in this state. G nervata is most impor-tant. This is called nerved meadow When out early it is not excelled for as seven tons per acre have been fur-srass. It is found in the Coast moun-tains, specimens having been gathered in mix with clover, for it matures at the tains, specimens having been gathered in that region measuring over seven feet in height. Cattle grame upon the grass both when it is green and when made into hay. is another grass found in the

valleys and along the streams, but is not confined to these locations. It is valuable for hay and pusturage. The grass

valleys and along the streams, but is not confined to these locations. It is valuable for hay and pasturage. The grass to the serious spreads by means of underground stoma; and when set in a meadow it is a good practice to break up the roots every two or three years with a sharp harrow. The broken roots or stems take new vigor, and soon present a stronger growth than the parent plant.

Tall out grass, Lincoln grass, everycen grass, are names given to a very valuable grass for the western portion of this genus. The water portion of this genus and in thingy places on the hillisdes, it sends its roots deep into the ground, thus enabling it to withstand extremely dry weather. It grows all Winter, in the Willamette Valley, furnishing abundant pasturage. When sown with clover, and other grasses, it makes excellent hay, it matures at the same time as clover. Farmers grow this grass in woodland pantures where the time the same time as clover. Farmers grow this grass in woodland pantures where the time the same time as clover. Farmers grow this grass in woodland pantures where the time the same time and every been plowed. Under such conditions, the grass for such localities, but it is of very little value for dry land, and its peaks furnishes valuable passive grass for such localities, but it is of very little value for dry land.

Poa tenuifolia is one of the bunch-will and the valleys and in the foothilis.

Common verth or tares is quite extensionally and the columbia River. It is a valuable forage plants. The vetch is found in the valleys, but it is most abundant and when dry, during the latter part of the sension and when dry, during its latter part of the sension and when dry, during the latter part of the sension and when dry, during the latter part of the sension and when dry, during the little grass (goa annua), found on the roleded, on graverly walled and the valleys but it is most abundant in the mountain pastures. It starts early, producing an early but the sension annual, found on the forage plants. The walle

same time.

Blue Grass and the Clovers-

** COMPARATIVE VALUES OF DAIRY PRODUCTION IN OREGON

DAIRY EQUIPMENT	1898.		1809.		1900.	
	Quan-	Value.	Quan- tity.	Value.	Quan-	Value.
Butter, pounds Cheese, pounds Milk supply, gallons No, dairy cows No, cheese cows Household milch cows Acres of land Buildings, etc.	977,618 8,000,000 47,000 1,985	\$2,199,640 167,427 1,825,000 175,000 81,425 575,000 1,571,500 46,200	10,999,251 1,222,023 10,000,000 60,750 4,030 18,750 187,810	\$2,199,850 147,729 0,287,352 1,400,000 102,001 468,750 1,966,875 57,790	1,466,426 10,500,000 72,900	\$2,639,830 175,977 2,297,220 1,762,800 122,400 690,516 2,358,720 68,600
Total values		\$7,383,295		\$8,639,117		\$9,911,741

the coast.

Coast Mountains.

but the yield is light.

sown with it, to cover the ground more completely for, like many other coarse grasses, it grows in tussocks.

Of hair grass there are several species, but the most common and archable the

They are found high up on the mountains, in the valleys, on the plains and along but the most common, and probably the most important in this state, is D. caes-



E. H. Cooper, Clerk Clackamas mty, Oregon City, Or.

pitosa. This is one of the common bunch grasses found in the eastern part of the state. It grows at very high altitudes, Velvet and Orchard Grass.

Velvet grass scarcely needs an intro-duction to the Oregon farmer, for it is so widely distributed that it has become so widely distributed that it has become well known. It is a grass introduced from Europe, but is quite theroughly naturalized. It is inclined to grow in bunches, and does best on low, wet land; yet it is found on all kinds of soil in Oregon. It is quite a favorite pasture grass in the red hill lands where fern abounds. It seeds readily, and withstands extrance or drought better than most grasses found in these localities. most grasses found in these localities. Its chief value lies in its power to thrive where other and better grasses fall. Hay made from this grass is inferior to that of most other grasses. It is found on the summits of the mountains near the coast and far up it the Cascades.

Agrostis is one of the largest and most widely distributed genera, found in the state. It contributes some of the most valuable grasses found in Oregon pas-tures and meadows. These grasses are commonly known under the name of red top. A vulgaris is extensively used in the low meadow lands along the streams and rivers. It makes a thick sod on soft ground, thus rendering the tramping of stock less injurious. Hay produced from this grass is of excellent quality, and free from dirt or dust when well cured.

A stoienifers, a variety of A canina, produces an excellent turf on white land. As indicated by its name, it has the babit of spreading over the ground or stealing along the surface with its spreading culms. The culms do not grow high, but the leaves and stems furnish a good bite for sheep and cattle. This grass is well adaptes to the formation of permanent pastures on the prairie lands found in the large valleys of the state. Several species of bluejoint are found in this state and they contribute very

largely to the nutritive pastures found in the eastern portion. Cattlemen report this grass abundant in many portions of Eastern Oregon, where it furnishes ex-cellent feed during the Fall and Winter, when the finer and smaller grasses iall to produce pasturage, owing to the show or extreme cold.

Orchard grass, though introduced from Europe has become thoroughly Ameri-canized, and is almost a native-Oregonian. Europe has become cantized, and is almost a native-Oregonian. There is no state in the Union where orchard grass does better than in Oregon Samples measuring over eight feet high were sent from Oregon to the Chicago World's Fait. It is found widely distributed with the Fail it will make a crop the following year. Hay made from this grass, if cut early, is good in quality, and the yield is very satisfactory.

Clover, "the triple-leaved benefactor representatives in



of Gregon City, Gr.
Closely related to clover is aifaifa, which is sometimes called clover. This plant thrives in many parts of the state.

making an important adjunct in furnishing pasturage and hay. In Eastern and
uted throughout Western Oregon. It
grown on the red hill land and in the
valleys. It makes good pasturage late in
Fall and eatly in Spring. There is
searcely any grass that will withstand plant. It does much better, of course,
its target and the body at the same time neat
throughout the body at the same time neat
ing aparts of the state. It arough the body at the same time neat
throughout being applied. Results of treatment are
proving that nothing equal to this radiator has ever been brought into use for the
treatment of chronic diseases.
Besides the radiator they have in use
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treatment of chronic diseases.
Besides the radiator they have in use
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It is being applied. Results of treatment are
tor has ever been brought to the same time through the body at the same time tradiant.

Pon-This genus contains a very large umber of species found in Oregon. The Kentucky blue grass is the best known

While wild oats grass is considered a weed "when out of place," it is a source of much valuable food for stock throughout portions of this state and California.

If cut in season it makes good hay, and when green makes good pasture. If per-mitted to go to seed it is difficult to clear the ground of it, for the seed will

remain in the ground a long time without germinating, unless the condition

Timothy is one of the best-known grasses in this state, as in many of the older states. Timothy finds congenial soil and climate in many parts of Oregon, It

thrives best on the low black lands along the coast and in the river bottoms. Spec-imons of the grass eight feet in height have been gathered in the valleys of the

Foxtall grass is especially adapted to low, wer marshes and sloughs. Meadow foxtall is perhaps the most common spe-cies. It starts early in the Spring, usually

Clover, "the triple-leaved benefactor of mankind," has many representatives in Oregon. There are probably more than 30

Oregon. There are probably more than 30 named species of native clover found in Oregon. To this list of native clovers one might add red clover, asike and white or Dutch clover. The common red clover is grown in great abundance in some counties in the Williamette Valley, and no better growth could be found in any state. Farmers are learning to use it more and more, as the demand for trackerstates and feeding increases. That

stock-taising and feeding increases. That is can be grown successfully in most parts of the state there is little doubt. All of the country west of the Cascade Rauge

will grow clover successfully. Along the coast it grows aimost spontaneously. It is not uncommon to get a yield of three tons of clover hay per acre in the Willamette Valley, and this at a single cut-

ting.

Both sisike and white clover grow vigorously in the Coast Range. They are found in the mountains, foothills and along the coast. The great difficulty has been to get the seel to catch; but this is being gradually evercome, as a better ctate of cultivation pravails.

Yields of Alfalfa.

state of cultivation prevails.

BISHOP SCOTT ACADEMY. Training School for Boys, Founded

hardly any forage plant grown early in

the season that will compare with the

sagebrush land, which, at one time, was thought to be worthless.

A discussion of the forage plants of Oregon would not be complete without mention of the vetch and wild pea. There are several species belonging to the genera victa and lathyrus. Both of these furnish valuable forage plants. The vetch is found in the valleys, but it is most abundant in the mountain pastures. It starts early, preducing an early bits for stock.

Thirty Years Ago. Undoubtedly the most widely known of Portiand institutions is Bishop Scott Academy. This excellent school for boys was founded by Bishop Morris in 1870, un-der the name of the Bishop Scott Gram-mar Bchool. In 1887 the Armory was built, military discipline was introduced, the name was changed to the present one, the course of study carefully graded, and the institution, thus reorganized, entered upon a new era of usefulness and prosperity. In 1898 a manual training department was introduced, the value and im-portance of which has been already abun-

During its 30 years' existence, nearly 2000 puris its 8 years existence, nearly 2000 pupils have come under the influence of Bishop Scott Academy, and the character of that influence, as evidenced by the present standing in life of most of those pupils, affords just cause for pride, not only on the part of the instructors, but of the communities which they adorn and benor.

A very potent factor in molding a boy's character is the home life of the boarding school. Here the boy becomes simply "a case," his tendencies and his capabilities being carefully studied and trained. At home his training is often vasciliating— sometimes lax, sometimes unduly severe. But the boy who passes the years of his formative period in the dispassionate, impartial atmosphere of a properly conducted boarding-school comes out self-poised, self-reliant and well equipped for future work.

No institution of learning can, in the full sense of the term, be successful, which falls to impress its own peculiar stamp or personality upon those entrusted to its guidance. The truth of this has been strongly emphasized in Bishop Scott Academy. In 1878, Dr. J. W. Hill, the present head of the academy, took charge of the school, and, in what has practically cies. It sterts early in the Spring, usually heading out early in April, in the Williamette Valley. It does not cover the ground with so complete a turf as many of the smaller and finer grasses. Some species are found high up in the meuntain meadows, and on account of this the grass is sometimes called mountain timothy. It makes a fair quality of hay, but the wield is light. tary discipline into the school. And he

BISHOP SCOTT ACADEMY, PORTLAND

physical individuality has, for 21 years, that sickness is the consequence of wrong

habits of life,

Another principle is that the Divine en ergy which dwells in each human being is the healer as well as the creator of the body; that the office of the physician

and nurse is simply to co-operate with this healing power by the use of those agencies which scientific experiment and practical experience have shown to be most potent and permanently efficacious. All rational remedies are used, including

All rational remedies are used, including baths of every description, electricity in all forms, including the famous electric light bath. The various manipulations, such as massage, salt glows, oil rubs and friction, are administered by carefully trained manipulators. The institution has a corps of well-trained physicians and nurses of both sexes and is well equipped to care for those suffering types various.

to care for those suffering from various

Over 400 species of trees are known in the Philippine Islands. Of these, about 50 have commercial value.

\$------

been making itself felt, in shaping the energies and talents of the boys, who now, well-balanced, successful, honored men, carry into various walks of life the im-press of that judicious training.

FIRST IN USE.

A Recent Invention Brought Out by a Portland Man.

Having heard of a new device that is in use at the Dekum Treatment Rooms, the writer called to see what there was to

the writer called to see what there was to it, but always finding the rooms occupied was obliged to make several calls before a favorable opportunity was found. Finally being shown into the sixth room occupied by that institution, on the seventh floor of the Dekum Building, there was to be seen what is known as the incandescent Radiator, by means of which direct heat and radiation from half a hundred electric lights, either singly or both at the same time can be applied. The radiator consists of a cabinet six or seven feet long, built on the horizontal plane, with an air chamber underneath, and a cover set on hinges which can be raised from one side to admit the patient who lies with his head in the open air

who lies with his head in the open air while taking treatment, which is a great advantage over the box sweatroom. The

temperature can be raised to a very high

degree of heat without injury to the pa-tient. Radiation is so complete in the device that light is thrown entirely through the body at the same time heat

is being applied. Results of treatment are proving that nothing equal to this radiator has ever been brought into use for the treatment of chronic diseases.

Besiden the radiator they have in use



WILLAMETTE IRON & STEEL WORKS

The above illustration gives a very good general view of the plant of one of the most representative and enterprising industrials of the city. This concern since its recent reorganization has greatly broadened its field, and is doing much toward bringing the home production of high-grade machinery more nearly on a plane with that of the older establishments of the East. All the departments of a well-equipped engineering works, including machine, blacksmith, patternshops and foundry combined with boiler-making plant, are here conveniently arranged in one of the most central portions of the city, with excellent railroad shipping facilities. Ready communication with the marine end of the business is had through the retention of the old site of the original Willamette Iron Works, which, with its deep-water front and convenient location, insures a valuable

the retention of the old site of the original Willamette Iron Works, which, with its deep-water front and convenient location, insures a valuable reservation to meet the growing needs of the business.

Reference to the old Willamette Iron Works calls to mind the palmy days when that business had a practical monopoly on hearly all the marine work of the Northwest, and gloried in a well-carned reputation for sterling work and good prices. Evidences of the former are still to be found in the machinery for most of the river steamboats, and the memory of the good prices mellows the disposition of the old owners. These happy days in the history of the iron business have now been succeeded by a period of keen competition, close prices and rapid processes, and out of the changed conditions has grown the necessity for the present plant of the Willamette Iron & Steel Works.

The writer recently availed himself of the welcome extended to all visitors, and was much impressed by the high efficiency of the modern tools which have been installed and the large force of skilled mechanics who contribute their share toward the rapid development of the industries of the

also the needle spray, sinusoidal current, sweats, packs, salt glows, Swedish movements, oil rube, massage, etc.

Miss Ida Wieland superintends the ladies' treatment. Hours 9 A. M. to 3 P. M. Bögar Belknap has charge of the men's treatment. Hours 5:50 to 9 P. M. There is a doctor in attendance to advise There is a doctor in attendance to advise with and prescribe for the patients. The managers invite the public to call and inspect the appliances.

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Noted Health Institution Located on First and Montgomery Streets.

Of rye grass much might be said, for it seems to do especially well under soil and climatic conditions in Oregon. English rye grass has won a place among the standard grasses for pasture in some portions of the Willamette Valley. In Its purpose is to represent to the Pacific

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PORTLAND, - OREGON

Steel Roofing

— ASTOUNDING DAIRY RESULTS =

The results of farmers engaging in improved methods of dairying are so remarkable as to be almost incredible. It is not necessary to refer to Eastern or Middle Western states for an example, for we have them right on our Coast. Take Rumboldt County, California; during the past 10 years the farmers have grown independently rich, many of them renting their farms and living at ease on their rental; farm property has risen from \$50 to \$550 per acre, and you cannot buy land in the creamery belt for less. These are only some of the results. There are others. You can learn them, and find out how to be successful in dairying, by writing or calling on

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