first horse to lower the colors of his sire, winning first and champion at the Shire Show, London, in 1898, 1899 and 1900. Buscot Harold is the sire of many winners, and was let for £1,000 for one season.

In Tatton Friar, we come to a younger horse, and one of a totally different stamp. His great characteristic is weight, and in this respect he is probably without a rival in the country. A dark brown, with white markings, bred by Mr. J. Ball, Chester, owned by Earl Egerton, of Tatton, Knutsford, Cheshire, and foaled in 1900, he is by Conquering Harold, out of Sandycroft Rose, by The Friar. In 1904 he came out at London and ran a neck-and-neck race with Birdsall Menestrel for the class honors. He then won the £50 Gold Cup at the Royal Lancashire, and was second at the Yorkshire. In 1905 Tatton Friar again won the Royal Lancashire Gold Cup, and at the beginning of this year experienced very hard luck in not getting the championship at the Shire Show, London, for it was only after a long struggle that he gave in to Present King II., and in many opinions the verdict should have gone in his favor. This horse seems to have a very bright future before him as a sire; his stock are coming out well, and win in the show-ring among the best of company.

The last of the stallions dealt with has probably been seen in the flesh by many Canadians who peruse these pages. This is Girton Charmer 20515, which was included in Lord Rothschild's exhibit at Toronto last September. He is a brown, foaled in 1901, sired by Normaer of Batsford, dam Southgate Charm, by Harold. This horse is rather a different type to what is commonly seen in the showring. He does not carry quite such a profusion of feather as is prevalent to-day, but, nevertheless, he is a sire of sterling merit, and every inch a cart horse of the weightiest class. A complete list of Girton Charmer's honors, did space permit, would doubtless be one of interest. Suffice it to say he was first and reserve junior champion at London Shire Show in 1903, first and junior champion at Shire Show in 1904, and first and supreme champion at Shire Show in 1905.

We now come to the females, on whom so much of a stud's success depends, for, without a good and, above all things, sound mare, it is useless to attempt breeding.

Princess Beryl fills the eye as an ideal Shire brood mare. She is a tremendous animal, showing wonderful quality, with a roomy body, carried on magnificent limbs. Her pasterns are good, feet strong and open, while the quality of her feather is perfect. She is a member of the famous Tring Park stud, owned by Lord Rothschild, bred by Sir Henry Ewart, and is a black nine-year-old daughter of Prince Harold and Jewel, by Electric. Many honors have fallen to her share, including (1904) fifth, Shire Show, London, in strong class: first and champion, Shire Horse Show, London, 1905; and first and reserve champion, Shire Show, London, 1906.

Sussex Blue Gown is a grey six-year-old, by Nailstone Cœur de Lion 16269, dam Sussex Blue Bell by Victorious. She was bred by Mr. T. Luckin, and is a considerable prize-winner, her victories including first and champion at Shire Show, London, 1906. She was sold for 510 gs. to Earl Beauchamp, Madresfield, Malvern, after the Shire Show. Sussex Blue Gown is a grand, upstanding mare of very striking appearance, with immense bone and substance, which generally carry to the fore in the show-ring; but in spite of these, she hardly displays the sweet feminine character one likes to find in a brood mare.

Our series concludes with two very successful youngsters, which give an excellent idea of what a Shire colt should be. Mr. F. E. Muntz's King Forest is a two-year-old son of the renowned stock-getter, Lockinge Forest King 18867, out of Lockinge Dimple. In 1905 he was unbeaten at the foal shows; in 1906 he was second to a colt by the same sire at the Shire Show, London, and since then he has won first at the Royal and several other shows. He is a beautiful colt, brimful of quality, an excellent mover, with an abundance of flat bone and good feather.

Combermere Abbess is a black-brown yearling filly, sire Tatton Friar, dam Moor's Star, by Regent II. She was bred by that enterprizing young breeder, Mr. Noel Torwood, of Whitechurch, Salop, and is owned by Mr. Egerton Orme, Ash, Etwale, Derby. This filly is quite one of the best of her age seen out for some time, combining size, weight and quality, whilst in the all-important points of feet, joints and feather, she bears the closest scrutiny. Her prize-list is a very considerable one for so young an animal, including first in open and local classes at Royal Show, Derby, 1906.

The Chemistry of Breeding,

An article from the pen of Dr. J. C. McCoy, the Delaware breeder, who owns the great young stallion, Admiral Dewey, 2.04¾, on the "Chemistry of Breeding Trotters," promises to attract much attention. In this article, in the *Horse Review*, Dr. McCoy says:

"The horse's food must contain in a soluble form every single element that is needed for growth, repair of used-up tissue, and the production of heat and energy.

"The food of the horse is grass and grain. Grass and grain grow about everywhere the horse is bred, or you can purchase them in the dry state and have them given to your horse. So, you see, the question of the horse is a simple matter. Nobody, however, The grass you feed, the grain you grow or buy, will contain only those elements that composed the ground on which they grew.

"It is true that grass and grains alike take some properties from the air, but these are the gases, carbonic acid and nitrogen. The horse himself takes the oxygen he uses from the air. All the other elements that the horse requires he must get out of the ground, and ground differs as much as do the climates of different sections. In one locality the land will be rich in lime and poor in potash; in another it will be rich in iron and potash and contain but little lime. In another region it will be rich in every necessary element excepting phosphorus, and so on through a long scale of variations.

"Chloride of sodium, a substance containing two essential elements of the horse's body, sodium and chlorine, is but little contained in any food-stuff, so to have it in the horse's body, it must be given to him separately.

"Common salt plays three great functions in the horse's body.

"First.—It furnishes him with gastric juice with its needed acid.

"Second.—It furnishes him with soda for his bile and blood.

"Third.—It assists in the passage of the digested food in the lymph vessels, and into the blood vessels. It assists in the passage of the food elements from the blood vessels into the tissues.

"Many of my readers have no doubt noticed that on a given farm the horses would thrive on one field, while on another they would not do nearly so well. In such cases the pasture of the field that did not give good results would appear just as abundant as that in the field on which the horses did do well. The cause of this variation on the same farm is due to the fact that one field lacked some necessary element which the other field possessed. As the soil is, so are the plants grown in it. A complete soil furnishes complete provender, an incomplete soil furnishes incomplete provender.

"I wish, also, to say something as to the acidity of grass, as applied to haymaking. At night grass is full of acid; on cloudy days it is acid; in the morning and evening it is neutral in reaction. At midday, with the sun pouring down its life-giving rays, all the grass is strongly alkaline. This is the time to cut hay—from 10 a. m. to 3 p. m. Cut your hay on sunshiny days and toward midday; then cure it in the cock, to avoid acid fermentation in the barn, and you will have an article worth, as a feed, double the ordinary hay of commerce."

Using Two-year-old Stallions.

A Saskatchewan reader says: "I have a stallion colt that will be two years old in May. He has wintered well being fed on hay with a small ration of oats and been let out in the yard to run on all nice days. Could I breed some mares to him this spring? If so, how many without injuring him? Also what should I feed him on, to help get results?"

A colt of this age might easily do a season of twenty to forty mares depending upon his individual stamina without affecting his health. There is the further danger though, of the stock of so young a horse not coming to so full a size and possibly of not being so rugged and hardy. To partially avoid this danger the services of the colt should be extended over a long season, say from May first to the middle of July and giving him not more than two mares a day. Unless he refuses mares there will be no need of feeding him anything but hay, oats and bran. Whatever feed will keep him in good health is best, but give him plenty of fresh air, light work and fresh water. If he is a shy breeder he will have to be coaxed. Some stallions absolutely refuse to serve mares in milk, but will take others, and should be handled accordingly until they become less particular.

U. S. Clydesdale Men put up Bars Against Scotch Horses.

A press report states that the executive of the American Clydesdale Breeders' and Importers' Association decided at a meeting recently to repudiate all animals registered in the Clydesdale Stud Book of Scotland, that are imported to America, whose registration does not comprise at least five full-blood crosses.

This is in line with a notice of motion (Canadian Clydesdale Studbook, Vol. XIV, page 593.) given by Dr. A. G. Hopkins of Winnipeg at the annual meeting of the Clydesdale Horse Association of Canada, February 8, 1906, "That this Association do not accept pedigrees for registration in the Canadian Clydesdale Stud Book from any country whatever, that do not come up to the same standard (four crosses of registered sires for mares and five for stallions) as demanded of the home breeder; and also that the Minister of Customs be asked to make the same the basis for free admission to the ports of Canada.

STOCK

(*Contributions invited, discussions welcomed.*)

Prizes for Milking Shorthorns.

The American Shorthorn Breeders' Association are continuing their premiums for milking Shorthorns for the big shows of 1907. The shows to receive the money are the International American, Royal and Hamline. The association gives $400 to each, in two classes, cows three years and over and cows under three years and for the state fairs $200 each, provided each association duplicates the money. It was decided also to adopt the single judge system at the shows of Shorthorn cattle.

Sheep Shearing and Sheep Feeding.

The appetite of the public for mutton does not abate one jot, the price to be paid, the retailer for joints being the main deterrent to the consumer. At Port Arthur the fattening station written up and illustrated a year ago in this paper is still in operation, and rather increasing its output than otherwise. The sheep are finished on screenings procured from the elevators there, and give good returns for the feed. A valuable by-product is the wool, some sixty-five thousand pounds being expected this season. There are about ten thousand sheep in the yards there at present, the market for the finished stuff being Toronto. These sheep are raised out West and are brought down late in the fall to Port Arthur.

The Central Alberta Live Stock Growers' Association.

The main feature of this convention, held in Red Deer a short time ago, was the attention given to the cost of marketing cattle and the various hindrances interposed to prevent the greater growth of the live stock industry out West. The range men were not there in force, but we present the figures to our readers as given at the convention. The president of the Red Deer board of trade called attention to the great development of the cattle business in Alberta and the large sums paid annually to the stock raisers which, passing through the usual channels of trade, produced that increasing volume of business characteristic of the Northwest. He deplored the large importation of American hams and bacon while Canadian packers were able to secure less than one fifth the number of hogs they were able to handle and Alberta coarse grain selling at beggarly prices. This grain should be fed and if properly fed would bring to the farmer and stockman double the price now realized for it.

The president, G. F. Root, called attention to the fact that cattle were bringing about $20.00 less in Winnipeg than were the same grade of cattle in the United States. The generally accepted explanation of this fact is the higher freight in Canada than on the American lines, and with a view of ascertaining to what extent this is true, he had instituted a careful inquiry into the matter and had ascertained the following:

Great Northern west of St. Paul 1501 miles, rate 71c. per cwt.

Great Northern east of St. Paul 2581 miles, rate 99c. per cwt.

Canadian Pacific—Stettler to Montreal 2430 miles; 94c. per cwt.

Canadian Northern—Strathcona to Montreal 2260 miles; 94c. per cwt.

FEED CHARGES.

In U.S.A. west: Corn 75c. per bush., oats 60c, hay $20 per ton.

In U. S. A. east: Corn $1.00 per bush., oats $1.00, hay $30 per ton. In Canada, west: Hay $15 to $20 per ton.

In Canada, west: Hay $18 to $20 per ton.

From these figures it was evident that the Canadian shipper has the advantage over the American in point of freight rates and feeding charges, but these advantages are more than offset by the difference in time, Canadian stock being moved at less than half the speed of the stock trains on the American lines, and he cited his own experience in importing a car load of horses which made an average of 3½ miles per hour between St. Paul and Red Deer.