

FARM AND ORCHARD

Notes and Instructions from Agricultural Colleges and Experiment Stations of Oregon and Washington, Specially Suitable to Pacific Coast Conditions

Special to the American Type Founders Association

Oregon Agricultural College, Corvallis, Ore., Dec. 23.—The modern dairy barn has beautiful light, fresh air and provisions for sanitation and the comfort of the cow," said Professor R. R. Graves, head of the dairy department, Oregon Agricultural College. "The day of the old fashioned barn is past. It had little light, no ventilation except through cracks in the walls, and the stanchions were rigid so that when the cows laid down they had to keep their heads pointed straight in front of them. Or if they were tied to the manger with ropes they were forced to back into the filthiest part of the stall to lie down, and flanks and udders were plastered with filth. The old wooden mangers were traps where decayed feed and dirt were caught, later becoming breeding grounds for bacteria. In the same barn were stalls for the calves and horses.

"In the modern dairy barn human food is produced with a maximum of cleanliness and the cow is made more productive and therefore more profitable. The construction and arrangements are such as closely to approximate conditions of the open pasture, with its abundance of sunshine and fresh air. This barn helps to solve the labor problem, which is always a worry to a man who has a large herd of dairy cows to be milked and fed twice daily.

"One and two story barns are the types most widely used. A few round barns are in use but the most general type is a rectangular structure 30 to 36 feet wide, with the length adapted to the number of cows.

"The one story barn is perhaps the most desirable type from the standpoint of sanitation. It is usually built in connection with a feed barn and seldom accommodates more than sixty cows. It is used, however, in large dairies where several hundred cows are kept, several such barns being built in a row with sufficient space between them for light and ventilation. In such a building system feed is brought from one large barn in trucks running on overhead tracks. In other cases one end of each barn is built two stories high and serves for the storage of feed. Where there are not more than two one story barns they are usually built to connect with one large feed barn which overlaps the ends of the cow barns just enough to permit the feed trucks to pass.

"Often a farmer wishes to remodel his old barn along modern lines and it is generally more economical to use the old building for feed storage and build a new single story one for the cattle.

"The one story barn is all above ground. The walls may be of stone, concrete or wood. Frequently the building is of concrete up to the window sills, the remainder being frame. Some times asbestos shingles or lath are used for roof and walls. The roof is of single pitch and is supported by a scissor truss. This avoids the necessity for supporting posts and adds materially to the appearance of the interior. Sheeting or metal laths are laid on the lower chords of the truss for plastering, thus affording a sanitary ceiling.

"The one story barn is perhaps more easily ventilated than the two story type and it is less likely to be filled with dust than one in which hay is stored above. There is also less danger of fire, and lastly, the interior has a somewhat better appearance and cows may be faced outward if this is desirable.

"The two story barn affords suitable room for the cattle on the first floor and feed storage space above. The ceiling should be tight to prevent dust from filtering through. Hence the ventilation must be efficient. Because there are posts that support the second floor, the cows must be faced inward. Some economy is gained by this arrangement as the supporting posts are made parts of the stanchions.

"The two story barns are now built with the gambrel roof, incorrectly called hip roof. It is a two pitch roof, the lower rafters being full pitch and the upper ones a third pitch, giving greater storage space.

"Barns of the two story type with the feed stored above undoubtedly lessen to some extent the labor of feeding. But the ventilation of the two story barn is more difficult because of the difficulty of so placing the out-take flues that they will not interfere with the passing of the feed trucks.

"The floors in either type of barn are concrete. The concrete or cement floor is durable, easily cleaned and impervious to moisture. Its worst fault is being too cold for the animal to lie on in comfort, but this objection may be overcome to some extent by laying a wooden platform over that portion on which the cow stands. Cork brick may be laid over the cement. The cement floors should not be finished so smoothly that the cows will slip in the passage ways.

"The cows are placed in double rows facing either way as is most convenient.

"The gutter should be sixteen inches wide and not less than eight inches deep. On the side of the passage way it may be laid only six inches deep in which case there will

be less danger that the cow will slip in stepping across. The gutter should have sufficient incline to drain readily.

"The manger is the continuous type, made of cement with round corners. The front slopes out an angle of 45 degrees and the bottom is two inches higher than the floor of the stalls. It should be two feet wide and six inches deep. The manger may be used for watering the cows. Sheet iron partitions are sometimes put in to keep the cows from stealing each other's feed.

"Stalls are three feet six inches wide and four feet six inches to five feet deep. The platform on which the cow stands should be adapted to her length. The most satisfactory fastening is some form of stanchion. It is usually made of iron pipe hung chains at the top and bottom. It is most desirable to have them supported by a frame work of iron piping because the material is sanitary, slightly and catches but little dust.

"One of the most necessary provisions of the new barn is that of light. The dark barn is generally a filthy barn. This feature is deemed of so much importance by the Dairy Division of the U. S. Department of Agriculture that four points out of eighteen for scoring a perfect barn are awarded for light. There should be four square feet of glass for each stanchion. The windows should be flush with the inside wall and high enough above the floor that the glass will not be broken by the cattle.

"It is also necessary to provide plenty of fresh air. The most satisfactory system is the out-take flue for carrying off impure air. The latest experiments seem to justify the opinion that impure air rises and the out-take flues are generally made to start from some place near the ceiling. These out-take flues have openings outside the barn. The air is taken in near the ceiling by having the outside opening lower than the inside openings. These openings are about 5x16 inches in size and should be on all sides of the barn. The system works well only when the barn is closed and tightly constructed.

"Ventilation by means of windows made to swing on hinges gives very good satisfaction, but requires more attention.

"It is not considered desirable to have pens for calves or stalls for horses in the dairy barn. Neither should the milk house be constructed within the barn. The milk house should be outside and have an independent entrance. If there is an entrance to the milk house from the dairy barn it should be a passage way with a door at each end both of which should never be opened at the same time.

"This is the modern dairy barn with an abundance of light and fresh air, with smooth floors and stalls, with no ledges for a collection of dust and cobwebs—a place where cows may be kept in comfort and health and where human food may be produced with a reasonable degree of cleanliness and wholesomeness."

The Human Family Pays Annual Interest of \$1,732,000,000

Engineering News: This is the age of extravagance. According to figures compiled by the bureau of foreign and domestic commerce, United States Department of Commerce, the national debts of the world now aggregate 42 billion dollars, having increased 20 per cent in the last decade and doubled in the last 40 years. The interest and other annual charges amounted in 1912 to 1732 million dollars.

The largest national debt is that of France, 6284 million dollars; the next largest being Russia, 4553 million; the United Kingdom, 3486 million; Italy, 2707 million; Spain, 1815 million; British India, 1475 million; Japan, 1242 million; and the United States, 1028 million. The debt of the German empire is 8144 million dollars, and of the German states, 13736 million; that of Austria-Hungary, 1451 million; that of Austria, 1434 million, and of Hungary, 1268 million dollars.

Following His Trade

Speechless with wrath a little man was ushered into the court. An ornament of the police force had found him loitering about and had arrested him as a suspicious character.

"What were you doing at the time of your arrest?" asked the weary magistrate.

"Simply waiting!" spluttered the prisoner.

"What were you waiting for?"

"My money."

"Who owed you the money?"

"The man I had been waiting for."

"What did he owe it to you for?"

"For waiting."

The magistrate took his glasses off and glared at the prisoner.

"Do not jest with me," he said.

"Now, tell me, have you a trade?"

"Of course I have."

"Then, what is it?"

"I earn my living waiting. You see, I'm a waiter."—Cleveland Leader.

American forest officers have found that the high-power telescopes are not always satisfactory in fire lookout work. In some localities heat vibrations in the atmosphere are so magnified by the glass that clearer vision can be had with unaided eyes.

DISHES FOR SUNDAY SUPPER

Something New That the Family and the Guests Will Be Sure to Appreciate.

For a change on Sunday night try this salad: Marinate, with your favorite thin salad dressing three-quarters of a pint of any cold meat or fish (never mix meat and fish) two tablespoonfuls of capers, one egg boiled hard and chopped, one tablespoonful each of olives, dill pickles and pimientos, two dashes of paprika, celery salt to taste; stir well. Serve cold in two hours on lettuce leaves garnished around the edges with slices of hard boiled egg, sprigs of parsley and thin slices of Swiss cheese.

Another supper dish is made of one pint of macaroni measured after boiling, which is about one-third of a package, one-half pint of stewed tomatoes, to which are added two bouillon cubes, one gill of grated rich cheese, two tablespoonfuls of chipped bacon and one of bacon fat, one tablespoonful of minced onion, one tablespoonful of chopped parsley; salt and pepper to taste. Rub a baking dish with bacon fat. Mix all ingredients thoroughly, put them into the baking dish, brown in a hot oven.

Both dishes are satisfactory served with graham toast.

PROPER WASHING OF TOWELS

Those Used in the Kitchen Require Especial Treatment to Be of Good Service.

Towels used in the kitchen should always be rinsed in moderately cool water and then washed in hot, soapy water. They should be rinsed and then dried in the open air. If time is at premium they need not be ironed. Probably this laxly would shock many careful housewives, but a clean towel, dried in the open air, is quite as useful for drying dishes as one that is ironed smooth.

One clever woman always saves the coarse sacks that sugar and salt come in—the big ones. She rips the side seams and hems the ends and uses them for towels for pots and pans.

A doll's clothesline, which comes with half a dozen tiny clothespins and two small pulleys, is a convenience for drying kitchen towels. It can be fastened from the kitchen porch to a nearby tree, and extra clothespins can be bought for a small price. The pulleys, rope and six pins are sold for ten cents.

Stewed Apples

In cooking apples it may not be known generally that the more quickly they are cooked after paring the richer and better they are. An apple begins to be discolored as soon as the skin is removed, and this discoloration continues in the cooking. As quickly after paring as possible, put half a dozen apples, sliced, into a pan with two-thirds as much water as the bulk of the apples. Cover them and let them cook as rapidly as possible. Watch them closely to prevent burning, and just as they are falling to pieces put into them two-thirds of a cup of sugar, stirring it quickly. They are delicious also served cold.

Creamed Cod in Potato Case

Boil and mash six good sized potatoes, add one egg, a gill of milk, salt and pepper to taste and beat until light. Pick and scald one pound of boneless salt cod, drain and scald again. Now press fish until dry. Put one large tablespoon butter in a frying pan and add two tablespoonfuls flour. Mix and add one pint of milk. Stir till it thickens and add pepper to taste. Grease a pudding mold and line bottom and sides with the potato. Add the cod to the cream and fill the center. Cover the top with potato and bake a nice brown. It may be served in the dish it was baked in or turned out.

Meat on Toast

Take cooked meat of any kind. Put through the meat grinder with a little onion. Then put in pan with a little water and piece of butter, salt and pepper. Heat hot and put on toasted bread. This is a good way to use up pieces of meat and makes a nice dish for supper.

Keeping Pickles in Glass

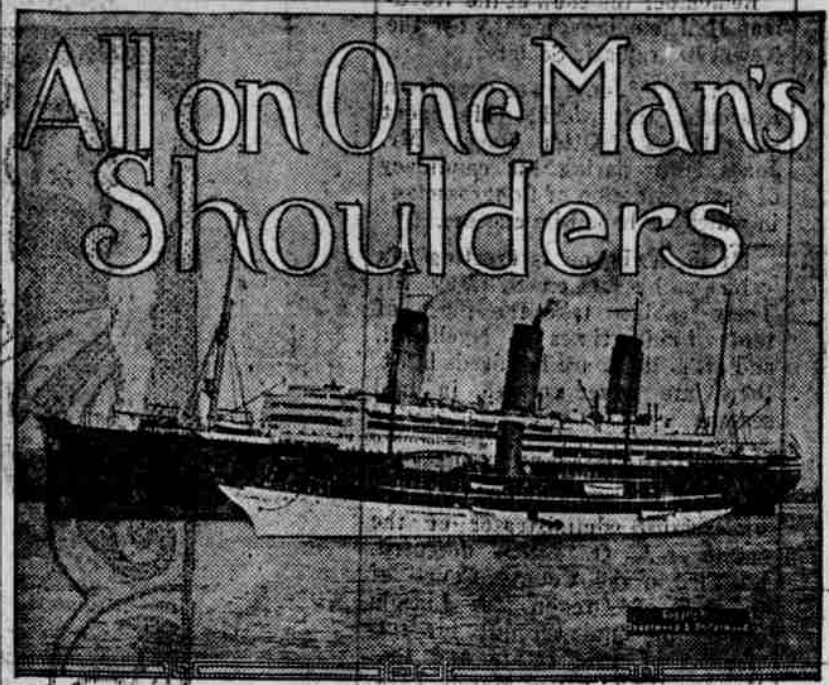
Pickles should always be kept in glass—never in glazed ware, as the action of the vinegar on the glazing is liable to form a poisonous compound.

Poor Man's Boiled Dinner

Two pigs' knuckles, one head of cabbage, one large turnip, one carrot, four large potatoes; boil knuckles two hours, then add cabbage, turnip, carrot; boil half an hour, then add potatoes; boil half hour. Delicious.

Apples for Pickles

Apples cut in irregular pieces will cook more quickly in a pie than if sliced for they do not pack closely as slices do and so the hot air comes more easily in contact with the fruit and cooking is facilitated.



MODERN OCEAN LINER

With the widespread publicity given to details of the loss of the Titanic last year, and the very recent destruction of the liner Volturno in mid-ocean, the great mass of people whose life is restricted to dry land are beginning to be interested in maritime affairs.

The handling of steamers, the dangers of the sea, the duties and responsibilities of the officers and crew of a vessel, are all topics of enlivening conversation after such a disaster as has just been added to the roll of the tragedies of the sea. The great majority of people not directly connected with maritime affairs have a very slight frequently erroneous idea of these matters.

Conflicting reports of well-meaning survivors who give testimony of a very few facts of the wreck or disaster which they have been through, tend only to confuse the reader who is seeking for reasons and facts. The reticence of surviving officers does not help to make things any plainer.

Another feature which retards the general spread of knowledge about nautical affairs is the failure of seafaring men to realize that things which seem like a-b-c to themselves are absolutely foreign to the understanding of the average landsman.

Hero of Coward

According to the reports which circulate after any marine disaster, the captain is either held up as a hero or cursed as a coward. Yet when the majority of people have forgotten the case, a well-informed, sober-minded body of men acting as a board of inquiry and wading through a mass of testimony get down to a few kernels of established facts.

And the truth is usually found that the captain was merely trying to carry out his duty as the master of his vessel.

If he holds back a mob of frenzied passengers at the point of a revolver from committing suicide by piling into the small boats in hundreds, he is merely doing what any police officer on our city streets would do if a calamity of similar nature threatened on his beat.

The captain of a vessel is the master in fact as well as in name. On the high seas his orders are law and the courts of the nations uphold him. Any refusal on the part of the crew of a vessel to do their duty as ordered by the master may be construed as mutiny.

In the older days of the sailing vessels and long trips, the powers of the captain were often abused and frequently crews were compelled to endure tremendous and even incredible abuses. In more recent times no captain dares seriously to misuse his authority, for, while a refusal to perform duties on board ship still constitutes mutiny and is severely punished as such, a sailing master can also be made answerable for illegal acts committed at sea.

With much authority the captain of a vessel also has to bear a similar measure of responsibility. No matter what happens on his ship or to it, this one man must answer for it.

On one of the thousand-foot monster steamers which now rip their way across the Atlantic in a trifle over four days, this means not only the navigation of the boat, but also a detailed knowledge of the condition and working of every piece of equipment on board, the executive control of a large force of men and the safety and happiness of a thousand or more passengers.

When a vessel is lost the master, if he happens to come out alive, is pretty sure to lose his license. Although the loss may appear to have been unavoidable, the unfortunate captain is very likely to be sidetracked to some minor berth, if he doesn't lose his papers outright.

This probably explains why so many shipmasters, especially elderly ones, finding their vessels piled up on the shore or sinking, have quietly gone to their cabins and escaped the admiralty court via the 32-dialler method. The unprecedented growth in di-

mensions and speed of ocean liners in the past 20 years has greatly increased the burden of responsibility that is placed upon the commanders of these ships. So acute has this situation become that the largest steamship companies are trying to meet it by having several captains under a commander or commodore upon their newest ships.

Yet marine authorities admit that this action does not help matters much, for the responsibility for the vessel will finally devolve upon the one man who heads the other three or four.

Having attained the rank of captain in the company's service, the others are perhaps a little better as officers than the usual complement of subordinates, but even this may be disputed.

The routine duties of handling and navigating a big steamer are always a source of the most curious interest to passengers making their first trip on the sea.

On the coastwise steamers which have their navigating bridge or pilot house on the upper passenger deck, the officers are often annoyed; beyond the limit of their patience by passengers whose curiosity leads them to crowd about the windows of the pilot-house and ask numberless questions.

On the larger ocean steamers this bother is avoided, because the bridge from which the vessel is controlled is built well apart from the passenger accommodations.

In the popular mind the captain's job is to steer the vessel from one port to the other. So it is, in a manner, but not in the way that the landsman believes.

On anything larger than a harbor excursion steamer the captain is seldom seen to touch his hand to the wheel that controls the rudder. Neither does his first officer or other navigating officers. A petty officer ranked as a "quartermaster" is engaged for that particular duty.

These men have practically no other duties and really have little to do with the actual navigating of the ship. They are given a certain "course" to steer, by the senior officers, who know the vessel's position and how she should be headed to reach her proper destination.

This ability to find the way across an ocean absolutely devoid of tracks or guide posts is one of the greatest mysteries to the uninitiated. Navigation is really a highly complicated science, requiring the use of astronomical principles and the higher mathematics.

But it has been so simplified by the use of rules and formulas, and by the publication of elaborate tables that masters are able to find their position at sea with the "sextant" or "hog-yoke," as it is familiarly called, as accurately as an accomplished mathematician could.

The sextant is an instrument of great precision, with which the navigator is able to measure the angle between the horizon and any heavenly body, sun or stars. He also makes use of a very accurate chronometer, or clock, which keeps Greenwich time.

With these two instruments and his tables and formulas he can get the latitude and longitude of his vessel at frequent intervals. In the hours or days between observations the vessel is navigated by compass, and her distance measured by a patent log which records the miles traveled. Her direction and progress from the last "observed" position are plotted on the chart so that her officers can point at any instant to the exact position of the ship.

Creators Borne of the Earth

The earth is "friendly" to living creatures because in their physical nature they are bone of her bone and flesh of her flesh—her very children. Life requires an atmosphere, such as Mars and Venus have; as well as the earth, and this Bridgewater Treatise up to date declares that we cannot conceive of a better. The ocean also has maximal fitness, and this is the best of all possible worlds.