

to fulfil properly the function of digestion, it only retains  $\frac{1}{2}$  of what it can hold.

By the time the horse has done eating his food, the stomach has emptied itself twice, retaining only the third and last portion of the food.

The meal only lasts, at most, two hours; the first two batches remain only 40 minutes in the stomach.

The rapidity with which the greater part of the mass of food represented by a ration of 8 lbs. of hay passes into the stomach may not be an inconvenience, provided the *mastication* and *insalivation* have been sufficient. For hay only contains 7% of matters upon which the gastric juices exercise their influence—the albuminoids, to wit, as legumin, casein, albumen, &c.

The other constituents :

Starch, gum, sugar, the analogous matters on which the

the albuminoids. Now the more albuminoids any food-material contains, the longer ought it to remain in the stomach. *Oats*, which contain much more than hay, would pass out undigested, did they not remain longer in the stomach than hay.

But as oats are five times less bulky than hay, they remain there five times longer.

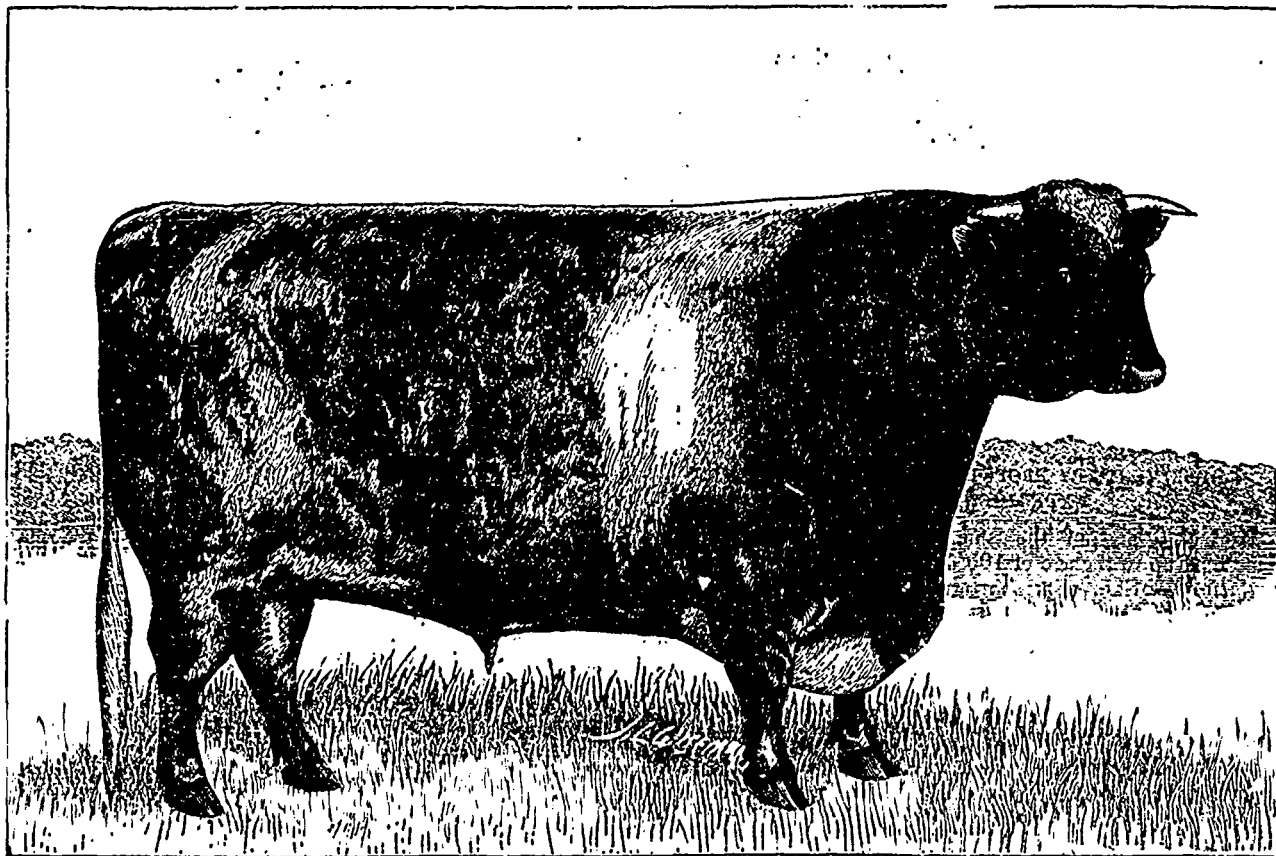
The ingestion of the feed of oats must not be followed too rapidly by the ingestion of the ration of hay, lest the latter should push the former into the intestines before its digestion be perfected.

*Practical deductions.*—From what I have just said the following practical results may be deduced :

1. For the horse :

A. Give the hay before the oats.

B. Do not give any more hay too soon after the oats.



SHORTHORN BULL 32490 SIR ARTHUR INGRAM.

The celebrated English prize winner, bred by Mr. Linton, Sheriff Hutton, Yorkshire, England.

saliva has already worked a transformation, must finish their conversion in the intestines. And the same with the fatty matters.

Thus, if the first part of the work—mastication and insalivation—has been properly done, the short stay of the food in the stomach will be sufficient to allow of the dissolution of the albuminoids the food contains by the action of the gastric juices.

But, if the hay, from any cause, be imperfectly tritured, or insufficiently insalivated, the action of the gastric juices will be insufficient, and the matters intended to support the body will quit the stomach without having been properly converted.

The action, then, of the gastric fluid is chiefly exerted on

C. Do not let the horse drink after having eaten the feed of oats.

D. Let him drink after he has had his hay, in order to remove from the stomach any obstructive matters and disperse them into the intestines, where the digestion is finished.

For cattle :—

A. The first mastication need not be so complete, since during rumination the food will be chewed again; and, besides, the fluids of the paunch are alkaline.

B. But, if from any cause, the chewing of the end is suspended; digestion cannot go on, since the food, having only been once masticated, is not sufficiently prepared.

C. Therefore, since rumination is at a standstill, suspend