erect the barrier parallel to and about four feet distant from a solid fence or wall, so that the mare will be compelled when behind it to stand with her left side towards the horse; and the barrier should be so substantially built that it cannot be kicked or pushed down. In many cases the only barrier used is a strong pole fixed about three and a half feet from the ground; but it is much safer and better to build up the space to that height, close and solid, with strong material of some kind, so as to lessen the danger from kicking and striking. This may be conveniently done by setting three posts firmly in the ground, about four feet apart, and nailing strong oak or other hard-wood boards to these posts, on both sides, from the ground up to the required height, and then capping them over with a board of the same material. When trying the mare keep the horse well in hand, by the use of the bit previously described, if necessary, and do not let him get his nose further back than to the mare's flank. If the stallion is a valuable one, and is expected to do much service, it will be best to have another horse of but little value for a teaser, but when the service required is but light it will work no injury to the horse to let him do his own teasing.

THE BLACK WALNUT.

From the Prairie Farmer.

One of the most valuable trees of the North American forests is the Black Walnut *(Juglans nigra)*. It is a hardy tree, with pinnate leaves and deeply furrowed bark. The flowers are *monœcious*, that is, the staminate and pistillate grow on the same tree. The male or staminate flowers are produced in rather short catkins, while the fertile or pistillate are in terminal pairs. The species is widely distributed, its native habitat extending from western Massachusetts to eastern Nebraska and Kansas, and from Ontario, Canada, to northern Florida and Texas. But the greatest aboriginal growth, both in numbers and magnitude, was found in the forests which covered the river bottoms and hillsides in the region lying between the great lakes and the Ohio River. Some specimens found there were truly forest giants. On the shore of Lake Erie, near the mouth of Walnut Creek, in Western New York, a Black Walnut tree was cut, some 50 years ago, which attained much celebrity as the "big tree." The hollow lower section of 15 feet, after being exhibited in this country, was carried to England, and there converted into a gin-shop. No authentic data of its actual dimensions are at hand, but tradition gives its diameter as between 12 and 15 feet. Near where that grew, a freshet, a few years since, revealed a buried Black Walnut trunk which was afterwards unearthed. The "butt cut" was nearly eight feet in diameter, and was split into quarters with wedges to bring it within reach of a mill-saw. Of course these were exceptional growths, and show the ultimate magnitude attained by the species under favoring conditions; yet the average growth is from three to six feet in diameter, and the height from 60 to 90 feet. As a timber tree it is the most valuable of our native species. The wood is a rich, dark brown, deepening with age, fine-grained, and susceptible of a high polish. For cabinet work, gun-stalks, counter-tops, stair-rails, and fine inside finish for buildings, it is unrivalled by any other native wood. In the Chicago market, good Black Walnut lumber is quoted at $50 to $150 per 1,000 feet, board measure, in car-load lots. Crotches, burls, and other parts with feathered or wavy grain, sell at very much higher prices for veneers. In the early days, while the country was still covered with "the forest primeval," the settlers were accustomed to work up their timber into fence posts and rails. That which was not straight in the grain was burned, to clear the ground. Many farms in Ohio and Indiana were laboriously cleared of Black Walnut timber which would now be worth thousands of dollars more than the value of the land from which it was cut. For cultivation on the prairies and eastern borders of the plains, the Black Walnut is deservedly popular. At the 17th annual meeting of the Kansas State Horticultural Society the tree was placed at the head of the list of 15 species which had proved successful in that State. The Black Walnut, when young, is successfully planted from nursery rows but having a long tap-root, it is better, perhaps, to plant the nuts where the tree is to remain. They are gathered only in the fall, and deposited in beds, two or three deep, where they are lightly covered with earth or sand. Keep the bed moist through the winter, and subjected to the action of the frost. When fairly sprouted in the spring, the nuts are carefully taken up and planted where the tree is to stand. It is recommended to plant in alternate rows with Cottonwood, Box Elder, or some rapid growing evergreen, to shelter the young trees from high winds and hot sunshine. The sheltering trees may be removed before they interfere with the growth of the Black Walnuts. The latter begins to produce nuts when eight or ten years old. The nuts, when fresh, are large and roundish, somewhat resembling a green orange. The kernel is less palatable than that of any of the allied species, somewhat rank in flavor, yet is relished by many. The largest market for them at present is for planting; they bring little for eating purposes.

STABLE FLOORS.

The Elmira Farmers' Club had under discussion the above subject at a late meeting, and several methods were mentioned by members. The *Husbandman* reports the discussion as follows:—

"Several members had visited a Pennsylvania stable where one hundred head were kept in winter. The passage-ways in the stable were of cement and stone, the process of making being apparently to place the stone edgewise on earth, suitably prepared, then filling in with waterlime and sand, of which a coating was also spread upon the top. Floor of this character has been in use many years, and only here and there could a place be observed where even the surface cement had been worn away. In making a floor for an extensive cistern beneath the rear wing of the club-hall, Mr. Heller had employed precisely this plan:—First the earth was dressed to a smooth surface, then stones about six inches wide were placed edgewise and pounded down firmly, so that something near an even surface was presented when the stones were all placed at the bottom of the cistern. The next step was to pour in cement and sand, mixed to a proper consistency to fill the interstices from top to bottom of the stone floor. After this was done a coat of cement and sand was placed over the top, then, after it had become sufficiently dried, a second coat. The same course was pursued in dressing the sides of the cistern. But the bottom, serving as the floor, is just what is needed as a floor for a stable. It will be necessary to pound the stones into the earth enough to give them a firm bearing, then the cement and gravel, or sand, should be mixed to such a consistency that pouring in the interstices will secure complete filling. After this a thin coating of cement and sharp sand will finish the work.

"Mr. Hoffman, who had several times been compelled to build his stables anew through losses by fire, gave the plan adopted as the best in his experience, as follows:—The earth smoothed the whole length of the stable to be occupied by 50 or 60 cows, then small scantling imbedded from front to rear as the cattle stand, and plank laid upon these. In this way the planks run crosswise of the stable as the cattle stand, giving them firmer foothold, and, therefore, diminishing liability to slip in arising from a recumbent position. He has tried planks running from front to rear, and he has also tried short planks at the rear, the fore-feet of the cattle resting upon earth or stones. But all things considered, he preferred the way described as cheapest and best, cheapest especially in construction, for he did not doubt that two active men could take up a worn floor of 200 feet length and replace it by new planks in a day.

"Mr. Baker expressed preference for plank floors, but in Delaware County he had observed in many stables planks at the rear extending a foot and a half or two feet from the gutter forward, and the remaining space to the stanchions filled with stones, affording a foothold for the cattle in arising. An objection was found, however, to the stone filling, in the fact that the cattle's feet punched out low places by displacement of the small stones, thus making uneven floors that interfered with the comfort of the cattle at rest."

STOCK VERSUS GRAIN.

Iowa Homestead.

A practical illustration of the progress of stock-breeding is shown in the increased demand for good stock and the decreased demand for farm machinery. The land is being put into grass for stock and less grain is raised, hence less machinery is required for harvesting the grain crops. The failure of the wheat crop this year is driving many farmers to breeding stock.

Where they have been cropping their lands for years, the yield is reduced. The land has increased in value, so that the farmer can no longer afford to lose a crop, but prefers the uniformed profits of stock-breeding that is independent of bad seasons, that knows no failure. The *Nebraska Farmer*, referring to the dull implement trade this season, says:—

"The report given by implement dealers in regard to trade is a strong pointer, but not in the direction claimed by them of hard times. The farmers of Nebraska were never in a better condition than to-day. It is not because farmers are afraid to buy that makes the implement trade dull, but because they have found that it pays better to buy stock and raise corn than to buy implements and raise small grain. The man who gives his note for stock, even though he pays very large prices, will be much more liable to meet that note when due than he who gives his note for implements, and if the prices paid for stock are any indication, it is plain to be seen that farmers have discovered this fact. Grass, corn, hogs, horses, and cattle make the independent farmer, while small grain and implements bring poverty and ruin."

One of the most beautiful effects of the labor system in agricultural colleges, says the *Speculum*, of the Michigan Agricultural College, is seen in its influence on the students. There is to be found no such thing as caste or aristocracy; all are on an equality; "worth makes the man," and a degree of hearty good feeling and friendship exists among all the students, such as is found in few other colleges.