

they fall off, "shrink," worse on the road. The crossing of polled bulls upon these grade cows may be depended upon to give a class of cattle which, while they will have all the advantages of the Short-horn grades, will do better on rather short pasturage, travel much better, shrinking less, and packing closer both in yards and on railway cars or steamboats. There seems to be every reason why we should value the polled breeds in this country, the Norfolks being apparently best adapted to Eastern and central farming—say to the great dairy region—and the Galloways or Angus to the great beef-raising and feeding sections.

A FAMOUS GROUP OF POLLED CATTLE.

The accompanying engraving of the champion group of Angus, or Aberdeen cattle exhibited at the late Paris Exposition, by Mr. McCombie of Tillyfour, Aberdeenshire, is a faithful reproduction of an illustration taken from photographs, and published in the *Agricultural Gazette* for January 20, '79. The animals were taken "at home" after their return from the great Show and when they had recruited on their native pastures from the miseries of the quarantine to which they had been subjected. More than one reference has been made in the *RURAL* to the high distinction won by the members of this group individually and collectively, and it gives us pleasure to be able to place before our readers accurate portraits of the animals which carried off the highest honors at the World's Fair, and have won for themselves and their owner a world-wide celebrity.

On the left flank is Gally, a four-year-old cow. On her right is Sybil 2nd, two years and three months old. Next comes Pride of Aberdeen 8th, probably the most valuable animal of the breed in existence, her owner having refused upwards of \$1500 for her. Fourth comes Hail 2nd, one year and eight months old, the easy winner of the first prize and gold medal in her class. Then comes a little beauty, Witch of Endor, one year and three months old, while on the right flank is Paris, one year and two months old, the gainer of the first prize and gold medal in his class.

STOCK NOTES.

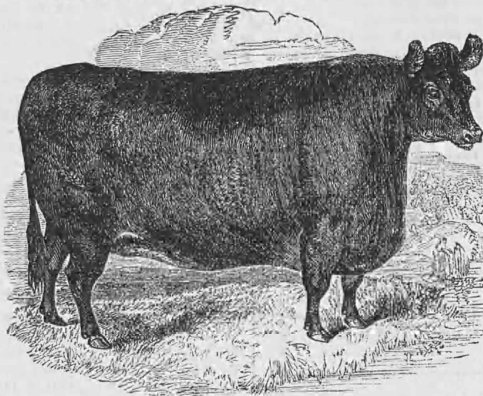
JOTTINGS.—At a recent meeting of the agricultural department of the Royal Jersey Agricultural and Horticultural Society, it was stated that the returns show that the exportation of Jersey cattle during the preceding twelvemonth, amounted to 2,080 head. Of these 1,790 were for England; 210 for America and 83 for France. Regrets were expressed that so many of the best stock were sold for exportation, and measures were suggested by the adoption of which it was hoped that the best bulls might be retained on the island.

The (English) Farmer mentions the case of a cow-calf of Dutch breed, whose udder began to swell when the animal was only two months old. When six months old, the udder was fully distended, and thereafter the calf was regularly milked every day. When eleven months old, the animal's development was backward, but she gave about four and a half quarts of milk daily; it contained, however, a little more water than that of a full-grown cow. . . . The Bulletin of the A. J. C. C. mentions another instance of early lactation. In 1878 Mr. Parke's heifer Anne Page (2,690) when eleven months old began to yield two pints of milk daily, which she increased to two quarts within a fortnight. She was taken to the bull for the first time when twelve months old. . . . The English Herd Book of Angus polled cattle has reached its fourth volume.

Holsteins were first introduced into this country in 1852 and the last American Herd Book of that breed contains the names of 197 bulls and 251 cows, or a total of 448 head. . . . Thiers, one of the shrewdest men France has ever produced, said, "The agriculture of France cannot dispense with sheep" and many of the most progressive farmers in the Eastern States seem to think the saying true of their own section also. England's 84,582,000 sheep on 77,284,184 acres, yield annual products worth \$150,000,000, and, moreover, English farmers consider that sheep have contributed more than any other kind of stock towards enriching the land so that the average yield of wheat, which in the days of Elizabeth was six and a half bushels to the acre, is now upwards of thirty bushels. It has been well said, however, that a few sheep well cared for, will be profitable on every farm, while a large flock would, in nine cases out of ten, be a source of trouble and expense to the ordinary farmer. Dr. J. L. Hayes, Secretary of the National Association of Wool Manufacturers, says that the enormous clip of Canada wool is obtained from small flocks, rarely exceeding fifty head. He recommends long-wooled sheep, especially

Cotswolds. . . . A Stock-Breeders' Association has just been organized in Mississippi with a view to dairying and fine stock raising on the prairies in the eastern part of the State. Already a commencement has been made, as it is estimated that 400, or so, of the inhabitants, have a few choice hogs or sheep, and, now and

fully ripe, bring top prices every time. The Hereford being a grass beast, is most prized in July, August, September and October, when he readily tops the market. Despite the large number of Short-horns in the country, few bullocks of that breed reach the London market, and although some bring top figures, as a



GALLOWAY HEIFER.

then, a few head of thoroughbred cattle.

The Department of Agriculture's statistics of the live-stock in this country in Jan., 1878, though not strictly accurate, are the most trustworthy attainable. These estimates made up from a multitude of local reports, show that of horses we then had 10,329,700, valued at \$600,813,681, an average of \$58.16 for each animal; of milch cows, 11,300,100, valued at \$298,499,866, an average of \$26.41 each; of oxen and other cattle, 19,223,300, valued at \$329,541,708, an average of \$17.14 each; of sheep, 35,740,500, valued at \$80,603,662, an average of \$2.25 each; of hogs, 32,262,500, valued at \$160,838,523, an average of \$4.98 each. New York was ahead in the number of milch cows, having 1,404,100. In "other cattle"

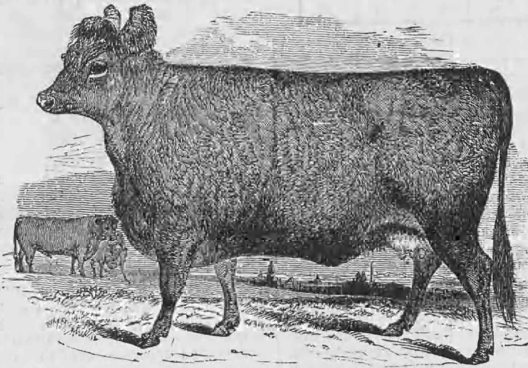
rule they sell at lower rates than any of the sorts already mentioned. The Polled Scots, he thinks, require a northern climate, and plenty of roots—swedes and turnips. When brought south, he says, they frequently merit the sobriquet of "pensioners."

Field Crops.

PEARL MILLET AND ITS CULTURE.

Twenty-five years' experience with it; drilling it; its early appearance and rapid growth; growing it in double rows; broadcasting it with cow peas; as a soiling plant.

For the benefit of numerous inquirers about



NORFOLK COW.

Texas took the lead with 3,458,300. Illinois was next, but a long way behind, with 1,274,100. That State, moreover, was first in horses, having 1,091,500. Iowa stood first in hogs with 2,950,000, and next came in order Missouri, Indiana, Ohio and Illinois, none of them with less than 2,000,000 porkers. . . . An English correspondent for whom the National Live-Stock Journal vouches as an authority in such matters, says that for fat bullocks the West Highlanders are the best that come to the London markets, bringing from half a cent to a cent a pound more than beasts of any other breed. They are seldom fit for the butcher till

this valuable forage plant, and the best method of its cultivation, I give, through the *RURAL*, my experience with it for twenty-five years past, the most economical plans of growing it profitably, and the uses for which it is adapted. I have attempted to utilize it in a variety of ways, never failing to reap a satisfactory crop during the long period of its growth here, in latitude 33° north. It probably finds its most congenial home and greatest development under our long, warm suns, and in our porous soils. It revels in a dry sandy loam, and is the grossest feeder and most rapid grower of all the Sorghum family, if it properly belongs

drill in with any one of the hand seed drills about three pounds per acre of the clean seed, and cover it lightly. When the seed first germinates, the grower will feel discouraged. The very fine, grass-like spears do not promise the gross, luxuriant crop, of which boasts are constantly made, and after a few cool mornings have turned the blades to a sickly yellow, he will be almost tempted to pronounce the crop a failure. But a slight side-line hoeing, together with the warm suns of May and June, makes a most rapid change; and by the tenth of June the plants have here attained a height of from three to four feet, are fit to be cut as a green soiling crop, and furnish a cutting every fifteen or twenty days thereafter, till frost. I cultivate simply with the horse hoe, cultivator, or sweep in the middle of the rows. I seldom give more than one hand hoeing. I never chop through the stalks, except where seed are grown, but let the plants stand thick in drills, shaving the sides of the drills with the hoe or sweep.

The best method of growing it is in double rows on a seven-foot bed, with the drills fifteen inches apart. The plants soon close up the interval. No grass or weeds can appear. And in this form it is the prettiest growing crop I have ever seen. Sweeps or the cultivator should be used only in the wide middles. In these double rows it is easy to cut with a stiff grass scythe, the hand having more room to operate on each side of the drills.

The third and most profitable way to grow it I find is to broadcast it with our field cow peas, on rich land about the middle or last of May. Having put a piece of rich soil in good tilth, I broadcast one and a half bushels of peas to 215 pounds of millet seed, harrowing in the mixture and rolling the surface. Under our warm suns both plants start the race together, each struggling for the ascendancy; the pea climbing upon the middle stalks, dwarfs the latter, and the two make a dense mass of the finest green or dry forage, which can be cured better than if grown singly, as the millet stalks are now quite small and spindling. In the two plants there is a combination of a "cereal" with a "legumen," and this makes a valuable rich winter food for all stock. If one can conceive a vegetable-growth, from four to six feet high, so dense that a rat could scarcely pass through it, and on which a horse and cart might stand over a full load for the latter, his conception would be realized here by this combination of growth on rich land, in August and September. The plant seems to be greatly influenced by sun and moisture. Commencing in March, I plant it every month till August, either in drills or broadcast. It would probably be advisable not to put the crop two years in succession upon the same spot, unless it be well manured. It must draw heavily upon the stores of fertility and consume all plant food in the soil, being so long a grower. It will give a return in proportion to the food given it, and during the many years in which I have planted and used it, I have often wondered that its merits were not properly appreciated.

I have never tried keeping it by "ensilage," but I should suppose that with its latest growth in September, this plan would succeed admirably. I use it principally as a green soiling plant for horses and cattle, and know of no crop that furnishes so much green, succulent food.

Burke Co., Ga.

W. B. JONES.

Industrial Topics.

HOW TO SECURE A GOOD COUNTRY SCHOOL-HOUSE.—No. 2.

PROFESSOR W. H. JAL.

"Agriculture advances with the improved conditions of the common schools."

There is more at stake in a little country school than some of us are aware of. The surroundings of a child exert a wonderful influence for good or ill. It is good economy to see that the school-house and its surroundings are convenient and pleasant. For beautifying the ground, employ a landscape gardener or the man or men of your own neighborhood, who have displayed the best taste in beautifying their own homes. Before constructing a school, do not be afraid to pay a small fee for plans to be examined. Then, on these plans get the advice of a committee of teachers. Every man is not a landscape gardener or an architect, any more than he is a blacksmith or a doctor. By employing the best men for each place or business, time and money are saved and everything goes off better.

There are numerous approved patterns of stoves and furnaces which are made for bringing into the room, in a partially heated condition, an abundance of fresh air, and for expelling the impure air. To do this may take a trifle more fuel but it will prevent cold



MR. M'COMBIE'S CHAMPION GROUP OF POLLED ANGUS CATTLE AT PARIS.

four years old. The Polled Scots are all-the-year-round beasts and usually top the market. As good as the pure-breds and sometimes better, are first crosses between Short-horn bulls and Polled Scots. The little Devons are greatly prized by some branches of the trade, and when

to this family of plants. [Same order—genus *Penicillaria*.—Eds.]

The land being made fertile, if not so naturally, after breaking it well, I make the beds some four feet apart, harrow off clean, open a very straight furrow with the marker, and

draughts, drowsiness, pale faces, and poor health. Good health is a priceless treasure, often too little prized till it is taken from us. To regain it we are willing to spend fortunes; to preserve it in our children we should take all reasonable precautions.

A school-room, even the poorest, need not be destitute of ornaments. A little effort on the part of a teacher or of the school board, will secure some pictures, brackets and vases for flowers. Once in a while some evergreens may be tastefully arranged and suitable mottoes placed about the room.

And now after making all needful preparations in the house and its surroundings, do not neglect the most important part of placing a first-class teacher in charge. The people may be poor, the number of children small, the times hard, and the most rigid economy seem necessary; but here is one of the last places wherein to cut off expenses. The enterprising farmer does not try to hire poor, cheap hands to do his work, because produce is cheap or because he is in debt. He knows the best are the cheapest at any reasonable price. He hires men to drive his team, to feed his animals, milk his cows, plant, cultivate, and harvest his crops. He does not expect that even his best men will perform these duties with profit to himself without some of his personal oversight. To perform this work, he often pays a man more wages than is paid the teacher of the summer district school. He is willing to leave this cheap teacher with entire control of his children all summer for the best hours of the day, but he would not think of trusting the entire care of his swine to the best man he could hire. He could not afford it. He would lose money. Swine may live a year or two and that is the last of them. The children will probably live forty to sixty years, and mold the character of those who follow them, and, to some extent, of all those with whom they associate. There is no reason in this discriminating between the care of our domestic animals and of our children. Is it not a wonder that the district schools are as good as they are, considering their management?

Every farmer does not know how to superintend a school. But few of them know how, and they are aware of it, hence they do not visit the schools or attempt to interfere with their management. In some States the people employ skilled or professional persons to superintend their schools, but in many places there is almost no supervision. The school runs itself, if the teacher and scholars can get along together. Every man ought to be expert at his own business, and has no reason to expect he can do everything and do it well.

To all I say, employ only good teachers. How can this be done? Certainly not without taking some pains to find out that they are good. The candidates should be thoroughly examined in various studies, by competent persons, who make this their entire business, or an important part of their business. This is not all. Good testimonials must be produced, vouching for moral character, correct habits, etc. If the person has ever taught school before, great care should be taken to learn that he has liked the business, kept good order, and succeeded in interesting his pupils. With thorough examinations and a searching inquiry of reliable persons as to character and former success, competent teachers can be selected.

There is no objection to hiring such persons at the lowest possible rates that will employ them, but hire them at any price, and do not take up, even for one term, with a person who does not bear the severest test. In hiring for low wages, this must be taken into consideration: the teacher will not be contented with his place or business. He may think it important to give part of his time to something else, to eke out his small salary. If he is possessed of good caliber, he will soon engage in some other business, where his energy will bring larger returns. This will make it necessary to employ new and untried teachers. Frequent changes of teachers are much to be avoided.

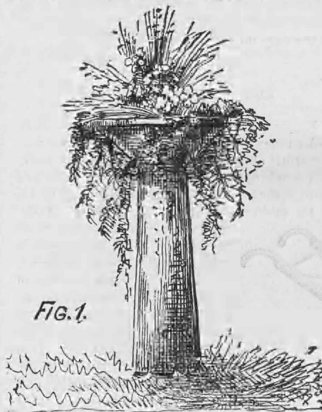
Agricultural College, Lansing, Mich.

Floricultural.

RUSTIC VASE SUPPORTERS.

Rustic work or ornaments, if more generally used about our premises, would add much to their beauty, and that cheaply, too. For instance, the vase supporter shown at Fig. 2, is simply a portion of the top of a tree with parts of two or three branches remaining. The main portion may be from three to five inches in diameter and about five feet in length, set firmly in the ground. The tops of the branches and main stem are cut off square; use for the main stem a large vase, or even a tin jar or wooden butter bowl, if at hand; and for the branches, pint or quart basins painted green. Nail them firmly in position, fill with earth; place in them some hardy running vines, and in the large vase a Monthly Rose or Verbenas, Petunias or some low-grow-

ing flowering annual. If possible, cover the earth in the vases with moss, which retains its moisture, necessitating less care in watering. Let the bark remain on the supports, and the



more scraggy-looking they are, the better the effect. A few Morning-glory plants allowed to entwine about the support, will add much to the beauty of the whole. The arrangement in Fig. 1. is a support for one vase only; and should be only about two feet above ground, and if in a settled situation, the vase may be filled with tall-growing plants.

L. D. SNOOK.

Yates Co., N. Y.

Miscellaneous.

CATALOGUES, &c., RECEIVED.

REGISTER OF THE VERMONT MERINO SHEEP-BREEDER'S ASSOCIATION, Vol. I.—Somewhat over half-a-dozen years ago a large New England lock company was reported to have lost heavily by the issue of a very expensive catalogue of their wares. The edition of 2,000 copies cost them, it was said, \$80,000, or \$40 a-piece. A copy of the work was presented, gratis, to each of their customers who bought \$500 worth of their goods in a single bill, and the remainder of the books were kept on sale to the rest of the trade at cost price. Judging from the growing tendency towards artistic and expensive catalogues among those who wish to employ such compilations to introduce their goods to the favorable notice of the agricultural community, we are sometimes disposed to think that there is some risk that a few of these may share the experience of the getters-up of that costly lock catalogue. The size, the fine illustrations, the neat French-morocco binding, and the general make-up of the above-named work strongly suggested this reflection.

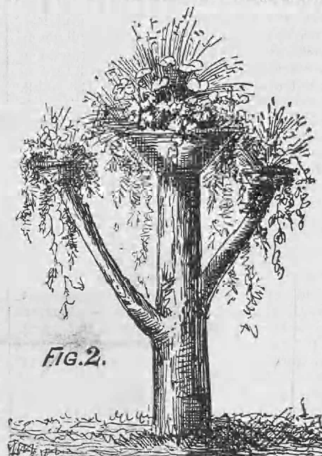
Besides an interesting account of the introduction of the Merino into the United States, and 22 excellent engravings of fine specimens of that breed—it contains full information with regard to the history and breeding of the various Vermont Merino flocks recorded in the book. Now that a lively interest is aroused throughout the country in pure-bred stock of

The work is well edited by Albert Chapman, of Middlebury, Vt., Secretary of the Association, and is offered for sale at \$2, which, we are assured, is a trifle less than the cost of the book and postage.

THE ENSILAGE OF MAIZE AND OTHER GREEN FODDER CROPS. By M. Augustus Goffart. Paris, 1877. Translated and published by J. B. Brown, 55 Beekman street, New York. Price \$1.

This is a neat little book of 79 pages, printed in large type upon glazed paper, handsomely bound in imitation morocco, and containing a full account of the method of preserving fodder by ensilage, the way in which the plants should be grown, cut and stored away, the changes that take place in their constituents, and, in short, of every particular that might interest or instruct those who may adopt this excellent method of preserving stock feed. Just a word about translations of such practical works, designed for the use of the farming community. In mentioning the measures throughout the work the original French terms are used. It seems to us that these require translation into American equivalents just as much as, if not more than, the rest of the work. It is a poor excuse for this omission to point to the vocabulary prefixed to the work, wherein the reader may learn that a litre is equal to 1 76-100 pint or 61 cubic inches; a centime to one-fifth of an American cent; a kilogramme to 2.205-10,000 the avoirdupois, and a hectare to 2.471-1,000 acres.

Even a mere reference to this vocabulary must distract the reader's attention, and to "work out" into American equivalents the quantities and areas mentioned throughout the



work would be a labor too tedious, not only for most farmers, but for most readers of any class. Such a source of obscurity and incomprehensibility is hardly pardonable in quotations from foreign authorities, even in the short-lived pages of an agricultural paper, and should never find place in a work which, like that before us, deserves to become a standard on the subject of which it treats. The recent introduction of the metric system into most of our public schools will, doubtless, in time, obviate the necessity for such translations, but those who publish books to-day will scarcely be con-

ALFRED BRIDGEMAN, 876 Broadway, N. Y.: Annual descriptive catalogue of vegetable, grass, herb and flower seeds.

Mr. Bridgeman was good enough to send us a large assortment of novelties last season. These were planted and marked with usual care; they germinated freely, but were cut off by the late frost which, everywhere in this section, perpetrated so much damage. This is an old establishment, and a very trustworthy one. The catalogue is finely illustrated with accurate portraits, and the lists of seeds are printed in large type, with all needed details.

E. P. ROE, Cornwall-on-the-Hudson, Orange Co., N. Y.: Descriptive Catalogue and Price List for 1879.

This catalogue is full of the information that the enterprising grower of small fruits most needs. All the best varieties of Strawberries, Raspberries, Grapes, Gooseberries, Currants, &c., are offered with impartial statements regarding their merits from many people and from many localities. We believe that Mr. Roe tries to tell the truth, a little matter that many small-fruit dealers disregard in proportion as the telling of it interferes with the sale of their plants. The catalogue will be sent free to our subscribers.

THE AMERICAN STOCKMAN. This is a daily, semi-weekly and weekly journal; price, per annum, \$5, \$3 and \$2 respectively; published by the American Stockman Co. at Chicago, Ill. It is devoted to the live-stock interests of the country, and the excellent character and wide experience of its editor, E. W. Perry, are ample guarantees that it will be conducted on high principles and in an effective and progressive manner.

STATE SUPERVISION OF INSURANCE. Speech of Hon. C. R. Knowles, made in the House of Assembly, New York, in support of such supervision; also, a pamphlet of 16 pages, giving the opinions of the various Insurance Companies in the State with regard to the matter, nearly all of them in favor of it.

D. C. MCGRAW, Binghamton, N. Y. Abridged catalogue of seeds, greenhouse and bedding plants, shrubs, evergreens, &c., for the Spring of '79. This, as well as his larger plant and seed catalogue, sent on application.

THE BRAZILIAN TEA—CHA-MATE (Ilex Paraguensis). This is an illustrated pamphlet of 19 pages concerning this new aspirant for cultivation in the extreme south of this country, by Charles Wm. Zarella, M. D., etc., etc.

B. S. WILLIAMS, Victoria and Paradise Nurseries, Upper Holloway, London, N. England: Descriptive catalogue of agricultural seeds, &c. 65 pages, profusely illustrated.

COMMUNICATIONS RECEIVED FOR THE WEEK ENDING SATURDAY, FEBRUARY 8th.

J. W. L.—L. S.—F. H. D.—G. K.—M. M.—H. J. D.—E. W.—J. D. T.—M. G. R.—W. G. W.—I. O. W.—W. J. J.—N. R. P.—W. I. C.—H. B.—L. S. H.—A. C. A.—C. W. B.—N. R. P.—F. W. H. H. M.—Y. D. C.—R. H. C.—J. J. W.—C. C.—W. R. B.—J. D.—E. R. W.—L. R. B.—R. W. F.—E. T.—R. I. W.—C.—J. T. It will take us at least six weeks to complete the present seed distribution. The corn will be distributed not until that is completed.—T. H. H.—R. G. J.—A. S. we do not care for poems.—Ritt.—F. D. C.—F. B. W.—M. E. A.—W. H. G.—J. D. H.—T. M. S.—M. S. A.—L. J.—T. E. L.—B. P. M.—Mrs. M. O.—E. G. thanks.—W. J. B.—Anon.—M. J. R.—W. H. H.—H. A. W.—H. S.—G. W. K.—S. E. H.—H. J.—

Industrial Implements.

CORN SHELLERS.

The Sandwich Manufacturing Company of Sandwich, Illinois, is said to be the oldest house engaged in the manufacture of Power and Hand Corn Shellers in the United States, it being now nearly a quarter of a century since they commenced that line of manufacture in a small way and with a few men. They now employ more than 200 hands and, at this season of the year, are taxed to their utmost capacity to keep pace with the demand. They make shellers of all sizes and capacities—from the large warehouse and portable sheller with capacity of 3,000 bushels of shelled corn per day, to the one-hole "Count" hand sheller, illustrated on this page, which has a capacity of 150 bushels per day. This and the "Veteran" sheller, advertised in this number, are probably best adapted to the wants of Eastern farmers and millers, while the larger sizes have an immense sale in the North and West and Northwest, as well as in many sections of the East and South, where corn is raised in sufficient quantities to warrant the use of a Power Sheller.

We recommend the Veteran Sheller especially, to the notice of those farmers who have use for a small Power Sheller of convenient size and capacity for general farm use. It is a machine that with proper care will last a lifetime, and may be operated by wind, horse, steam or water power, or by hand. We advise all who contemplate buying a sheller of any size or for any purpose, to write for their circulars.



SANDWICH MANUFACTURING CO.'S CORN SHELLER.

all kinds, this publication is very timely, of interest to all sheep breeders, and of importance to the owners and intending purchasers of the oldest breed of all sheep—the Merino.

tent to wait for their sale until then, and meanwhile it's hardly reasonable to expect that adult readers will hunt up smart school-boys or, better still, girls, to work out the sums.