressed poultry from the western state. California poultrymen in 1936 shipped less than half as many eggs to outside markets as did Washington poultrymen.

A great deal of progress has been made toward improving the poultry industry of the North Pacific coast country. Marketing interests, the poultrymen and Washington State college have continually worked out improvements in feeding and management and in selling. One of the latest is the breeding of new strains of White Leghorns resistant to disease. Wayne Miller, poultryman at Western Washington Experiment station, is enthused over prospects of developing such a hardy strain. The work along that line has been in progress for five years and in another five years he hopes to have available a family of hens that will die of nothing short of old age or accident.

FARM FOR SALE

The following describes a Minnesota farm for sale in territory served by the Northern Pacific: M-163—360 acres, 4 miles from nice town and good trading center, west central Minnesota. Or owner will sell 120 acres or 240 acres of this farm as desired. Good stock farm with good buildings, lots of feed, pasture and water. Barn, 32x60, room for 75 tons hay; silo, 14x30; milk house, granary, garage, chicken house, drinking cups in barn. Good six-room house with cistern and sink. Will sell 360 acres at \$25 per acre, or 240 acres with buildings at \$28 per acre. Small down payment, balance terms, 3 per cent interest. Will consider unencumbered small place or town property as part payment.



FARM AND HOME OPPORTUNITIES

You may select from this list of typical bargains or ask us for other propositions suited to your needs. Additional information, including addresses of the owners, will be furnished on request.

MINNESOTA

M-70.6—80 acres, 9½ miles northeast of Barnum, in Carlton county, north-eastern Minnesota. On R. F. D., good highway, school bus and cream routes, ½ mile to church and railroad station. About 23 acres cultivated, in timothy and clover, balance good wood pasture. Two-story, seven-room house with full basement. Large barn for 8 cows, team, pigs and calves, 20-ton hay mow with fork. Hoghouse, icehouse, garage, woodshed, implement shed, flowing well with water piped into house and barn. Apples, plums and wild blueberries. If sold before September 1, 1937, will include half of crops. Price \$3,800; terms.

M-166—320 acres on state highway, 5½ miles from good town and trading center, west central Minnesota. 85 acres cultivated, about 35 acres in meadows, balance pasture and woodland. Two-story, eight-room house, stone basement under part of house, outside entrance. Barn built in 1931, capacity 15 cows and 6 horses. Also good hen house, granary, machine shed and garage. R. F. D., school bus, phone line, nice neighborhood. To settle estate, offered at special price of \$13.50 per acre. Terms: Not less than one-fourth cash, balance in yearly payments, 5 per cent interest payable annually.

M-43.5—73-1/10 acres on river and graded road, 4½ miles from nice little town, in Hubbard county, northern Minnesota. All new buildings—six-room house, wired for electric lights, water inside at sink, good cellar, cemented. New barn, large haymow, room for 12 head stock, well in barn. Chicken house, garage and workshop, ice house, woodshed, hoghouse, etc. Nice grove of large pines around buildings. About 21 acres cleared and cultivated, about 5 acres new clearing, balance timber and pasture land, fenced and cross-fenced. Good mixed timber and considerable saw timber. House has large fireplace and built-in features. An attractive farm or summer home, close to three good fishing lakes. Owner says buildings could not be built for price asked for entire farm. Price, including crop, \$2,600. Terms: \$2,000 cash, balance terms.

NORTH DAKOTA

N-73.2—On edge of Red River valley, eastern North Dakota—320 acres, 1 mile from good town, schools, churches, etc. Fair, seven-room house, fair barn. 32x50; chicken house, granary and

well. Nice level land, about 240 acres cultivated, balance small timber and pasture. Productive silt loam with clay subsoil, no stone, sand or gravel. Adapted to heavy production of corn and small grains. Price only \$20 per acre; suitable terms. Taxes run around 50c per acre annually.

N-40.6—160 acres in mile long strip, small set of buildings located in 2½-acre timber lot on James river, 2½ miles from market, in Stutsman county, east central North Dakota. 90 acres cultivated, balance pasture and wild hay land. Pasture has good spring. Northern Pacific Ry. separates about 2½ acres from balance of farm. This used for building site and natural timber. Sell for \$10 per acre.

MONTANA

PL-291—360 acres with 80 acres cultivated and irrigated, private water, balance pasture. Located 10 miles west of good town, in Mineral county, western Montana, on main highway. Large log house and barn. Good fencing and cross-fencing, 2 miles to school. Price \$1,800 with \$900 cash, balance terms. Or will discount \$400 for all cash.

PL-292—120 acres, in Flathead valley, western Montana, on highway, 8 miles from Polson, county seat. 20 acres now under cultivation, nearly all could be cultivated, good pasture, sub-irrigated, no buildings. School bus to Polson. Price \$3,500; good terms.

S-156—640 acres, in Clarks Fork valley, 2½ miles from Heron, Montana, school, church and Northern Pacific station. 100 acres grain and hay land, balance grazing and timber. Well watered with springs and creek. Seeded to tame grasses. Plenty of wood and building material. Woven wire fence and cross-fenced. House, barn and sheds. This farm and stock ranch offered at less than \$10 per acre. Price \$6,000. No encumbrance.

S-16—29 acres, good level bottom land, bordering river on north, creek on east. Land is all irrigated, water right with place. Log house, 16x32; log barn, 16x24. Located ¼ mile from Noxon, Montana, grade and high schools, church, store, etc. Price \$1,550. \$450 down payment, balance terms. In Clarks Fork valley.

IDAHO

I-70.8—164 acres with 41 acres cultivated, plenty of range. Five-room house with bath, large barn, sheep sheds, sheep-tight fences, springs, ½ mile lakeshore. Price \$3,000, including

\$1,000 mortgage. In vicinity of Coeur d'Alene.

I-51.3—81 acres, 5 miles from Moscow and state university. Six-room house, two barns, other buildings. On good road and about 1¼ miles from school. 65 acres cultivated. Encumbrance on place reduced to about \$800, federal loan. Price \$35 per acre. About ¼ cash, balance yearly payments.

WASHINGTON

W-111.5—40-acre partly improved ranch, all good bottom land, level, no rock or gravel, productive soil, small creek. 5 acres cleared and cultivated, 3 or 4 acres surfaced cleared and good pasture, balance mostly pasture. On cross roads, about 2 miles from Salkum, Wash., and National Park paved highway, 20 miles from Chehalis, county seat of Lewis county. School bus, mail service, etc. Four-room shack, woodshed, root house, old barn for 8 cows, few fruit trees. Price \$1,600, including 5 good milk cows, 2 heifers coming fresh, 3 young heifers, stump puller outfit, considerable household goods, etc.

W-201.0—80 acres, 5 acres cultivated, four-room house, barn, other buildings, clay loam soil. Located 12 miles south of Centralia, southwestern Washington. Price \$1,700. \$750 cash, balance terms.

W-200.9—In Clarke county, southwestern Washington—80 acres, 4 miles from nice little town, on La Center-Amboy highway. 30 acres cultivated, 8 acres prune orchard. Five-room house, barn for 20 cows, well water for house use, running water for stock, clay loam soil. Price \$4,000. \$500 down payment, balance terms.

OREGON

O-102.3—44-acre western Oregon farm, in Willamette valley. 30 acres cultivated, 14 acres timber and pasture, fine spring, on good road near school, free high school bus, 4 miles from town. Six-room house, barn, garage, small chicken house, family orchard, electricity. \$3,600; half cash.

BUSINESS AND INDUSTRIAL OPENINGS:

In western Washington—shop for blacksmith or auto repairing, good location in small town serving large farm territory. Sell for \$2,000; some equipment extra. Also gas station on 7-acre tract, springs, small creek, groves, on main Pacific highway, living quarters combined with station. Would make nice resort if developed. Price \$2,500; terms.



Frozen arch of earth at the site of Grand Coulee dam on the Columbia river which holds back a slide while construction is in progress. Brine pipes going down through the silt are seen at the left over the entire area of the frozen dam. The pipes are white-surfaced and curved at the top. In front is the base of crevice which the slide filled. It is now cleared out to bedrock. Thus a dam of frozen earth was effective.

A DAM OF FROZEN EARTH

A wall of frozen earth is serving the contractor who is building Grand Coulee dam in the Columbia river, state of Washington. Glacial silt overlaying bedrock at the site of Grand Coulee dam, particularly on the east side of the river, has presented excavation problems in preparation for pouring concrete.

In one gulch on the east side, leading into a bedrock area at an elevation of 175 feet below average low-water, the glacial silt, mixed with seepage water, was very difficult to handle. The problem finally was met by freezing an arch of the wet glacial silt extending across the gulch at a position above the point where excavation was desired.

The frozen arch is 20 feet across at the base, which is at an elevation of 800 feet above sea level, and consists of a series of brine pipes driven through the silt at intervals of a few inches. An ammonia refrigeration plant keeps the silt

Velvet Berry

In Marion county, Oregon, Philip Steffes discovered a blackberry much like the Oregon evergreen variety, except that the canes have no thorns. He has grown it for eight years and the New Jersey Experiment station has tried it for four years, both finding that it reverts back to the thorn type only occasionally. Mr. Steffes gets yields of three to five tons to the acre under particular cultural conditions. The new variety is called Black Diamond.

frozen and this block of solid material holds back unstable material behind it while excavation is completed for the east section of Grand Coulee dam and concrete poured. When the latter has been accomplished, freezing can be discontinued, since the base of the Coulee dam once installed will make it possible to continue without further serious complications at that position.

The frozen wall represents less expense than any other way conceived of handling the sliding, grease-like material.

THESE FARMERS CAN AFFORD NEW CONVENIENCES

(Continued from page 3)

irrigation works, bringing to the valley a better supply of water and making possible expansion of intensive agriculture. The valley continues to go ahead in development of its cropping program, markets and facilities for the use of its farmers. There are more opportunities for good farmers, altho it is not possible today to start on such limited capital as was the case a few years ago.

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