

or second, as is the case with the food after it has undergone the process of *rumination*, or *remastication* as above described. The *third stomach* is also *ovoidal* or *oval shaped*, and is called the *manyplies*, being *plies* or *folds* covered with *papillæ*, with a *horny substance* extending along the margin, to aid in macerating the reduced food more perfectly before its reception into the fourth, *last* or *true stomach*, or *abomasum*, which is of *elongated form*, with *villous covering*, adapted to afford an ample supply of the *gastric juice* for the completion of the digestive process. The *smaller* and *larger intestines* of ruminants in no way differ from those of a Horse and Pig—having the same functions to perform. We shall notice any special distinction in treating of the feeding of the different classes *seriatim* (in succession.)

During the important process of rumination, the Cow is generally found couching on her *left side*, in order that the intestines, principally lodged on that side, may not press upon, or interfere with the action of the *Rumen*. After a pellet has undergone the process of *rumination* and is swallowed, there is a pause of two or three seconds, during which time the cow is making a slow and deep inspiration. By this means the *lungs* are inflated and press on the *diaphragm*, and the *diaphragm* presses on the *rumen* and *reticulum* and assist their action. The inspiration is suddenly cut short by an evident spasm; it is the forcible ejection of the pellet from the *reticulum*, and of a fresh quantity of food from the *rumen* over the valvular fold, to enter the *reticulum* so soon as it expands again. The spasmodic action is evidently followed by the passage up the *œsophagus* of the *ball* or *pellet* to the *mouth*. No portion of the food is returned for *rumination* in less than 14 hours—the average period is 16 or 18 hours, and any hard fibrous substances are not returned for 30 hours. In the Ox each *pellet* receives 30 to 40 motions of the mouth and jaws. In sheep a great many more. In the feeding of all ruminants it should be borne steadily in mind, that to give exercise to the *Rumen*, it is absolutely necessary to serve at least a portion of their food in such an unprepared state, that it shall enter the *Rumen*, and undergo rumination before being carried into the last stomach; and that dry fodder or cut chaff should therefore be mixed with other more nutritious food for this purpose. The paunch is of little use to the *Calf* while it is supported wholly on milk, as this *liquid* finds its way at once to the *last stomach*, and is easily digested.

It is but too true, that the farm management of our Domesticated Animals is, in too many cases, a comparatively neglected branch,—left too much to chance—conducted on no fixed principles—pursued as if in defiance of the rules of common sense. But we trust that Farmers will, by degrees, be brought to see, by repeated trials, how much they have been, hitherto, standing in their own light.

The introduction of new and improved Breeds should tend to direct more than ordinary attention to this branch of Farm Economy, and the facilities of conveyance, multiplying throughout the Country, ought to be a further inducement to Breeders and Feeders in the more remote districts to bestir themselves, seeing that facilities of transport place them in a very different position to that occupied by them heretofore. A few hours serve to convey stock,—live or dead, from one end of the country to the other, so that tedious journeys are avoided in bringing produce to market; and farmer and grazier can now advantage themselves of the general commercial principle of quick returns. They should advantage themselves of the benefit of judicious crossing, changing the natural characteristics of the older and more slowly maturing Breeds by commingling their blood with those Breeds remarkable for early fattening. The rearing and feeding of Domesticated Animals should now assume its merited importance, and