and other fairs in the neighbourhood of London, and the noise and chatter of their North-Wales drovers resounded far and wide over the fair grounds. Why do all the Keltic nations make such a row about nothing?

Cattle on the Ranches.—Says a writer in the Picayune: "Live stock ranching by which untold numbers of cattle on the western and southern ranches suffer the pains of a hundred deaths, and tens of thousands of them die in indescribable agonies, is the most heartless business on earth: an abomination in the sight of God; and the *kings* are monsters of cruelty." Can this be true? I know that, three years ago, the deaths of cattle from starvation in one of our own Canadian ranches amounted to two-fifths of the whole stock; but since then, I have always understood that means were taken to provide food for the support of the cattle in winter.

Pickling oats.—C. S. Plumb, of the New York Experimental farm, says that "he has found that seed oats, soaked in sulphate of copper (four ounces to one gallon of water) for 40 hours, have produced a crop free from smut." *Connu*, Mr. Plumb; the sulphate of copper was used fifty years ago in England for pickling wheat, but was discarded for the much safer plan of using non-poisonous materials for the purpose. Take four bushels of wheat or oats; make them into a conical heap, on which place a pail of scalding-hot water; put a couple of good-sized lumps of quick lime into the water, and when the lime is slaked, poured the contents of the pail over the wheat and turn the heap several times. Some of the lime, if not of first rate quality, will remain unslaked, and should be allowed to stay in the pail.

Ammonia for six cents a pound.—Strange as it may seem, such is the price at which Mr. Viccars Collyer, a well known Leicestershire manufacturer of artificial manures, advertises his ammonia. The alkaline salts and phosphates (4.9 and 5.2, per cent.) I have neglected in the computation. This would make the sulphate of ammonia at the gas-works worth only $29 per 2,000 pounds.

Permanent pasture, according to the Orillia Packet of 1881, was an utterly ridiculous business, put forward by amateur farmers who neither knew our climate nor our soil. This paper has, like many another one, changed its views on the matter, as the following extract will show. It is a dangerous thing to laugh, as well as to prophesy, unless you know:

PROF. BROWN'S ideas of permanent pasture are strongly opposed by Prof. Arnold, of New York State, who considers them an undesirable hobby and a stumbling block, paying the poorest of any part of the farm, and only advisable in portions unfit for cultivation. In good land he asserts that cultivation will prove six or eight times more profitable than pasture. We think these sentiments need qualification. Grass, where crops will not grow, must be inferior, and poor pasture is undoubtedly unprofitable. But surely good pasture would pay. If animals can fill themselves in an hour, instead of in a day, as is usual, surely there is much advantage. Until full and fair tests prove the contrary, we shall maintain that Canada, or at least Ontario, is capable of growing good pasture. The northern and eastern States, probably so, though inferior to Canada, but in Texas and the "sunny south," generally, thick, green, sward is an impossibility. *Orilia Packet.*

Improvement of stock.—I mentioned above that the main point to be regarded in the improvement of stock was the *selection* of breeding animals. As Messrs. the professors at Ste.-Anne and l'Assomption, evidently like *authority*, I give a few extracts from a work of dear old William Carr on the "Booth Herds of Shorthorns."

The animal on which Bakewell first tried his improving hand was the sheep; and by a careful study of Nature's laws of reproduction, and studious *selection* of the best animals within his reach, he succeeded in producing a new and improved breed, the New Leicesters.

"He next carried out the same principles of improvement with regard to cattle, and was in a great degree successful; and if he was not so pre-eminently successful as he was with regard to sheep, it is because he had not in the Craven cattle such good material to work upon as his successors had in the Teeswater, and the Bakewell Longhorns have therefore given way to the superior merits of the Improved Shorthorns.

Mr. Thomas Booth began the improvement of the shorthorns previous to 1790. A race of cattle had existed in the valley of the Tees for many years previous to the above date, and were selected by Mr. Booth for his proposed experiments. "The defects to be cured were an undue prominence of hip and shoulder point, a want of length in the headquarter, of width in the floor of the chest, of fulness generally before and behind the shoulders, as well as of flesh upon the shoulder itself. The cattle had a somewhat disproportionate abdomen, a too lengthy leg, and a want of substance, indicative of delicacy, in the hide."

And how did Mr. Booth set about curing these numerous defects in the Teeswater cattle? By feeding them well? Not at all; but by selection. He appears to have proceeded on the principle that, whilst the general similitude and mingled qualities of both parents descend to the offspring, the external conformation—subject, of course, to some modification by the other parent—is mainly imparted by the male, and the vital and nutritive organs by the female.

It is a mere waste of time to cite any more *authorities* on the subject of improving stock by selection of breeding animals. Nobody denies for a moment that the Canadian cattle are half-starved all the winter and half of the summer (1),

(1) But it must be confessed," says Mr. Barnard. (J d'A Illustré 1886, p. 86) "that for one farmer that gives sufficient food to his Canadian cattle, there are 99 who deprive them of it more or less con-