THE NEWS RECORD

(Twice-a-Week.)

AN INDEPENDENT NEWSPAPER

[illegible]a Iowa News, established March 3, 1899.

Published Wednesdays and Saturdays at Enterprise, Oregon, by

THE ENTERPRISE PRESS

Office East side Court House Square

[illegible]ed in the Enterprise postoffice as second-class matter.

SATURDAY, MAY 8, 1909.

FARMERS' CO-OPERATIVE UNION GROWS RAPIDLY

A new farmers' organization, The Farmers' Educational and Co-operative Union, is making a strong bid for public favor and is having a wonderful growth wherever locals are started. Three or four will be organized soon in Union county.

Five strong locals have been organized in the Twin Falls district.

At St. Johns, Wash., they will build a warehouse; and an organizer says of the St. Johns local: "The Union has had a marvelous growth. We began a year ago with nine charter members and today have 125 of the best farmers in the organization. The union has saved us much money on wood, posts and fuel."

The Palouse, Wash., farmers' union has accepted the bid of the Beemis Bag company of Omaha for sacks in carload lots. The price is not made [illegible], but it is understood to be much lower than in the past. The union has secured the two inland warehouses there.

SELF-HELP WINS EVERY TIME.

From Pendleton E. O.

It is reported that farmers along the route of the proposed electric [illegible]oad from Oregon City to Mo[illegible] have subscribed about $75,00[illegible] to that enterprise, which will go far toward insuring its success. This is the way for farmers, dairymen and fruit raisers, in many such localities to help themselves, to increase greatly the value of their property and render their labor more profitable and their lives easier.

NOTICE FOR PUBLICATION.

Department of the Interior.

United States Land Office at La Grande, Oregon, May 3, 1909.

Notice is hereby given that Samuel A. Gotter, of Enterprise, Oregon, who, on October 19, 1907, made Homestead Entry, No. 15631-Serial, No. 05156, for W½ NE¼, and W½ SE¼, Section 22, Township 1 South, Range 44 East, Willamette Meridian, has filed notice of intention to make Final commutation Proof, to establish claim to the land above described, before D. W. Sheahan, U. S. Commissioner, at Enterprise, Oregon, on the 21st. day of June, 1909.

Claimant names as witnesses: Curtis J. Sanford, John E. Osterhoudt, John Romine, Charles Thomas, all of Enterprise, Oregon.

[illegible]5 F. C. Bramwell, Register.

NOTICE FOR PUBLICATION.

Department of the Interior.

United States Land Office at La Grande, Oregon, May 3, 1909.

Notice is hereby given that William W. Harris, of Enterprise, Oregon, who, on April 13, 1904, made Homestead Entry, No. 13533, Serial No. 04130, for the North-east quarter, Section 20, Township 1 South, Range 44 East, Will. Meridian, has filed notice of intention to make final five year proof, to establish claim to the land above described, before D. W. Sheahan, U. S. Commissioner, at Enterprise, Oregon, on the 21st day of June, 1909.

Claimant names as witnesses: Samuel F. Pace, Thomas E. Hudson, Marion L. Harris, of Enterprise, Oregon, and Samuel Wade, of Lostine, Oregon.

[illegible]5 F. C. Bramwell, Register.

RESTORATION TO ENTRY OF LANDS IN [illegible] National Forest. Notice is hereby given that the lands described below, embracing 236 acres, within the Wallowa National Forest, Oregon, will be subject to settlement and entry under the provisions of the homestead laws of the United States and the act of June 11, 1906 (34 Stat., 233), at the United States land office at La Grande, Oregon on June 22, 1909. Any settler who was actually and in good faith claiming any of said lands for agricultural purposes prior to January 1, 1906, and was not abandoned same, has a preference right to make a homestead entry for the lands actually occupied. Said lands were listed upon the applications of the persons mentioned below, who have a preference right subject to the prior right of any such settler, provided such settler or applicant is qualified to make homestead entry and the preference right is exercised prior to June 22, 1909, on which date the lands will be subject to settlement and entry by any qualified person. The lands embrace a tract of 155 acres situated in what will probably be, when surveyed, Sec. 16, T. 5 S., R. 48 E., W. M., bounded and described as follows: Beginning at a yellow pine tree 34 inches in diameter 44 links from the west bank of Imnaha River and 1.29 chains south of Mahogany Creek, extending thence N. 88° W. 22.80 chains; thence N. 52° W. 12.80 chains; thence N. 60° 45' W. 32.50 chains; thence N. 5° 50' E. 48.40 chains; thence S. 65° E. 26 chains; thence S. 44° E. approximately 2 chains to Imnaha River; thence [illegible] along west bank of river to a point due east of corner 1; thence W. to place of beginning. Variation 21° E. Said tract was listed upon the application of John W. Johnson, of Fruita, Oregon.

Also a tract of 81 acres in unsurveyed Sec. 25, T. 6 N., R. 46 E., bounded and described as follows: Beginning at a lone fir 3 feet in diameter whence claimant's house bears N. 53° W. 5.75 chains; extending thence S. 47° 15' E. 8.95 chains; thence S. 79° W. 41.90 chains; thence N. 39° 30' W. 33.73 chains; thence N. 79° 40' E. 41.40 chains; thence S. 29° 45' E. 11.75 chains to the place of beginning. Listed upon application of Mrs. A. H. Aplington, of Bly, Washington, who alleges settlement in 1899. Fred Dennett, Commissioner of the General Land Office. Approved April 9, 1909. Frank Pierce, First Assistant Secretary of the Interior. 6884

Home Course In Modern Agriculture

XIII.—How Animals Grow

By C. V. GREGORY,
Agricultural Division, Iowa State College

ANIMALS, unlike plants, can obtain none of their food from the soil, air or water, but must have it prepared for them. Without plants there could be no animal life, since animals are dependent upon them, either directly or indirectly, for food. A study of the way animals make use of this food in building up their bodies will help us to better understand the principles of feeding.

There are three main constituents of feeds—fats, carbohydrates and albuminoids, or protein. The fats are made up of carbon, hydrogen and oxygen. The carbohydrates, of which starch and sugar are familiar examples, are made up of the same elements put together in different proportions. Another of the carbohydrates is cellulose, or the woody fiber of plants. This is hard to digest, but some of it is used in animal growth. Albuminoids contain not only carbon, hydrogen and oxygen, but nitrogen also. In addition to these three constituents of food it also contains some mineral elements, which are commonly referred to as ash.

This ash is used in building up the bones, hair, horns and hoofs. The albuminoids also form a considerable portion of these parts of the body. Their chief use, however, is in building up the muscles, tissues and various organs. The fats and carbohydrates are used to furnish energy and heat. They are the fuel of the body. By uniting with oxygen they give off the heat and energy required to keep the body running, in much the same way that the elements of coal or wood unite with oxygen to furnish heat and power when burned in a steam engine. Not all of the fats and carbohydrates are burned immediately, however. Some of the fats go to build up fatty tissues. Some of the carbohydrates are changed to fats and used in the same way, and some are stored in the liver in the form of glycogen to be used when needed.

FIG. XXV—GROUND FEED IS DIGESTED MORE QUICKLY AND COMPLETELY THAN WHOLE GRAIN.

Before these various food elements can be used by the animal they must go through a process called digestion. The first step in digestion consists in taking the food into the mouth. Each class of animals has a different way of doing this. Watch the cows feeding in the pasture. They reach out their long tongues and gather in a mouthful of grass, breaking it off with a peculiar twist as it comes against their lower teeth. They cannot bite it off, since they have no upper teeth in front. The horse gathers in the grass with his lips and bites it off between his teeth. For this reason horses can eat grass down much closer to the ground than cattle can.

After the food is taken into the mouth it is chewed and mixed with saliva. This saliva serves two purposes—to moisten the food and to change some of the starch to sugar. This change is brought about by the action of enzymes which the saliva contains. These work in the same way as do the enzymes in a germinating seed, which prepare the food for the little plant.

Sugar and starch, as we have learned, are both composed of carbon, hydrogen and oxygen, the only difference being that they are put together in a little different way. The action of the enzymes changes the relation of these elements in the starch, arranging them in such a manner as to form sugar.

All the starch in the food must be changed to some form of sugar before it can be used by the animal in building up the various parts of its body. Since the food remains in the mouth only a comparatively short time, however, only a small part of the starch can be acted upon there. The rest is changed later, as we shall see.

The main purpose of the saliva is to moisten the food. This moistening, together with the chewing, reduces it to a moist, finely divided mass, ready to be swallowed and acted upon by the other digestive juices.

While the essential processes of digestion are the same for all animals, the way in which the work is carried on varies somewhat. The horse and the hog have but one stomach. As the food enters this a churning motion begins, which gradually forces the partially digested mass along toward the lower end. The saliva continues to act on the starch, and another fluid, the gastric juice, is poured out from the walls of the stomach. The main duty of this gastric juice is to change the albuminoids into a form in which they can be absorbed and used by the animal.

Cattle and sheep have a very large stomach, which is divided into four parts. Animals of this kind are called ruminants. When the food is swallowed it passes into the first stomach, which serves the purpose of a storehouse. Here the action of the saliva continues, and the water which the animal drinks softens the food to a considerable extent. After a time the food passes into the second stomach, which forces it back to the mouth, a little at a time. Here it is chewed thoroughly. You have often seen cows lying in the shade "chewing their cud." This cud is the food that has been sent up to the mouth by the second stomach.

After being chewed the food is swallowed again. This time it passes directly through the first stomach to the third. Here it becomes still further softened, finally passing into the fourth or true stomach. The function of the first three compartments is simply to prepare the food to be acted upon by the true stomach.

After leaving the stomach the partially digested food passes into the small intestines. Here it is acted upon by three fluids—the bile, pancreatic juice and intestinal juice. The chief use of the bile is to digest the fats, making them into a sort of a soapy fluid, in which form they are ready to be absorbed into the blood.

Both the pancreatic and intestinal juices act upon the remaining starch, completing the change into sugar. The pancreatic juice also completes the digestion of the albuminoids, in which work the intestinal juice may also take a small part. Another work of the pancreatic juice is to assist in decomposing the fats. The intestinal juice breaks cane sugar up into simpler sugars, such as glucose.

After the food has been digested the usable portions are ready to be absorbed into the blood. Digestion has changed the fats, proteins and starches into a form in which they are soluble. In this fluid state they pass through the walls of the stomach and intestines and are emptied into the blood.

The blood is taken to all parts of the body by the arteries, which subdivide to form tiny capillaries. These are so small and close together that a pin prick on the skin anywhere will pierce some of them. There are two main parts to the blood—the fluid of plasma and the red corpuscles—which give it its color.

Each part of the body selects from the blood the food materials which it needs. Thus the bones will take ash, while the muscles will take protein, to build up their wornout parts. The waste, broken down parts are burned, together with as much fats and sugars as are needed, to furnish heat and energy. All through the body there are thousands of little fires. To keep these fires going oxygen is used, and carbon dioxide is given off in the same way that a fire in a stove takes in oxygen through the lower draft and sends carbon dioxide up the chimney.

In the body the corpuscles supply the oxygen and carry away the carbon dioxide. The other waste materials, or ashes, are gathered up by a system of vessels called lymphatics, which empty into the veins. These veins carry the blood back to the heart. The change of the contents of the corpuscles from oxygen to carbon dioxide changes the color of the blood from a bright red to a much darker shade.

From the right side of the heart, to which the blood is brought by the veins, it is sent to the lungs, where the corpuscles exchange their carbon dioxide for oxygen and are ready for another trip through the body.

FIG. XXVI—SUPPER TIME.

Since oxygen plays such an important part in keeping up the fires that supply the body with heat and energy, it is just as important that the animals be well supplied with fresh air as it is that they have enough food. In the winter especially the stables are often closed so tightly in the attempt to keep them warm that the air becomes very deficient in oxygen. In consequence the work of the body is delayed and the general health suffers. By having ventilators in the roof, together with plenty of windows at such a height that the draft will not blow directly upon the animals, fresh air can be admitted and impure air drawn off constantly.

Dynamiting Niagara Falls.

(Popular Mechanics.)

For the first time in modern history the power of Niagara has been effectually checked, at least on the American side, this remarkable condicion being caused by nothing more nor less than its own frozen water. Pedestrians were able to cross at the point where the jam started, as well as on the very crest of the falls and along the ridge of ice in the gorge almost under the point where the great volume of water usually tumbles. During the period of the jam the water in the gorge was 40 feet below its average level. The great electric companies which have harnessed Niagara on the American side fought the jam with dynamite in an attempt to keep enough water running to provide them with the required power.

STALLION BOOKS.

Indispensable records for owners of stallions, description of mares, dates of service, time of payments and all necessary data, printed on good paper and strongly bound in boards with cloth back, for sale at this office, or sent postage prepaid on receipt of price, $1.

WALLOWA BRANCH TIMETABLE.

Eastbound		Distance from		Westbound	
a.m.		La Grande	Stations	p.m.	
9:45	Lv	0	La Grande	2:30	Arrv.
9:53	"	2.5	Island City	1:55	Lv.
10 00	"	8.3	Alicel	1:40	"
10 10	"	12.3	Imbler	1:25	"
10 30	"	20.9	Elgin	1:00	"
				p.m	
11:25	"	33.2	Pa'mer Jct.	11:35	"
11:30	"	33.7	Looking Glass	11:30	"
p.m.					
12:45	"	47.1	Minam	10:30	"
2:00	"	60.0	Wallowa	9:00	"
2:45	"	67.8	Lostine	8:15	"
3:45	"	78.0	Enterprise	7:30	"
4:45	Arr	83.8	Joseph	7:15	"
p.m.				a.m.	

LODGE DIRECTORY.

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K. of P. ENTERPRISE LODGE, No 94.
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MASONIC ENTERPRISE CHAPTER, No. 30, Royal Arch Masons, meets first and third Tuesdays of each month in Masonic Hall. All visiting Royal Arch Masons welcomed.
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ALMOTA CIRCLE No. 278, W. of W.

Miss Gertrude Dudley, director of woman's athletics, of the University of Chicago has declared big hats and pompadours unhygienic. To be up to date woman must be athletic. How will she manage it?