

Chemistry of the Fattening Process.

A lean cow or ox is in a very different condition, chemically considered, from fat animals of the same kind. In the first place, the poor animal consists of about two-thirds water, the fat one of only half, that is, in total weight. A fat animal is in a dry condition, a poor animal is like some of our bog meadows, very wet. When the fattening process begins, water commences to disappear, and fat, or suet, takes its place; and the increase in bulk during the process is largely of adipose matter. It is a curious circumstance that during fattening, the proteids, or nitrogenous compounds, increase only about seven per cent., and the bone material or inorganic substances only one and one-half per cent.

The cost to a farmer of fattening an ox is much greater at the close of the process than at the commencement, that is, increase in bulk or dry weight at that period is much more costly. If it costs three cents a pound for bulk, for the first month after a poor animal is put in the fattening stall, it will cost six cents the last month. If then a farmer consults his money interests, he will not carry the increase of fat beyond a certain point, provided he can turn his partly fattened animals to fair advantage. Farmers have perhaps learned this fact from experience and observation, and hence comparatively lean beef abounds in our markets. Whilst this is of advantage to the farmer, it is very disadvantageous to consumers of the beef, for the flesh of a fat animal in every case is much richer in fixed, nourishing material than that of the lean, and it is never good economy to purchase lean beef. It is better to purchase the poorest parts of a fat animal than the best of a lean one. The best piece of a fat ox, the loin, contains from 21 to 28 per cent. more fixed material than the corresponding piece in a lean one, and curiously enough the worst piece in a lean one, the neck, is the richest in nourishing material. The flesh of the neck improves very little in fattening, hence, economy considered, it is the best portion to purchase, as its value is in a measure a fixed one.—*Boston Journal of Chemistry.*

Australian Wool at the Centennial Exhibition.

Australia and the Cape of Good Hope—those great sources of the world's wool supply—are largely represented at the Philadelphia show. And the opportunity for American wool growers to form definite opinions concerning these foreign wools—the demand for which is increasing amongst us, is about as good as the present generation are likely to have. None of our predecessors, either as growers or manufacturers of wool, ever had such an opportunity as we now have to decide whether we should persevere in the effort to produce fine wools, equal to those shown by our friends from the Pacific, or rather to direct our attention to the fullest in producing a heavier if a less fine fleece, than the best these Australians show us. For if the exhibits are a fair criterion of the produce of the Cape and Australian colonies, as we believe they are, then the latter in so far as distinctness of type, character, and quality are concerned, are unmistakably distinct from the Cape wools.

The latter approach closer to the American and European wools. But the Australian are all over distinct. After looking over the decidedly magnificent assortments in the courts of Queensland, New South Wales, Victoria, South Australia and New Zealand (all these countries are separately represented, let us recollect) then we begin to see what is meant by the term pure Australian merino wool.

The exhibits of South Australia and New Zealand are shown in the bale, and although admirable in their way, and, perhaps, as valuable as the Queensland and New South Wales wools, they do not offer the same facilities for becoming acquainted with the real nature of the exhibits, and the animals from which they have been shorn.

We are looking at the subject from a breeder's point of view, mainly, but still taking quality, in a buyer's sense, into consideration, and we cannot but thank these Australian wool-growers for sending their fleeces entire. We have thus opportunity to examine their products, with even more effectiveness than if they were on the backs of the sheep. We can see the length and quality of the staple on the shoulders, back, belly and loins; can judge of the animal by the weight of the fleece; can judge of the climate by the evenness of the staple, and its grazing capabilities by the length of the wool and its general appearance.

In the Queensland court all these particulars, so valuable to the grower, are given with a distinctness that shows careful, practical common-sense in the preparation of the exhibits; and, fortunately, these Queens' and wools are a precise counterpart, in type, of the Australian wools generally.

All the fleece wool in this court is in glass cases, and is put up in admirable order for inspection. To take the list *seriatim*, there is:—

Fleece clothing wool, from ewes fed on indigenous grasses in paddocks. Eleven month growth, shown in the grease. Pure Australian Merino.

Fleece washed clothing wool, fed on indigenous grasses only. This is a sample of the highest priced clothing clip grown in Queensland. The maximum price per lb. was forty-one and a half-pence, and the general average thirty-three and a half at the London sales 1874.

Ram's fleece clothing wool, shown in the grease; from a three-year old ram.

Ewe's fleece combing wool. Sheep bred within their own blood for 21 years. Fed in paddocks entirely on indigenous grasses. Shown in the grease.

Young ram's fleece, fine combing wool. Finest combing wool grown in Queensland. Sheep improved by Tasmanian Merinos; bred pure for more than 50 years. Shown in the grease. Fed as above. — *From a contribution to the Prairie Farmer.*

The Cattle Show Season.

A cattle show is a fine sight on a fair day. Many thousands will be present during the next few months at these annual exhibitions. The chief complaint will be that there is so much to be seen, and so little time to see it in. A day at the Royal Agricultural Society, for instance, is something like an hour at the Royal Academy, and anyone who has been at Burlington House this, or any other year, knows what that mean.

The local cattle show, in its way, is an important institution, stimulating the breeders of the district to improve their stock, each in gentle rivalry trying to outvie his neighbor. It is at the cattle show, when his horse, cow, pig, or sheep stands alongside his brother-farmer's animals, that he finds out the failings and virtues of his own stock, and then goes homewards with a determination to go on improving its type and general character. Though, perhaps, beaten, he is not quite vanquished while he lives to fight another day.

To the healthy influence of competition at cattle shows, we must greatly attribute the present fine, improved character of our flocks and herds. In the exhibited animals the breeder sees what points to avoid or to cultivate. If he determines on making a mark himself, he does not fail to procure the blood of some winning strains. He cannot well do it without. Other laborers, however, have been in the field, and he enters upon their harvest. It would be folly to attempt to perfect an old unpedigreed strain of shorthorns, whilst the work is already to hand in a far advanced stage, from which the breeder may at once take his starting-point without loss of time. It is this consideration which puts a somewhat fictitious value, apparently, on the strains of cattle, horses, and sheep which have a special character and the power of transmitting their best qualities to their descendants. It is not the value of the individual animal as a food producer or as a breeder of ordinary stock for sale to the grazier or butcher, but its potentiality for good for generations to come that makes it a much-coveted prize. The many years of skill and science also spent in developing the strain, the costly experience gained in the face of many difficulties, all go to render highly-bred animals valuable. Were it otherwise, fancy prices would be ridiculous. The cost of producing stock is necessarily included in their market price—following a common law of commerce. Thus prices that sometimes appear sensational are frequently but a natural result of time and treasure sunk in forming the special type, which, if broken, would take a generation to repair.

To all, and especially to the farmer, these exhibitions of stock and farm implements are educational. It is therefore satisfactory to find them ever increasing in popularity. The influence they exert on modern agriculture must be great. They are deserving of every support, and we trust the present show season will be as pleasant and successful as that of any preceding year.—*Abridged from the Farmer (England).*

Philadelphia Print Butter.

Great care, uniformity and system characterize all the processes for making the famous and costly Philadelphia print butter. The milking is done quietly and rapidly, the same milk-maid always attending to the same cow. The spring-house is usually of stone, on a side hill, the floor covered with running water, and therefore always cool and free from odors. Deep tin pans, painted on the outside, with bails for handling, are filled to the depth of three inches, placed on an oak floor, surrounded with cool, clear water of a temperature of 58°. The cream is taken off in twenty-four hours, kept in deep vessels holding two gallons, and stirred whenever a new skimming is added. A barrel churn is used, the churning lasting an hour, when a little cold milk is added to unite the butter together. The buttermilk drawn off, ice cold water is added twice, a few turns given to the churn each time, and the last water is scarcely colored with milk. A gentle rocking of the churn soon collects the butter, which is left two hours to drain off the remaining water through a small hole made for the purpose. The butter is worked by a corrugated wooden roller revolving on a shaft supported over the centre of the table, which also revolves under the roller. The roller does not quite touch the table, so there is no crushing of the particles, but a separation which permits the water or milk to flow away.

A cloth wrung dry in cold spring water is repeatedly pressed upon the butter until not a particle of moisture is seen upon it as it comes from the roller, and the butter begins to adhere to the cloth. This is called "wiping" the butter. An ounce of salt to three pounds of butter is then thoroughly worked in by the aid of the same machine. It is then weighed in pound prints, deposited in trays, and set in water to harden. The next morning it is wrapped in damp cloths, each pound by itself, put in a tin case upon wooden shelves, with two compartments of pounded ice to keep it cool, and surrounded by a cedar tub, it is sent to market and sold at a dollar a pound.—*Ohio Farmer.*

Soiling Cows.

At a recent meeting of the Central New York Farmers' Club, Mr. A. L. Fish read a paper from which we select the following on soiling cows:—

The economy of soiling cows is based upon the general adaptation of land for that purpose. Strong land with good surface for tilling will feed double the amount of stock that the same will by grazing. But extra labor in growing and feeding cultivated crops the whole season absorbs the increase of products above the ordinary mode of grazing. When pasture lands are accessible for manuring and tillage it is good economy to till as much of the pasture land as can be manured with thirty loads of barnyard manure to the acre, planted early to soiling corn and well tilled. It will then mature in season to feed after the flush of feed is past, to keep up a good flow of milk till fall feed in after growth, pumpkins, apples, roots, etc., are at hand. If the crop is not all thus needed, the balance, well cured, is equivalent to hay at all seasons, and a wholesome change of feed. Such an amount of soiling I have always found to be a profitable improvement in the soil by eradicating foul weeds and changing the grasses in the sward. When pastures are so distant as to make hauling manure too expensive, I have done well by enclosing the desired area nearest at hand. After manuring and raising the crop, feed it out on a similar plot next adjoining, which would manure the latter for the next year's crop without necessitating the transfer of yard manure.

A judicious feeder of cows should always keep himself supplied with nitrogenous food for cows when it falls short in quantity or quality of grasses.

Experiments in fattening animals are invariably in favor of the most perfect quiet, and a mild, even temperature. A mixed, cooked diet is also found to be the most fattening to most animals, the horse being an exception to the rule. Cooked food is prepared for quicker digestion and assimilation, consequently the animal will use and appropriate more in a given time, by which a saving is made in the amount of food requisite to keep it in condition a longer time than would be required for slow digestion. Grains and properties containing the most oils are deemed the most fattening. Plenty of water is as essential to the fattening animal as to the cow in milk, especially to the swine.