

## EXHIBITS OF THOROUGHbred STOCK AT THE WORLD'S COLUMBIAN EXPOSITION.

The live stock exhibit at the World's Columbian Exposition was one of the most important and instructive features to attract farmers and others who cultivate the soil and are stock raisers interested in animals. It was noticeable that the attendance jumped nearly 25 per cent as soon as the live stock exhibit was opened, and many people expressed themselves as having waited for this event.

The Exposition management did everything in its power to encourage this exhibit and offered premiums aggregating \$150,000, and this amount was increased to the extent of \$100,000 more by live stock and other associations interested in the breeding of fine animals. Breeders all over the country took greater interest in this exhibit than in anything of the kind that has ever been held, and several men of large means scoured Europe for the finest animals that could be had. Animals thus purchased were brought to this country primarily to be exhibited at the Exposition, but also with the intent of keeping them here; and as a result of this desire among breeders to excel in their exhibits the country benefits by a great many highbred animals. The very best of every recognized breed was to be found at this exhibition, and in every respect it was the largest and most successful display of live stock the world has seen. It was attended by leading breeders from this country, and the live stock associations of Germany, France, Great Britain and other countries appointed responsible members as delegates to attend. The result of the exhibition will be the dawning of a new era in the breeding of fine cattle in this country.

The Exposition built 40 stables in the south part of the grounds in which to house the stock. These stables were 200 feet long and 42 feet wide and were provided with the latest improvements in the line of ventilation, drainage, stable equipment, etc. The stables were sufficient to accommodate three thousand animals in stalls varying from four feet six inches to ten feet in width, and with the driveways between the buildings covered an area of twenty-seven acres. Animals were never cared for more tenderly. The horses were groomed and exercised and watched with the greatest of care, and the cattle were combed and brushed, their tails crimped and their horns carefully polished each day.

The exhibit opened August 21 and closed October 28, and prizes were offered in each ring or age. Ninety prizes were awarded each of the fourteen breeds of cattle. One of our illustrations last week showed a prize winning cow of the Holstein-Friesians. She, born and bred in this country, is called Walled Lake Queen, and was entered by C. V. Seeley, New Farmington, Mich. She carried away \$100 worth of prizes, \$50 being the Columbian Exposition prize and the other \$50 the sweepstakes prize.

The prize Dutch belted bull shown in our illustration last week was exhibited by H. B. Richards, Easton, Penn., who exhibited a herd of 35 or 40 animals of this breed. In fact, all the animals of this breed belonged to this exhibitor. This prize winner was Byron, who carried away \$85 in prize, which included the first prize in its class and the live stock association prize. He was entered in the class of bulls three years old or over; sweepstakes bull of any age, as well as with a herd. He is an American-raised animal.

Prince Attractive is the name of the prize winning Clydesdale stallion illustrated in our present number. He is owned and was exhibited by Robert Holloway, Alexis, Ill. He was entered in the section of stallions two years old and under three, and he took \$350 in prizes—\$150 being the Columbian Exposition award and \$200 a special prize offered by the American Clydesdale Association, which made a special effort to encourage a fine exhibit of this breed of animals. He also took an extra prize offered by the Great Britain Clydesdale Association.

SOME of the Comstock mines are so deep that no means have yet been devised to overcome the excessive heat.

## Manufacture of Soap Powders.

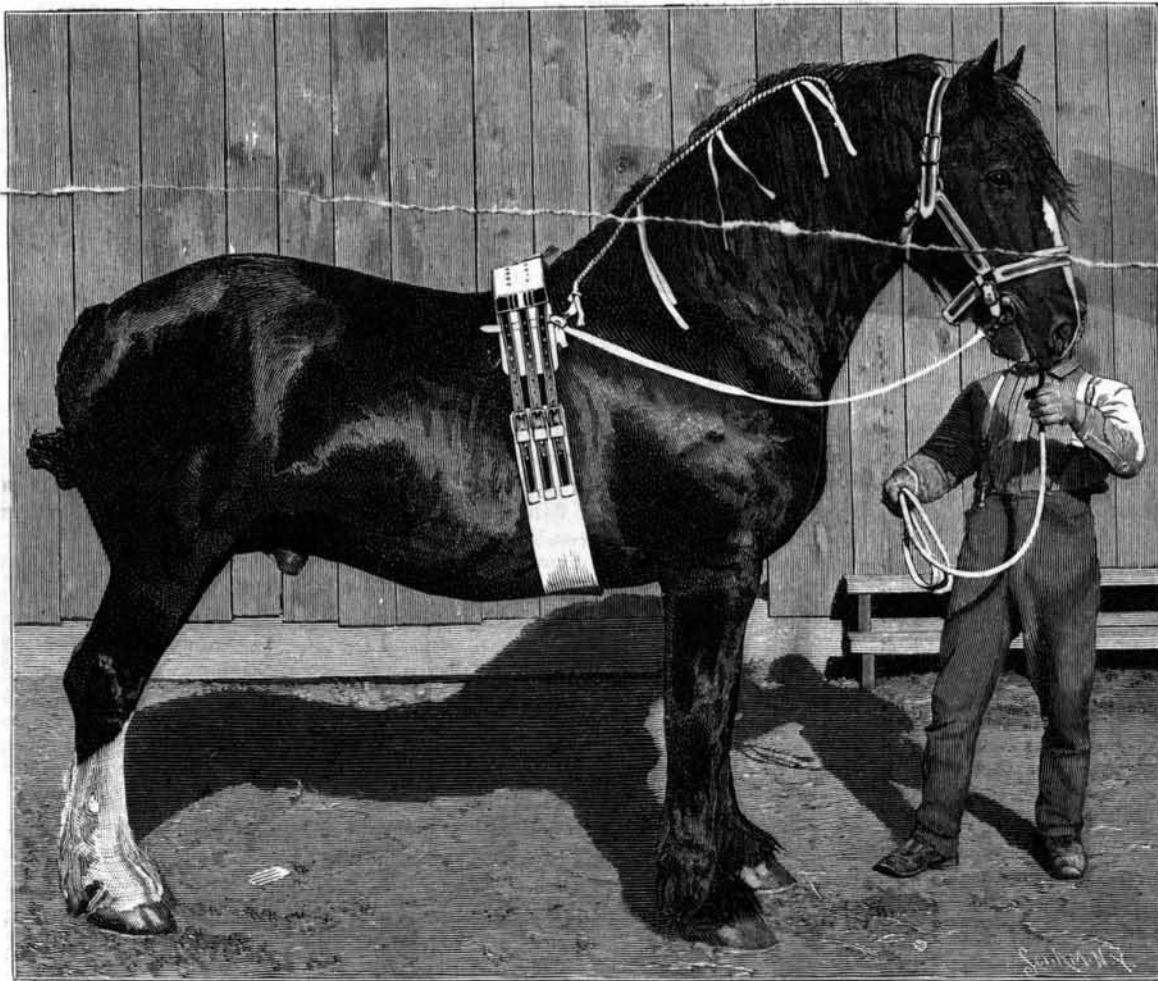
Schreib states (*Chem. Zeit. and J. S. C. I.*) that the washing powders or soap powders, which have latterly become important articles of commerce, always contain besides powdered dried soap a large percentage of sodium carbonate, generally in the form of dried soda crystals. These powders may be prepared in either of the following ways:

1. Anhydrous sodium carbonate or soda ash is added to a "clear boiled" soap paste, and after thoroughly mixing, the somewhat stiff material is drawn off into cooling frames. The cold and hard soap thus obtained is then finely ground.

2. Soda crystals and soap are melted together and then treated in the above manner. This method of manufacture, however, is only advantageous where soap scraps are to be had.

A suitable apparatus consists of a wrought iron vessel with a strong agitator contained in an interior cast-iron vessel, which can be cooled by water circulated in the outer vessel. The liquid soap is cooled while the soda ash is slowly added and completely dissolved. During the grinding process care has to be taken not to overheat and thus soften the product.

The composition of soap powders varies considerably. Only a small proportion of resin soap can be used, as such soap is sticky and cannot be powdered. Olein soap may be used with advantage, and the olein may be saponified with sodium carbonate instead of the more expensive caustic lyes.



THE WORLD'S COLUMBIAN EXPOSITION—THE PRIZE CLYDESDALE STALLION, PRINCE ATTRACTIVE.

As a small quantity of free chlorine is not objectionable in soap powder, dark colored materials, such as bone fat, fish oils, etc., may be used for making soap, with an addition of a small quantity of bleaching powder. To some soap powders 2 to 5 per cent of sodium silicate is added. A good washing powder should contain: 30-35 per cent of fatty acid; 30-35 per cent of sodium carbonate; and 30-40 per cent of water. The inferior powders containing only 5-10 per cent of fatty acid should not be used for the laundry; they are only serviceable for scrubbing purposes.

There is a soap powder in the market containing a soap prepared by treating linseed with caustic soda directly. This soap contains certain impurities derived from the seed, which lather freely, and thus when the powder is used, give the impression of more genuine soap being contained in the powder than is actually the case.

## Improvement in Half-tone Blocks.

Dr. E. Albert has patented a new method of preparing half-tone blocks, which is stated to be a great improvement. The number of lines on a grain screen varies from 5 to 8 per mm.; more than 8 gives blocks difficult to print, less than 5 gives flat results. The proportion of the intervals between the lines to the breadth of the black lines is 1:1, and this is not the best for the high lights, and for the shadows 3:1 is better. Albert has arranged a micrometer screw on the objective, which is sensitive to 1-30 mm. The action of this is to broaden or narrow the lines, and thus gain the effect required.—*Talbot's Neuheit.*

## Diamonds from Coal Gas.

M. Gustave Rousseau recently communicated to the *Comptes Rendus* a remarkable statement referring to his experiments upon the cyclical condensation of carbon. It appears that, in the course of some investigations into the nature of certain manganites, cobaltites, and ferrites, M. Rousseau obtained some metamorphoses which led him to the discovery of a new phenomenon in chemical physics—that is to say, the so-called cyclical transformations to which can be subjected a particular radical under different temperatures. Thus certain compounds of manganese and soda can be formed at a given temperature, changed into something different by raising the temperature, and finally reconverted into the original compound at a still higher heat. From these analogies, says the *Journal of Gas Lighting*, M. Rousseau thought that, if hydrocarbons were heated through the range of temperature between bright red and 3,000° C., there might be produced in turn the various isomeric states of carbon, each of which presents its own degree of stability according to its place in the thermometric scale. It is known that the hydrocarbons form amorphous carbon by decomposition at red heat; while all varieties of carbon are transformed into graphite in the voltaic arc. M. Rousseau claims to have established the novel fact that carbon presents the cycle graphite-diamond-graphite in an interval of temperature comprised between 2,000° and 3,000° C. He worked with acetylene to solve this problem, because this carbon compound has a certain stability at high temperatures, and is endowed with a marvelous plasticity, besides polymerizing easily into a series of carburets more and more condensed. Acetylene was heated in an electric arc furnace, producing both black diamonds and graphite. The experiment was of a difficult character, and much acetylene escaped treatment. M. Rousseau says that the hydrocarbons of coal gas can be made to furnish acetylene, under the action of heat; and in one experiment of 40 minutes' duration, he was able to obtain 20 milligrammes of black diamond in this way: He caused a current of illuminating gas, saturated with the vapor of benzene, to pass into a hollow block of quicklime, where the voltaic arc was maintained. Unfortunately, owing to the leakiness of the furnace, the gas burnt; and after two hours' heating, he could only find a small quantity of graphite mixed with some grains of carbonado. M. Rousseau proposes to continue these experiments, with a furnace hermetically sealed, and constructed of refractory material not containing carbonates. He also intends to substitute for coal gas the highly condensed carburets derived from coal tar or petroleum residuum. Whatever may be the further outcome of these experiments, it is of interest to record that diamonds have actually been made directly from coal gas by simple heating under ordinary atmospheric pressure.

## Long Distance Telephony.

The American Telephone and Telegraph Company recently gave an exhibition of their long-distance telephone lines to a small party of guests who assembled at the Telephone building in Cortlandt Street.

Among those assembled to witness the exhibition were Dr. Von Helmholtz, Prof. Alexander Graham Bell, Dr. Hermann Knapp, Miss Knapp, Prof. Seth Low, Prof. Ogden N. Root, Prof. Geo. E. Deschweinitz, and Mr. Edward J. Hall, Mr. Melville Egleson, and Mr. F. A. Pickernell, of the telephone company, besides some representatives of the press.

A number of receivers were arranged so as to give each of the party a connection to the line. Connection was made with Boston, Chicago, and Washington in turn, and conversations were held with the officers at those points. A cornet was also played which was heard through 500 miles of wire as distinctly as though it were in an adjoining room. The conversation with the headquarters of the telephone company at the World's Fair was held with perfect ease, speaking in an ordinary tone of voice.