

The brood mare class at Ayr was led by a choice pair—Scottish Marchioness and Enid, owned by Mr. R. Sinclair Scott, and they got first prize as the best pair of mares in the field. Mr. Scott is laying in a first-rate stud, from which many first-class animals should one day be bred.

Maryhill Show, which is chiefly patronized by breeders and exhibitors in the four counties of Lanark, Renfrew, Sterling and Dumbarton, was held on 29th April. It was an unqualified success. I do not suppose the oldest inhabitant can recall a better show held on the beautiful show ground outside of the Glasgow municipal boundaries. Brood mares formed a phenomenal exhibition, and Messrs. Galbraith Bros.' Topsman's Princess, by Prince of Wales, was a popular first. Mr. William Park's Nelly, by King of the Forest, from Brunstone Portobello, which followed, was an uncommonly good second. She was got by King of the Forest, and was first last year at the Highland. The same gentleman was first in the class of yeld mares with a splendid three-year-old bred in Cumberland and got by that great horse Lord Lothian 5998. This mare was awarded the championship as the best female in the show. Mr. David Mitchell, of Millfield, was first in the three-year-old class with Princess Mand, a level, low-set, typical Clydesdale, got by Top Knot, and first in the two-year-old class with the sweetly balanced filly, Maritana, by Excelsior. The first yearling was a great beauty, owned and bred by Mr. James McLaren, Bandeath, Sterling, and got by Boy in Blue. It is worthy of notice that of these five first prize-winners, no less than three, including the Champion, are by sons of Top Gallant—Lord Lothian, Top Knot and Boy in Blue, were all got by the Ardgowan Stud horse.

The winning horses amongst the stallions were, in the three-year-old class, Mr. W. S. Park's Gallant Poteath, a son of Top Gallant and the Glasgow premium horse; in the two-year-old class Mr. William Clark's Darnley Again, a splendid horse by Darnley's Hero; and in the yearling class, Mr. James Johnston's colt by Prince of Albion. Gallant Poteath was awarded the Championship, and there were three sons of Prince of Albion amongst the seven prize-winners in the yearling class.

SCOTLAND YET.

Feeding Calves.

On the successful start in feeding while young hinges the after success and usefulness of the mature animal, and it is those who study to follow or assist nature that achieve the greatest success in breeding and feeding. Thus we find in the four branches of farm stock, viz., horses, cattle, sheep, and swine, the most perfect food for the young animal is the milk that nature has supplied. This contains all the elements for forming bone, sinew and muscle, as well as to finish and round into lines of beauty, and harmonize the whole animal structure. Again, milk is not only a properly balanced food that contains all the necessary constituents for growth of the component parts of the animal construction, as all the essential elements are held in solution, but is also in the best state for assimilation, thus supplying the nourishment with the least possible strain upon the digestive apparatus. The following table gives the average composition of milk from the cow, mare, and ewe:—

	Cow	Mare	Ewe
Casein, or flesh formers.....	4.65	3.40	4.50
Butter fat.....	4.00	2.50	4.20
Milk sugar, food of respiration and fat.....	4.50	3.52	5.00
Ash.....	.60	.53	.68
Water.....	86.85	90.05	85.62

Thus the young animal receives through the casein in the milk the chief constituents, which when chemically examined contain the earth of bones, and in such a soluble form that they are capable of reaching every part of the body. This clearly shows that the casein performs a great office in the growth of the young animal, as it furnishes

the nitrogen in the formation of muscle, nerve, brain, skin, hair, and hoofs, and in such a soluble form that it can reach every part of the body. Then the oil in the milk furnishes fat ready to be appropriated by the young animal to be changed into animal fat; therefore we find milk is a perfect food. It is replacing it with a cheaper and more convenient diet that requires practical skill and knowledge, for this in all young animals is the critical period in their lives. It will then be necessary to study to supply a food that contains the same elements as the milk, and also in a like proportion. By analysis, as well as in practice, wheat, rye, barley, and corn are all too heating, with not enough of muscle-forming material, while peas and oats are much superior in forming muscle, and with bran and oil cake would form a capital ration later on, but are all too irritating to the stomach of the young animal at first. We have found nothing equal to middlings, five parts, and one of oil cake, and ground peas and oats added later on. It should also be served up in such a form that the young and delicate animal may derive the full benefit of what the food contains without impairing in any degree the digestive apparatus. It would be equally improper to remove the milk diet abruptly or to feed the grain ration too generously at first. The changes must be made as much by degrees as circumstances will allow. One overdose of meal too often disarranges the whole system so that it is extremely difficult to recover the health of the animal and tone up the system so that the food will have the proper nourishing power. By mixing the meal ration twenty-four hours previous with cut hay, or if grass is used, immediately before feeding, better results will be obtained. Whole milk, the natural food, as before stated, has a large proportion of oil which prevents constipation, thus promoting health. When milk is skimmed this oil is removed, and the animal fed on the milk is liable to become constipated, and in order to carry this off nature enforces diarrhoea, always a symptom of indigestion. Therefore, to supply this needed element, a little oil meal first mixed with cold water and then boiled and thoroughly mixed with the skimmed milk supplies this essential. Whey is often held up by cheese factories as good feed on account of the amount of sugar of milk it contains. Although sugar is an important element, no animal could subsist upon sugar alone. Again, whey is so liable to deterioration through becoming acid that in this state it is dangerous to feed to calves. Though by skalding the danger of scouring may be modified, still as ordinarily handled at cheese factories, whey had better be left out of the calf feeding ration.

England's Importation of Frozen Meat.

BY PROF. S. M. BARRE.

England's importation of frozen meat has been steadily increasing, and shows that from 15 to 20% of the meat now used in England is imported in a frozen condition. The following figures show the progress of the frozen mutton trade during the last three years:—

From	1889 HEADS.	1890 HEADS.	1891 HEADS.
Australia.....	86,547	27,984	334,693
New Zealand.....	1,068,296	1,531,393	1,896,706
Different points.....	10,168	18,897	18,897
La Plata.....	1,000,936	1,196,531	1,073,325
Total.....	2,164,769	2,948,076	3,323,621

The yearly production of frozen mutton is now estimated at 8,000,000 heads, and new slaughter and freezing establishments are now being erected in New South Wales and Queensland. Eighty-seven ships equipped with freezing apparatus were engaged in this special transportation trade during 1891, and new ships are now being built and equipped for this service between Queensland and London. Number of sheep sold to Great Britain during the last three years:—

	1889 HEADS.	1890 HEADS.	1891 HEADS.
	25,632,020	27,272,459	28,732,501

Poultry.

Poultry on the Farm.

BY IDA E. TILSON, WEST SALEM, WIS.

When "the time of the singing of birds is come, and the voice of the turtle is heard in our land," as wrote wise, observant Solomon, then we of this practical age like to hear mingled clucks and peeps from our domestic fowls. We have now approached a tender subject—the spring chicken. Before proceeding, it might be well to explain the following terms, which, in conversing on poultry culture with people, I often find confused. A "coop" is the cage for a single hen and her brood, while "hen house" means the larger inclosure for a whole flock. "Chick" applies to the downy state. We have "chickens" when they feather, and "pullets" and "hens" as they mature. A lady recently asked whether I had "chickens" to sell, and after further inquiry I learned "sitting hens" were what she really meant and desired.

Coops may vary somewhat in size, according as the time chosen for raising chickens is early or late, and the breed to be accommodated is large or small. My coops are square, reminding one of a modified dry goods box. They have a slanting roof, rain proof, and a floor. This floor stands on two cross pieces of joist, which raise it from the ground and insure dryness. Perpendicular slats, from top to bottom, extend across the whole face of coop. In addition, outside the slats, is a close-board front, two-thirds as high, hung as a door, with hinges at bottom. Unbuttoned and let down, day-times, this forms a nice, sunny platform for little chicks, and is a night protector from vermin, while yet admitting air above. In hot weather this outer front might be made of fine wire. Skunks, rats, and dogs easily dig under and into floorless coops, and squeeze between slats, or reach into a coop that has no closed front some distance up. Years ago, when we had primitive arrangements, an unearthly noise awakened us. Following our faithful pussy, which was gazing anxiously in a coop, there was seen and shot a skunk, four chickens surviving the horrors of sound and scent. A portion of my coop's rear side is provided with leather or other hinges, and with button or hook fastener. This forms mother Biddy's door, and mice, too, for here are inserted scraping knife, whisk broom, whitewash brush, and other weapons of warfare against filth. A yearly outside and inside coat of whitewash, with some sulphur stirred in, is both wholesome and artistic. I once placed a brood within a coop whitewashed that very morning, and barely saved hen and all from dying of chills, learning thereby to make all preparations well ahead. A daily bedding of June grass or rowen makes coop cleaning easier by bringing out the droppings on itself, and if fine, well-packed, and not too deep, seldom entangles the chicks' toes, and must add much to comfort. For constructing the coops use lumber as light as practicable, so the little dwellings can easily be moved about.

I formerly had trouble from hens picking each other's chicks, even unto death occasionally, till I adopted the plan of locating my sitting hens side by side. These are taken off together every morning, and, though Biddy is supposed to be an exclusive creature, sticking resolutely to her own set, three weeks' constant association wears out all animosities and creates considerable friendship. Having had dust bath, sitting quarters and food so long in common prepares the way for neighborly courtesies. Several cluckers are set at the same time, so that they can begin housekeeping simultaneously, and their chicks, before given them, are well mixed, to secure uniformity in number and appearance for all the broods. As a result, the mother hens often stroll in companies, or at least hunt in couples, and a delightfully changeable and experimental relationship exists. Only strong chicks remain with roamers, weak ones gravitate to the quietest hens, and the clucker which stays by longest gets finally a monstrous family. Years of kind, systematic treatment, and a determination to be gentle and patient with little creatures knowing so much less than myself, have helped develop a trustful, friendly feeling among my fowls.