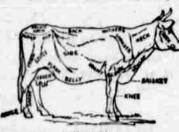
SOME ANATOMICAL AND PHYS-THE DAIRY COW.

1010101010101010101010 Intelligent and progressive farmers and dairymen are becoming more familiar with the fact that milk and butper producing qualities of cows are acempanied by a general vigor, conformation, temperament, fineness, bear ing and other features that are quite cupy a more prominent position is leg-characteristic, says a bulletin of the matter will convince the foreign Storrs experiment station. The accom- consumer that he is not being deceived, panying figure shows the outline and but is buying cheese that is exactly general features of a profitable cow of what it is represented to be,

The general constitutional vigor of the cow is of primary importance, and bad a Jersey beffer the butter of which of nearly as great importance are em that injured by white spots, supposed that they cannot be excluded from the cient digestive organs, large and well to be due to minute clots of curd, says formed milk organs, strong heart and The Rural New Yorker. The condition good blood circulation, large, strong was remedied by giving every night lungs and a highly developed nerve one-half tablespoonful of cooking soda. system. For convenience in the pres- We have submitted this to Professor ent discussion these are called the es- Law of the New York State Veterinary sential organs and are considered here college, who says if the white spots with some remarks concerning their are really minute clots of curd the explanation can be made on a purely chemical basis. The most common

Milk is a manufactured aticle produced by the cow from the food which cause of clotting is the development of she consumes. The capacity of a cow for producing milk depends largely upon her capacity for digesting food salts especially determine a firmness and assimilating it into her tissues. For the accommodation of a large and efficient digestive apparatus a good dairy cow should have a long, deep and wide barrel, with well sprung ribs. This form of middle piece gives ample room for the storage of food and for an apparatus capable of disposing of large quantities of the coarse, bulky

fodder which the cow consumes. The milk organs are quite intimately concerned in the productive capacity of the cow, as it is in these that the milk and butter fat are finally elaborated from the food. It is not altogether clearly understood how the milk is made in the gland, but it seems quite probable that it is produced by the epithelial cells within the udder. So far as is known, the quantity of milk that can be produced depends in a large part upon the number and activity of



DAIRY TYPE. these cells. The number of such cells is limited by the size of the udder and the amount of fatty tissue it contains The dairy cow should therefore have a large udder capacity—the larger the better but the size of the udder ab sot be due to any large amount of fat flesh. There should be an elasticity of the tissue, with a shrinkage of the odder when empty. The udder should have considerable surface, extending far forward and well up behind. It should be well balanced and symmetrical in shape, indicating good development in all quarters, for the more perfectly developed the organ is the arger the amount of milk it will be likely to yield. It should be spread considerably from side to side also, while the tests should be even and squarely placed. To make room for such a capacious, well developed udder the hind legs of the cow should be wide apart, the thighs should be thin and the flanks high arched.

The digestive tract prepares the food for assimilation into the tissues, the udder elaborates the milk, the heart forces the blood with its load of food and exygen through the body, the lungs supply exygen to the blood and nove from it the products of the oxidation which takes place in the body. but the brain and nerve system are seerned in all these operations. Through the influence of this system the activities of all the organs are aroused, guided, controlled and har-menised.

In the cow the heart and lungs are trouble raising calves on separaever active. The digestion, absorption and assimilation of food, and perhaps the mysterious elaboration of milk, are constantly going on. Collier estimates that a cow giving an average quantity of milk produces, on an average, 138.

210,000 fat globules per second during the calf the first few days on the milk sech 24 hours. This and the secretion of its dam. This is set in pans or of the other constituents of the milk grocks for 12 hours, and then the cream the structure of activity in the milk organs alone and suggest the suggesting of the milk is warmed to so degrees and given to the calf. When seed of a highly developed nerve systhe calf is 2 weeks old, it will eat bran The more pronounced of the outward signs that indicate this nerve development are a bright, lively and nent eye, this prominence causing a dished face; a wide forehead; a wide junction of the skull and spinal column, indicating a large brain; a prominent backbone, giving soom for a well developed spinal cord; a long, slim tall, and considerable mergy and vigor and style of action.

Process Butter.

Here is a description of process but-ter: "This butter is made from old, rancid and useless dairy butter purchased from country store keepers in the states farther west and shipped in old barrels, tobacco pails, shoe boxes, etc., which appetizing mess is put through a process of boiling and renovating to remove the nauseating odors and through other treatments which have brought it under the ban of the pure food laws of several states, after which it is worked over in sweet buttermilk, which gives it temporarily a fairly clean flavor." See that this stuff is not worked off on you by your gro cer. The "green" woods are full of it. New York Press.

OUR CHEESE INDUSTRY.

of Misrepresentations. A leading cheese exporter who is noted in the Boston Transcript states which produce the June butter flavor, that the total production of cheese in this country at the present time is fignew bulletin No. 21 he discusses variared at about 265,000,000 pound annually and that we export about 70,000,ous methods of compelling cream rip-ening by use of starters and butter 000 pounds of this amount. He figures that the home consumption is about \$60,000,000 pounds, including about 12,000,000 pounds of foreign cheese that is imported. If these figures are correct, our exports of cheese are very liked in this country as that produced much larger than they were last year. by natural starters. To make a natuwhich are given by the treasury bural starter, take the milk from a perreau of statistics at 38,198,783 pounds for the fiscal year of 1800. Most likely feetly healthy cow. The first few jets of milk are rejected and the rest drawn be Boston exporter's figures are exaginto a sterilized vessel, which is lumperated, but it is probable that we diately covered, heated to a proper shall show a considerable gain in our temperature and the milk passed through a separator. The skimmilk exports for this year. Since the cruthus obtained is set aside in r covered, ed" cheese our cheese has recovered sterilized ressel to sour. When well some of the reputation that it lost. There is a demand for further legislasoured, it serves as a starter for the cream ripening process. In conclusion. tion to prevent the counterfelting of well known brands of cheese in order to restore the prestige of these different makes. Congress is being arged to

live our cheesemakers the benefit of with the Canadian dairymen, who have sloped a large export trade in recont years at our expense. It is believed that with laws that guarantee the ineness of our cheese products we might recover the former high position they enjoyed in foreign markets. It is pointed out that American cheese is in some cases bought by Canadians and shipped to Great Britain as a Canadian product, fluding a ready market. Our rading air, water and soil everywhere, says Professor W. H. Conn in The says Professor W. H. Conn in The a considerable share of the foreign

acid media could not grow.

Green Alfalfa For Cows.

and comparing it with the amount pro

duced by an average yield of four tons

74 days. During this time these cows

rielded \$85.69 worth of butter fat and

kimmilk. The grain cost \$10.65. This

leaves \$75.04 to be credited to the

green alfalfa, amounting to \$1.95 per

is reliahed by the cows, and a field can

be kept in good condition for feeding

during the whole summer. Where pay

turage is abundant it will doubtless

not pay to feed green alfalfa, but

where pasture land is scarce or the

grass becomes short or dry green alfal-fa furnishes an excellent feed and will

to maintain a large flow through a

longer period of lactation. Pasturing

alfalfa will sometimes cause cows to

bloat. We did not have a single case

of bleat from cutting alfalfa and feed-

Calf Feeding.

for milk," says a correspondent of

Board's Dairyman. "I have used a

separator for three years and never had any trouble. I will give my plans

of feeding them. If it will be a benefit

and a little comment. After this it is

given separator milk until it is 6

months old, and then it is turned out on

grass. I raise nothing but the fall and

in the spring and summer for the pigs."

Imitation Cheese.

In 1899 the imports of imitation

cheese into Great Britain from the United States and Holland, the only

countries where it is made, were 5,087

bundredweight, which was less than

one-half the amount imported in 1897.

Popular sentiment has been so strongly

against the article on both sides of the

water that it was expected the trade

prices for pure cheese have, however,

induced a few concerns in Great Brit-

ain to handle the imitation stuff, and

Canada and the United States. To the

credit of Canada it may be said that

the law positively prohibits the manu-

Butter Cultures.

this country on the subject of ripening

cream is Professor H. W. Conn of Con

necticut, who is the introducer of the

system of artificial butter culture and

the discoverer of the famous bacteria

says The American Cultivator. In his

cultures. The Danish method is to

pasteurize the cream and then add a

pure culture of the right kind of bac-

butter which, however, is not so well

This produces a mild flavored

One of the acknowledged experts in

Field and Fireside.

early winter calves, so I have the milk

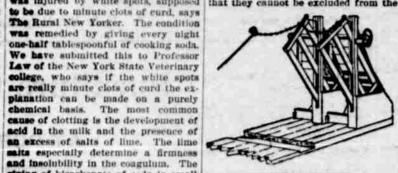
ing it green.

be found in the world and should have American Agriculturist. They multiply so rapidly that a single individual may produce 17,000,000 offspring in 24 hours. Their importance to agrirulture consists in their power of breaking up various compounds and also secreting from their bodies cermin chemical products. White Spots In Batter. A correspondent writes us that he

The kinds of bacteria which occur most commonly in milk may be called

BY TEMPERATURE AND

SURROUNDINGS.



giving of bicarbonate of soda in small CONVENIENT COW STALL doses tends to increase the secretion milk by any practicable means, but from the stomach and thus to improve their numbers may be reduced. There digestion, assimilation and secretion, are many uncommon kinds which including the condition of the milk.

The increased secretion from the stomthese may be excluded altogether by

That sounds like a recipe for making

ach implies a greater flow of hydro- care and cleanliness. chloric acid, but in the presence of soda

So far as concerns the milkman, bacthis is soon resolved into chloride of teria are an unmitigated nuisance, better for the Pennsylvania market. sodium, or common sait, which is no ing the cause of souring and other unlonger acid. The surplus soda sait cir-culating in the blood and secreted with common dairy bacteria as they grow Bisulphate of lime, borax, salicylic the milk to a certain extent bars the produce a chemical change in milk acid, benzoic acid, orris root, cottonearly formation of acid in the milk and sugar and convert it into lactic acid, seed oil, bicarbonate of soda, gylcerin, the resultant souring. Again, the soda which gives a sour taste and finally capsylic acid, alum, capsic acid, sulhas stronger chemical affinities than causes the milk to curdle. This change phate of soda, cows' udder, sulphuric lime and tends to take to itself the cannot be prevented, but it may be acid, pepsin, tailow, lard, salt, cornacids that go to make up the saits of postponed by reducing the number of starch, butyric ether, caustic potash. lime and thus to diminish the amount of lime present in the milk and the is by cleanliness, carefully washing caul, oil of sesame, oil of sunflower tendency to firm clotting. Even supposing the white spots should have
been due to the growth of a ferment

the milk vessels, and more attention to
the clean condition of the cow. The
second means is by regulation of temsecond means is by regulation of temsecond means is by regulation of tem-(bacterium), this must be a germ that perature. When freshly drawn, milk of manganese, stomach of pigs, sheep finds its proper home in a sour (acid) is about 100 degrees, a temperature or calf, nitrate of soda, mustard seed medium, and the increase of the alka-favorable to rapid growth of dairy bac-oil, nitric acid, dry blood aibumen, line soda, by hindering souring, would teria. Cooling the milk immediately sugar, butyric acid, bicarbonate of pot for a time keep the medium in a conchecks their growth greatly.

on in which such a germ fitted for Half an hour or an hour after milking mineral and organic poisons and abomthe cooling will be of very much less inations. During the summer of 1899 the Kanvalue than if done at once. During sas Agricultural college fed ten head of this half hour the bacteria have alcows on green alfalfa for a period of ready become very numerous. It some-74 days. During this time they receivtimes happens that night's milk keeps ed 77,145 pounds of alfalfa and 1,623 better than that of the next morning pounds of corn and Kaffir cornmeal On account of other experimental work because the night's milk was cooled at once, while sometimes the morning's it was impossible to retain the same milk is put into the cans at once and field of alfalfa through the entire period, and consequently we could not measure the area used; but, figuring taken into the city without cooling. The two chief agencies to prevent sour ing, then, are cleanliness and low temon the basis of dry matter produced perature. The same means will prevent all the other pacterial growth which causes slimy milk, tainted milk of well cured hay per acre, we find that it took 2.97 acres to keep ten cows

and other peculiar conditions. Milk from a healthy cow contains no bacteria, but by the ame it has reached the milk pall it is already contaminated to a surprising extent, containton, or \$25.26 per acre. Green alfalfa especially if hay is fed during milking. the milker to some extent, and his clothes are teeming with them. Milk palls not completely clean contain a not only keep up the flow of milk for the time being, but will help materially large number, but the greatest source of milk bacteria is the cow. The germs get into the teats through the milk ducts and between one milking and the next multiply rapidly. The first milk taken from the gland washes these

bacteria into the milk pail.

Cow Comfort. The man who at this season of the year provides some kind of shelter "I see a great many of your readers from the sun for his cows is going to receive a big interest on his investment, says Hoard's Dairyman. A cow to return a profit from the feed she consumes must be comfortable, and once tackled Trieste with sea songs, comfort is not found where the animal | with dire consequences. Another cov is required to stand under a blazing was called the Evangelist on account sun or hunting for a few mouthfuls of of her intense hatred for psalm tunes dried grass over a drought stricken 40 and Sankey hymns. She, strange to acre pasture. Butter is a slippery ar- say, preferred rollicking tunes.-Lonticle, and it slips away easily and don Chronicle. quickly when its factory is required to spend three-fourths of the time fighting files. A cow will appreciate shelter on a hot day as much as, if not more than, a man. Cool water and a corner sheltered from the sun, together with a breeze to keep the files away, will go as far toward filling the milk pail as heat, files, poor water and dried up pasture will produce the opposite. Costly shelter is not necessary, but some old boards and straw, together with a few hours' work, will go far in

producing cow comfort. Acration and Cooling. Makers of milk who have not yet learned the value of aeration and cooling are lacking in fundamental education of their calling, says The Breedwould gradually die out. Recent high er's Gazette. Cleanliness, accation and cooling will do much to preserve milk pure and sweet during the hot weather approaching and do away with the they have inquired for supplies both in temptation to use preservatives. Creamerymen are especially interested in spreading the knowledge of the benefacture or sale of the article in any of simple cooling apparatuses on the marfits to be derived from the use of the the provinces of the Dominion.-Farm, ket, as the success of their summer output depends on the condition of the milk when delivered to them.

CREAM SEPARATORS.

Their Advantages For Farmers With a Few Cows. Cream separators were not thought much of until recently, says William Swan in The Prairie Farmer. Now their use is becoming widely spread over the entire west. Every farmer who has six or more cows is obliged to have a separator in order to get good results from dairying, either on a large or small scale. The time is coming and is near at hand when every farmer who has few or many cows to milk will have a cream separator. Still there are any number of farmers yet who do not realize how much profit they are losing every day by not using a separator. They have heard others tell of their experience with a separator, but paid little attention only for the time being. One thing they object to is "paying such an exorbitant price," as they term it, for a separator, but they do not heaftate a moment at the price of any other piece of machinery used on the farm. The cream separator is used more than any other mathe professor observes that the use of any kind of starter will not make good is used twice a day 365 days in the cuttings and third year, and it brings in more dollars third year. than any other machine. Of course

there are other machines that must go A FEW hand to hand with the separator. I wish I could impress upon the mind of the farmer who has not a cream sepathe farmer who has not a cream sepa-rator this thought—that whatever you INTERESTING do you wish to receive as great a com pensation as you believe you have hon-estly earned. Now, you earn more than you really get for your milk at present. You must remedy that leak es quickly as possible for your own special benefit. I am not an agent for separators, as some may suppose, but would merely give some facts as regards them. The cream separator that will separate all of the cream and only the cream from the milk is the kind to buy. Here are a few benefits to be derived from the use of the separator: First, you can get the cream out of the immediately after milking, and thus you will only have to care for the cream; then the skimmilk can be fed in its sweet, warm state to the culves and pigs; second, the milk becomes cleansed from all particles of dirt when separated; third, the finest butter is made from the cream, and it will command the highest market price,

Notwithstanding the protests of the oleo trust and its friends in congress. the various formulas for making oleomargarine have been made public, and they are at least interesting, says the Philadelphia North American. One of the processes for making the kind of butter that is sold in Pennsylvania as a dairy product is thus deecribed in the patent office records; "The process consists in first forming soap emulsion of the fats or fatty oils with caustle soda; then precipiinte the lyes; then applying chlorinat-

soft soap, but when the color is added Here are a few of the constituents of

ash and caustic sods. One cent a It is necessary, however, to empha-size the need of immediate cooling. Hon for such a formidable army of

Skimmilk as an Insect Destroyer. It may not be generally known that skimmlik or buttermlik readily mixes with kerosene, forming an emulsion which destroys insects without the danger of injury to animals or plants on which they might be that might result from the use of the pure oil or of oll and water. We first learned of this from using this mixture for the scale insect, or mite, which causes scaly legs on fowl. We found that one or two dippings or washings with it would cure the worst case of scaly leg and leave the skin as smooth as when first batched. We never had occasion to try it for lousy animals, for we never had one, but we do not hesitate to recing from a few thousand to 150,000 ommend it, and we have lately seen its germs to the cubic incs. sometimes use advised for ticks on sheep, using a more. These are obtained chiefly from four sources—the air, the milker and We did not make our mixture so strong his clothing, the milk pail, the cow. of kerosene as that, but perhaps the They are always floating in the air, supported the stronger appli-especially if hay is fed during milking. cation than an insect so small as to be They are likely to be on the hands of scarcely visible to the naked eye .-

> Cown Taste In Music. I am not an agriculturist, but for ten rears I lived with an uncle who kept tows. We had several changes of cows and milkmaids during that period. It was noticed that certain milkmaids could draw more milk than others. Our most characteristic cow was Trieste, so named on account of her sad bearing, and it required the most touching of border songs to prevail upon her to give a decent supply of milk. The old woman who generally milked ber always wound up with "The Land of the Leal" to get the creamy ending of the milking process. A new hand

FAILURE WITH ALFALFA. Some Ideas About the Cause and How

In some sections of the west where alfalfa could be easily grown it has not become popular because, the farmers say, it will not succeed on account of being choked out by weeds or of failing to give a good se and cutting, with no third cutting at . From a study of the failures in grow-

ing this crop it seems that the method of growing is at fault, according to a writer in Farm and Fireside, who says: As a general rule, the ground is well prepared in the spring, the seed sowed at once and a good, promising stand obtained, but in the autumn what alfaifa there is hides among the foxtall and other weeds. Few or no plants appear the following spring, and the farmer after perhaps another trial or

two gives up. If this method were abandoned for the following, there would probably be more fields planted to this crop: Prepare the land-five acres is a convenlent area-a year or two previous to sowing by growing well tilled corn upon it. In the spring sow an early maturing crop, such as early planted soy beans or oats. Harrow the ground after this is off each two weeks until the autumn rains commence. Plowing will not be necessary unless the stubble in dense. This harrowing will improve the soil and kill several crops of weeds. After the ground has become wet sow the alfalfa. If it does not become wet, postpone seeding until the

The best method of seeding is to cross drill, the seed being mixed with an equal quantity of sand, bran or other substance, or the drill being set so as to sow only half the quantity at each operation. In this way half the seed is sown across the other half. As soon as the plants reach a height of six inches they should be mowed. This, if practiced two or three times, will kill weeds and help the alfalfa. It should be dene, weeds or no weeds. Don't cut alfalfa as you would clover -after full bloom. Cut before the maximum bloom and for the first spring cutting even earlier. This will insure heavier late cuttings. As final cautions avoid loose, dry ground, let the soil settle and become moist, avoid late cuttings and avoid pasturing until the

whether on busines of pleasure, they catulally want the tast service obtrimuble so far as speed, one fact and salety is concerned. Employees of the Wissumin Central Lines are paid to serve the jet die and our trains are operated so as to make cluss contraction with diverging flues at all innet-

Pullman Palace Sleeping and Chair Cars-on through trains. Diving Car so vice on xee led. Modeserved a la thete.

n order to obtain this first class service. task the leket agent to sell you a ticket over

THE WISCONSIN CENTRAL LINES. Direct connections at Chicago and Milwantee ha ad Fastern points. . . .

For full interestion call on your surest ticket again, or write Jan C. Pero, or Jas. A. Clore Gen. Pas. Agl., General Agent, Milwanker, Wis. 246 Stark

of have used Chemberhard Chem Choices and Distribute Remody and find it to be a great medicle . " says "I care read bloods fl x, I can in' spens has builty of it." This ion, if out price, of tope who use p. the galek cares which it off ets. it a favorite everywhere. For sale by the Delta Ding Store.

several chean reprints of an obsolete estition of "Webster's Dictionary." They are being offered under various names at a low price

dry goods depters, grocers, agents, etc., and in a few instances as a premium for subscriptions to papers.

Aunouncements of these compacatively Worthless

reprints are very misleading; for instance, they are advertised to be the substantial agriculture of a higher priced book, when in reality, so far as we know and besieve they are all, from A to Z. Reprint Dictionaries,

Long Since Obsolete.

The supplement of 10,000 so-called near words," which some of these books are advertised to contain, was compiled by a acritic-man who died over forty years ago, and was published before his death. Other almost additions are probably of more or less, value.

The Webster's Unsbridged Dictionary published by our house is the only meritorious one of that name familiar to this generation. It contains over 300 pages, with filtistrations on nearly every page, and bears our imprint on the title page. It is protected by copyright from cheap imitation.

Yainable as this work is, we have at vast expense published a thoroughly revised sidesesor, known throughout the world as Webster's International Dictionary.

Get the Best. Bustrated pumphlet free. Address

O 4 C. MERPIAN CO. Springfield, Mass. CASTORIA

in use for over 30 years, has borne the signature of and has been made under his per-Gat H. Teltar. and has been made its infancy.
Allow no one to deceive you in this. All Counterfeits, Imitations and "Just-as-good" are but Experiments that trifle with and endanger the health of Infants and Children-Experience against Experiment.

### What is CASTORIA

Castoria is a harmless substitute for Castor Oil, Paregoric, Drops and Soothing Syrups. It is Pleasant. It contains neither Opium, Morphine nor other Narcotic substance. Its age is its guarantee. It destroys Worms and allays Feverishness. It cures Diarrhoea and Wind Colic. It relieves Teething Troubles, cures Constipation and Flatulency. It assimilates the Food, regulates the Stomach and Bowels, giving healthy and natural sleep. The Children's Panacea-The Mother's Friend.

GENUINE CASTORIA ALWAYS 7 Bears the Signature of

The Kind You Have Always Bought In Use For Over 30 Years.

# It Has Never Failed



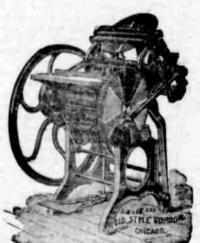
girl who accidentally drank a whole bottle. She was, of course sick at her stornach for a short time, but the sickness passed away, and then the child was in better health than ever before. I can understand why Acker's English Remdy is so efficacious, because I am a druggist. It is not a mere expectorant, it a strengthening invigorating tonic as well. While it heals the irritations the mucous membrane, it also builds up the constitution an I purifies the blood. I endorse it absolutely.

Sold at 25c., 50c. and \$1 a bottle, throughout the United States and Canada and in England, at 1s, 2d., 2s. 3d., 4s. 6d. If you are not satisfied after buying, eturn the bottle to your druggist, and get your money back. We authorize the above guarantee. W.-H. HOOKER & CO., Proprietors, New York

For Sale by The Delta Drug Store

# WE DO THE BEST JOB PRINTING IN THE COUNTY.

Prices Reasonable



Quick Work

Mail orders promptly attended to. We are still offering you the

INDEPENDENT and WEEKLY OREGONIAN,

one year for only \$2.00.

Address all ordess to

## THE ENDEDIS

Hilisboro.

Oregou.

Persit of Salt Lake, De ver, Fast smill pt. Weetly, Ornslin, F. p. m. Kanen, City, St. Fast/med Louis, Chiengo, A 7:00 p. m. Walla Walla, Spok-Spekane ace, Minneapells
Fiyer St. Pavi, Duintle,
0 500 p.m. Milwanker, Chicago Spekane

s p. m. Ocean Stemusaips, For Son Properson 4 p. m. in a.

Columbia River Ex Sundy To Astoria and way 4 p. m.
Saturalsy 1 Smill on ex. Sund

Willin ette Tve Es Sundy Oregon City, New 4 30 p. in long, Salom & way ex, Sund londings,

7 n. m. Willamette & Yam-Tue day
Thursday (oregree) by Dayton Mon Wed and Satur and way landings

Wills with River TuesThur Curvalities and way 4:30 p.p.s. and Sat. bandings a of Sat Ly Smale Ly 4 (30 m.) Riparia Stake River

Address, W H. HUBLEURT, Dodwell Carlill & Co. Pass, Agent. Gen'l Agts. Nor. Pac. S. S. Co.



THE SHASTA ROUTE -SF TON-

SOUTHERN PAC. CO.

Express Trains Leave Postlant Datter:

6.00 PM Lv Portland Ar 9:30 s m 8:15 a m Ar San transless Lv 8:00 PM

Abrive trains one of electations between Formula and Seven, terber, Marion, Jefferson, Airens, in rea. Shedda, Hal-vy, Harrishire, Lincolne, Ty, Eurone Callage Grave, Harry, Cakrand, and all the constraint of the Constant, and should be the Constant,

BONEBURG MAIL DAILY:

Fortland Ar 4330 r at Resolving Ly 7500 a to DINING CARS ON OGDEN ROUTE.

PULLMAN BUFFET SLEEPERS

Second-Class Sleeping Cars ATTACHED TO ALL THROUGH TRAINS.

West Side Division. BETWEEN PORTLAND & CORVALLIS.

Mail Train Dully (Except Sunday). Ar | 5:50 PM Lv | 4:20 PM Lv | 1:20 P \*\*

with trains of the Oregon Central & East-ern Hy.

Express Train Daily, (Except Sunday).

Through Tickets To all points in the Eastern states, Can ada and Europe can be obtained at low-est rates from C. E. B rewith agent or John H. Ganit at the Independent office K. KORHLER. Gen. F. & P. Ag't Manger, Portland

50 YEARS'

Scientific American.

MUNN & Co. 361 Broadway, New York PATENTS GUARANTEED

VICTOR J. EVANS & CO. WASHINGTON, D. C.



CASTORIA The Kind You Have Always Bought Bears the Chart H. Pletchire