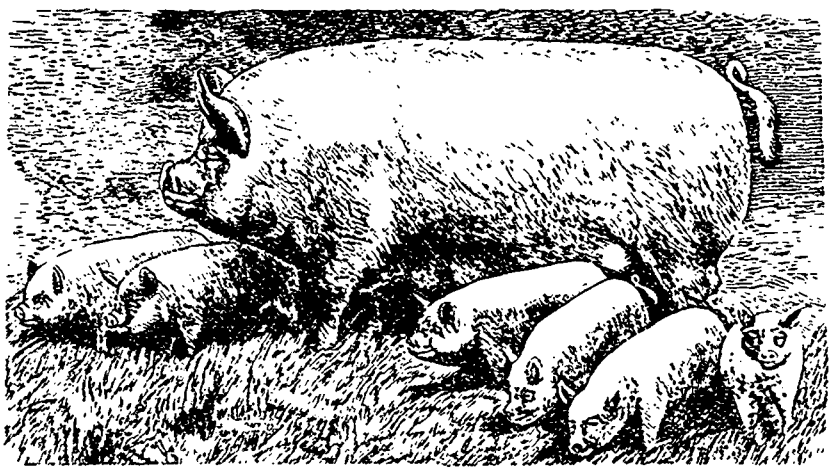
former consuming 3 32 pounds and the latter 5.96 pounds of dry matter per pound of gain. "Much the better gain was made by the lot receiving salt, and it was a profitable one with sorghum rated at $2 per ton. The gain made by the other lot, although more rapid than any made when clover constituted a large per cent of the ration, was an unprofitable one at the fall prizes, even with sorghum rated at $1 per ton."

Mangel-Wurzel.—From October 27 to November 24 the sorghum in the rations of the above two lots was replaced by mangels, one lot receiving, as before, salt in addition. The results indicating the composition of mangels and sorghum for comparison, are tabulated. "The pigs receiving salt at the rate of 0 24 ounce per day per hundred pounds here gave the poorest results, and the increase in weight was barely profitable with mangels rated so low as $1 per ton. The lot without salt made a profitable gain with mangels estimated at $3 per ton. * * * The mangels were eaten without waste, but no other coarse food was. The water-free food required per pound gain in weight was less than is usually obtained from any food excepting milk" After an intervening period, in which grain rations were fed, both the Cheshires and the Duroc-Jerseys were fed a ration of mangels and linseed meal, the mangels forming 95.7 per cent of the ration of the Cheshire and 97.5 per cent of that of the Duroc-Jerseys. As before, one lot of each breed was given a small quantity of salt in addition. The results of the trial are given in two tables. "At the prices of pork holding at the time of this feeding the gain made by the [Duroc-Jerseys] was profitable with linseed meal rated at $30 per ton and mangels at $2 per ton, without considering the manure. The gain made by [the Cheshires] was not profitable at these figures unless by taking into account the value of the manure."



A FIRST-PRIZE ENGLISH MIDDLE WHITE SOW.

DE OMNIBUS REBUS

New beds of nitrates.—Our children will rejoice, I doubt not, in the cheaper rate at which many natural productions will be laid at their feet, owing to the wonderful difference between the present price of freight and the price at which it will be profitable to transfer it from country to country fifty years hence. Half a century ago, the discovery was made that, in the interior of Spain, in the mountains of Estramadura, there existed large beds of phosphate of lime only awaiting exploitation to supply the English farmer with phosphoric acid at a cheap rate. Unfortunately, there were no roads fit for traffic, and as all the phosphate rock would have had to be carried to the nearest sea-port on mule back, nothing was done at the time, and since then, I suspect, the whole thing has sunk into oblivion.

But, now, news arrives from Africa that practically inexhaustible beds of *caliche*, the crude material of nitrate of soda, have been discovered in the Equatorial provinces, and as Dr. Peters, the German explorer, is the authority for the statement, there is every reason to believe it. Owing to the difficulty of transport, as in the case mentioned above, it will be some time before this new source of nitrogen will be available, but the partition of Africa among the European leading powers has been already followed by such extraordinary developments, that we may fairly hope that railroad communication with the interior will soon be established, particularly as Spain, the most sluggish of European countries, has nothing to do with it.

Agricultural education in England.—The two great English Universities, Oxford and Cambridge, seem to be about to take up the duty of instructing aspirants in agriculture. Not that the Senates of these great teaching bodies have conceived such a plan *ex proprio motu*, but the Board of Agriculture has "approached" them with a suggestion that some provision for training teachers in agriculture should be made by them. The Board advises the establishment of readerships in agricultural chemistry and botany, and so far, so well; but when it recommends the universities to carry on agricultural experiments. I conceive it is endeavouring to induce their leaders to embark ... a business *supra crepidam*.

Mangels.—Two new kinds of mangels have been brought out in Germany by Messrs. Simons, Lauker, and Simons. They are said to contain 11 % of sugar and only 82.2 % of water, the common mangel showing only 8.9 % of sugar and 88 % of water. Of course, though one per cent of sugar does not sound much by itself, when multiplied by the number of 100 lbs. in the crop it is a serious consideration. For, taking a fair yield of mangels at 20 tons an acre, the additional 1.1 % of sugar mounts up to 440 lbs., and the reduction of nearly 6 % of water is an important matter as regards carriage from field to root-cellar, being nearly 2500 lbs. per acre.