

COMBINED DAIRY AND HORSE BARN

Such a Building Is a Valuable Part of Most Farms of Moderate Size.

LIGHT AND AIR ESSENTIAL

Special Provision Must Be Made for Feeding and for Cleaning Out the Litter and Storage Capacity Should Be Large.

By WILLIAM A. RADFORD.

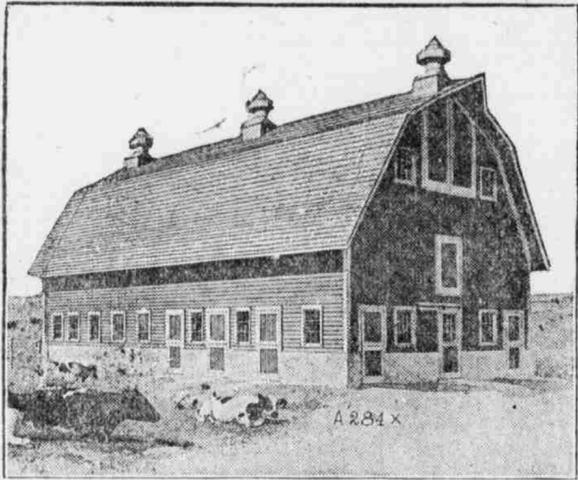
Mr. William A. Radford will answer questions and give advice FREE OF COST on all subjects pertaining to the subject of building work on the farm, for the readers of this paper. On account of his wide experience as Editor, Author and Manufacturer, he is, without doubt, the highest authority on all these subjects. Address all inquiries to William A. Radford, No. 187 Franklin Avenue, Chicago, Ill., and only inclose two-cent stamp for reply.

A barn which will accommodate both cows and horses is a valuable part of most moderate sized farms. It seldom pays to construct the large number of buildings which will separate the dairy herd and the beef herd from the horses unless the farm is quite large and each building may be of fairly generous dimensions. In case one barn is used for all purposes, there must be arrangements made whereby the advantages of separate housing for the stock may be realized as fully as possible in that part of the barn where the stock is kept. The essential necessities to maintain a healthy condition of the

store a great deal of good feed in a comparatively small space.

A size of barn design for use as both a dairy and a horse barn is shown in the accompanying illustration. This design is found to be very convenient on the average size farm requiring this type of barn. The width is 36 feet and the length is 74 feet. The plan is intended to represent a barn capable of accommodating 22 cows and six horses in the standing stalls. In addition there are three box stalls which may be used for any kind of live stock, since they are separated from the rest of the barn and may be entered from any side of the building. The box stalls are very large and well lighted and each has a hay rack built into one corner of the wall next to the feed alley. The horse stalls are arranged along the opposite side of the building from the box stalls and are provided with strong 2 by 8 plank partitions built with air spaces between the planks to facilitate ventilation. The horse stable end of the barn is separated from the cow stable end by a wall in which there are three sliding doors. Four Dutch doors and one sliding door open into the horse stable.

Each cow stall has an iron stall partition separating it from its neighbors on both sides. These partitions take up practically no room and serve a very good purpose in preventing the cows from turning sideways and crowding the smaller animals. These partitions really effect a saving in room because they allow each cow just the right amount of space and, since they are thin, they do not themselves deduct from the available space. Dairyman, who have iron stall partitions very seldom care to get along without them afterwards. Two steel mangers run along the sides of the feed alley in the center of the barn. A track is fitted overhead down the center of this alley from the horse stable end of the barn to the silo. This carrier track will prove to be a great help in feeding the



Horse Barn and Dairy Combined.

herd are that, first, plenty of good light and sunshine is furnished, and, second, that a generous supply of clean, fresh air is always caused to circulate through the stalls.

In a barn used to house all the live stock on the farm there is a very important requirement which must be met in order to facilitate maintenance of the animals without undue expense. This is that special provision must be made for feeding and for cleaning out the litter.

Since this building is no doubt the only one in which feed may be stored, it is necessary that the capacity be as large as possible, and in order to meet this prerequisite the roof must be care-

fully designed to include a maximum area in cross section. Cross braces are bothersome in filling the mow and they reduce the amount of material which the barn will hold unless care is taken to fill in around them compactly. The best roof, then, a self-supporting roof, usually of the gambrel type. Farmers who become accustomed to feeding their cattle on ensilage and have determined the proper ration to use for each type of cow are generally won over to this method of feeding. They will require a silo in connection with their barn and will thus be able to

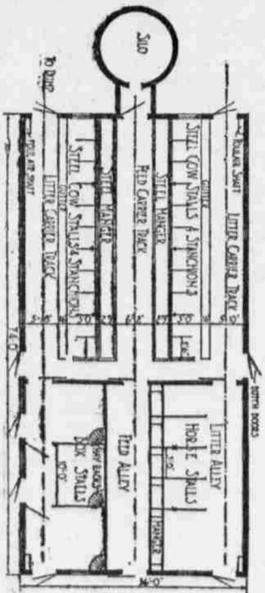
stock. Furthermore, a track is placed behind the stalls for a litter carrier. There are two of these extending from one end of the barn, along each side to the other end and on out to the dump. There is no reason why this barn cannot be kept clean and sanitary at all times and the saving in labor made possible by these track carriers for the manure, and also those for the feed, will pay the cost of the equipment in a very short time.

The construction of this barn is different from that of most barns in that the foundation wall extends up four feet above the ground line. The wall is of concrete started two and one-half feet below grade with wide footings to ensure against settling or cracking. In fact, it might be said that the whole substructure of this barn is made in one large piece, since the concrete floor and foundation wall are poured together. This method of construction is very practical for it not only furnishes an exceptionally solid base upon which to set the wooden superstructure, but it assists in reducing the labor of cleaning the barn due to the smooth, hard floor surface.

The framework of the building is plank frame construction starting from the top of the wall. Plank frame truss work extends from the top of the wall to the peak of the roof. This frame is solid, allows a clear mow space without projecting cross-tile members, and when set upon the concrete wall and secured with anchor bolts will constitute a skeleton for the barn which will insure long life and low depreciation.

The ventilating system consists of four foul-air shafts, which reach from near the floor to the metal ventilators on the peak. These four-air shafts are protected by the corners of the building next to the stable doors. There are three ventilators on the roof, the two end ventilators being used especially to take care of the foul air from the shafts, and the ventilator at the center is for the hay mow only. Intake pipes are provided in the walls in such a way as to take the air in from just above the concrete wall and deliver it into the stable near the ceiling. This ventilating system is particularly efficient and forms a further important device for maintaining sanitary conditions in the barn.

A modern barn structure of the type discussed in the previous paragraphs is an investment which no owner of a moderate sized farm will regret. It will yield him long service with little or no expense of repairs and in its lifetime will more than pay for itself in the labor saved in the prevention of sickness among the live stock made possible by the ideal conditions under which they may be placed.



Floor Plan.

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WAR'S DARK TRAIL in the BALKANS



PICTURESQUE BALKAN TOWN

David Starr Jordan, noted educator and pacifist, tells what frightfulness has been wrought by conflict in the little countries of Eastern Europe: A grave problem still unsolved

(Courtesy American Museum Journal)

IT WAS my fortune, not long ago, with three good friends and two soldiers, to follow in a king's automobile along the trail of war. This was in Macedonia. The line of an army's march is not pleasant to look upon even though the people along it had not much to lose. The pinch of suffering is very real even if, as in the Balkans, folk have grown used to it. There are two plain marks by which you may recognize the path of war in a land of farmers. The one is the charred village, with its whitewashed stone walls blackened by fire. The other is the presence here and there in the plowed fields of three poles fastened together at the top, and from the crotch a baby suspended just high enough to baffle inquisitive dogs or goats. Somewhere in the field, anywhere in the Balkan valleys in May, you will see one woman driving or leading a bullock or a buffalo, while another behind her holds the plow. The men are in the army—or else they were there.

The memory I shall longest hold of Montenegro is a picture taken by my guide, Antonio Reinwein, of this land of stony graves, of the resolute people of the limestone crags who have never done homage to the Turks nor to any other outside power.

It will be remembered that all these Balkan folk were for years under the dominion of the Turk, and that none of them have been free for half a century. The Turk was most acceptable when he was asleep. When he was awake, he had his own ideas of "Union and Progress." Union meant uniformity. A nation should have one ruler, one flag, one religion, one language. Progress was his way of bringing about this condition. This was by massacre. And as the actual Turks were few in number, ruling over an empire of Slavs, Greeks, Italians, Jews, Armenians, Albanians, Kurds, Egyptians, Moors and Arabs, it demanded eternal vigilance to keep them all in a state of union and progress.

These people have had constantly before them the choice of revolt, conversion, assimilation, banishment and massacre. And at one time or another, some of each race have chosen each one of these, often two or three of them at once. Meanwhile, following the wicked lead of Bismarck and Disraeli, Europe has kept the Turk alive, because from financiers in each nation, the Ottoman sultan has borrowed considerable sums of money.

Macedonia lies along the southern slopes of the Balkan peninsula. It is a fertile region crossed by chains of rounded mountains, with green valleys and swift streams, in physical conditions not unlike the south of France. It has 45,000 square miles of territory, is about as large as the state of Maine, with a population nearly two-thirds that of the city of New York, and before the war of liberation it had about 2,250,000 people. The majority of these were Bulgarian in blood and they were allowed to have their own churches and schools.

As to the campaigns which have desolated Macedonia in the last few years we need say only a word. The history of the two Balkan wars is given with accuracy and justice in the monumental report of the Balkan commission of the Carnegie endowment, a document of especial value in any study of the conditions preceding the "third Balkan war" which today has set the world in flames.

The first Balkan war was altruistic as far as any war can be. Its purpose was the relief of a distressed people, suffering for centuries from the laxities of Turkish rule, always incompetent and everywhere unscrupulous, and on the other hand continuously overrun by the outlaw patriots which kept the land in incessant turmoil.

The Balkan alliance was a Russian inspiration. It was planned by Hartwig, Russian minister at Belgrade, "the evil genius of the Balkans." It ended in the treaty of London, where the blind intermeddling of the powers, baffled by Austrian intrigue, agreed only on the kingdom of Albania, leaving the states to fight it out so far as Macedonia was concerned. This brought on the second Balkan war, in which Bulgarian diplomacy made all the mistakes it had a chance to make. The treaty of Bucharest left Macedonia crossed,



WOMEN SUFFER MOST

by artificial boundaries. The effect of intolerance, worst in Greece, had enough everywhere, was to drive out of each nation all who belonged to the wrong language or religion. I do not say race, for they are all of the same general stock, even the bulk of the "Turks" and Greeks. This has filled the region with refugees, men and women whose fault is that they lived on the wrong side of the boundaries made for them in the treaty of Bucharest.

Passing down the long highway which leads over 200 miles from Sofia to Samokov and Dubnitsa in old Bulgaria, then across the border of Macedonia, down the Struma river past Dzumala to Petritch, we found everywhere the Bulgarian refugees from the Saloniki district in Greek Macedonia. These have been roughly estimated at 50,000 in number. Some of these have been given farms or houses abandoned in Macedonia by Turks who followed the Turkish army away. Others received farms left by Greeks when the Greek army went back after the treaty of Bucharest. The government grants each person some fourpence a day. Some find work, but after the war there are few employers. The cost of living has doubled, the means of living has fallen. At Petritch, near the present boundary of Greece, there were hundreds of these waiting about on the stone sidewalks day by day. They were waiting for the powers to revise the treaty of Bucharest and give them back their homes in the region above Saloniki. Some local journal had said that this revision was coming soon. It was my duty to assure them that it would never come. The phrase in Sofia, "Europe exists no more," is the truth so far as Balkan affairs are concerned.

The reason for that is clearer now. Europe was paralyzed by the great terror which has since come on it in an unthinkable catastrophe. There were some in the "concert of powers," who were striving to bring on this catastrophe. The "war of steel and gold" was about to give place to real war, which would end, they hoped, in speedy victory and world power. It has not ended in that way. It has not yet ended at all. But those who most looked forward to war were the ones who had least conception of its certain consequences.

In the whole length of the Struma valley in western Macedonia, towns have been burned in whole or part by the Greek army which pursued the Bulgarians as far as the old border of Bulgaria. In Greek Macedonia, at the hands of some one or all of the three successive armies—Turkish, Bulgarian and Greek—most of the towns between Saloniki and Drama have suffered the same fate. Each of these towns has now its share of Greek refugees from Turkish Thrace. These have been estimated by Greek authorities as numbering 300,000. They have come by railway from Adrianople in box cars belonging to the Greek government.

These cars are left at the various stations, a dozen or more at each. In these the people keep their bedding and their scanty effects. The government of Greece allows them two or three sous a day, with rice which they cook on fires of thistles and other weeds.

In a Turkish journal, vigorous complaint was made against the Albanian refugees in Thrace as more "proficient with the Mauser than with the plow, and skillful only as cattle thieves." A plea was made for bringing back the Bulgarian farmers as far more desirable neighbors. "The Bulgarians are now our friends."

In the larger towns, as Saloniki and Kilkish, the refugees are ranged in tent cities, ten thousand or more in one encampment. There were perhaps 60,000 Greek refugees a little more than a year ago along the road from Drama to Saloniki.

When I was at Saloniki the Turks were leaving in great numbers: 212,000 took steerage passage for Stamboul in one month. Saloniki (Thessalonike), beautifully situated, in full face of Mount Olympus and with a noble harbor, should be one of the great cities of the world. In the aftermath of the second Balkan war it lost half its population. It is no better off today than in the times when St. Paul called out for help in Macedonia.

Harsh and often terribly brutal operations in Serbia and Greece result from the unchecked operations of the military element. The soldier, as such, considers neither economic conditions nor the soul of man. It was claimed that the two wise ministers Pushitch in Belgrade and Venizelos in Athens were both opposed to the policy of repression. Both would, if they could, have proclaimed religious linguistic tolerance in those parts of Macedonia turned over to them by the treaty of Bucharest. But the fact of victory, and especially victory over their sister state, Bulgaria, intoxicates the military, and fills the mob with the "east wind." In such times the civil authority cannot hold its own against the military.

Bulgaria recognized better the value of tolerance. A Greek church and school stand undisturbed in Sofia. In the Bulgarian national assembly there are about a dozen Turkish deputies, representing Thrace. These Turks, supporters all of the king, hold the balance of power against the combined democrats and socialists, the group opposed to all war. The spirit of hate is still very strong among the people of Bulgaria. They hate Roumania, as the robber-state who has done them the most harm. They hate Greece.

There can never be settled quiet in the East until the "Balkans belong to the Balkans," until civil authority everywhere dominates the military and until customs unions and other unions cause these people to realize that one fate befalls them all and that the welfare of each state is bound up in that of its neighbor.