

of protein, and is used almost exclusively for work and farm horses in distinctively alfalfa sections; but, when fed very liberally it supplies more nitrogenous matter than is usable constructively in the system, and consequently entails a heavy burden on the excretory organs. For this reason it is best to use this hay to form only a portion of the ration. Horses will develop a hay eating habit which is likely to affect their wind when they are idle and unlimited quantities are supplied, so that the feeder must not allow the animal to regulate the amount of hay eaten.

For the developing horse, bone-and-muscle-forming materials must be supplied. The clovers serve well for this purpose, but grains must be used to supplement them. Fat-forming foods are to be avoided, since for growth the greatest activity of the cells is demanded, while the presence of fat, beyond a very moderate degree, in or between the cells stultifies cell activity. On the other hand, the proteids stimulate cell activity, and furnish the very material for cell construction in the muscular parts of the body, while they, with the mineral compounds, enter into the structure of the bone. Remembering this, the deduction to feed proteid foods, such as oats, bran and oil meal, and to avoid much corn and barley, is simple.

There is no equal for oats as a single food for the developing animal. Bran is rich in mineral and proteid matter, but is laxative, and should not be continuously fed in large quantities; oil meal will substitute for it very satisfactorily, and is not so laxative, while containing about two and a half times as much protein, is needed in correspondingly lesser quantity.

The ration used would be improved much by doubling the quantity of oats and reducing the bran to about 1½ pounds per day, and adding about one pound of oil meal per day, or the bran might be fed once or twice a week only, while about 1½ pounds of oil meal might be fed per day. A supply of alfalfa hay or timothy and alfalfa hay should prove good; it is doubtful if the green corn has had any beneficial value. Feed regularly. To this add regular moderate work every day. If regular exercise cannot be provided by daily work, a paddock of good length should be provided, in which the stallion should be placed on every otherwise idle day. Exercise is an absolute essential to health, and must be as carefully planned as the food supply. By increasing the quantity of feed, and substituting, a little later, corn for one-third the oat ration, your stallion should take on his best form.

## LIVE STOCK.

### Recommendations of the Commission Regarding Tuberculosis Eradication.

In previous issues, extracts and digests of parts of the reports of the Commission appointed by the American Veterinary Medical Association to study the problem of eradicating tuberculosis from the herds and flocks of United States and Canada, have been given. Following upon these, we here present the system of procedure recommended by those commissioners:



King's Cupbearer (Imp.).

Clydesdale stallion, brown; three years old. First in class and champion, Western Fair, Los Angeles, 1910. Exhibited by Captain J. F. Ross in London. Sired Boreland Pride, by Boreland's Pride.

The control of bovine tuberculosis involves a definite procedure under two distinct and different conditions, namely: (1) Where a herd of cattle is free from tuberculosis, and as to be kept so; and (2) where one or more animals in the herd are infected, and the purpose is to eradicate the disease and establish a sound herd.

**Procedure Under Condition 1.**—The prevention of tubercular infection in cattle free from tuberculosis consists simply in keeping tuberculous cattle or other animals away from the sound ones; in keeping tuberculous animals out of pastures, sheds or stables where the sound ones may be kept. Healthy cattle should not be exposed to possible infection at public sales or exhibitions. Raw milk or milk by-products from tuberculous cows should not be fed to calves, pigs or other animals. Cars that have not been thoroughly disinfected should not be used for the transportation of sound cattle. Cattle that are purchased to go into sound herds should be bought from healthy or sound herds only.

**Procedure Under Condition 2.**—The eradication of tuberculosis from infected herds requires for conservation of the herd different procedures, according to the extent of the infection. For a guide to the control of the disease, tuberculous herds may be divided into three groups, namely:

- I.—Where 50 per cent. or more of the animals are infected.
- II.—Where a small percentage (15 per cent., or less) of the animals are affected.
- III.—Where a larger number (15 to 50 per cent.) of the animals are diseased.

In eliminating tuberculosis from infected herds, the following procedure is recommended:

#### GROUP I.

Herds where a tuberculin test shows 50 per cent. or more of the animals to be infected should be treated as entirely tuberculous. The procedure here is as follows:

1. Eliminate by slaughter all animals giving evidence of the disease on physical examination.
2. Build up an entirely new herd from the offspring. The calves should be separated from their dams immediately after birth, and raised on pasteurized milk, or on that of healthy nurse cows. This new herd must be kept separate from any reacting animals.
3. The young animals should be tested with tuberculin at about six months old, and when reactors are found at the first or any subsequent test, the others should be re-tested not more than six months later. When there are no more reactors at the six-months test, annual tests should thereafter be made. All reacting animals should at once be separated from the new herd, and the stables which they have occupied thoroughly disinfected.
4. The milk of the reacting animals may be pasteurized and used.
5. Any reacting animal which develops clinical symptoms of tuberculosis should be promptly slaughtered.
6. An animal that has once reacted to tuberculin should under no circumstances be placed in the sound herd.
7. As soon as the sound herd has become well established, infected animals should be slaughtered, under proper inspection.

#### GROUP II.

1. The reacting animals should be separated from the non-reacting ones, and kept constantly apart from them at pasture, in yard and in stable.

(a) Pasture.—The reactors should be kept in a separate pasture. This pasture should be some distance from the other, or so fenced that it will be impossible for the infected and non-infected animals to get their heads together.

(b) Water.—When possible to provide otherwise, reacting cattle should not be watered at running streams which afterwards flow directly through fields occupied by sound cattle. The water from the drinking trough used by infected animals should not be allowed to flow into stables, fields or yards occupied by sound animals.

(c) Stable.—Reacting cattle should be kept in barns or stable entirely separate from the ones occupied by the sound animals.

2. Calves of the reacting cows should be removed from their dams immediately after birth. Milk fed these calves must be from healthy cows, otherwise it must be properly pasteurized. These calves should not come in contact in any way with the reacting animals.

3. The non-reacting animals should be tested with tuberculin in six months, and, when reactors are found at the first six months, or any subsequent test, the others should be re-tested not more than six months later. When there are no more reactors at the six-months test, annual tests should thereafter be made. All reacting animals should at once be separated from the new herd, and the stables which they have occupied thoroughly disinfected.

4. The milk of the reacting animals may be pasteurized and used.

5. Any reacting animal which develops clinical symptoms of tuberculosis should be promptly slaughtered.

6. An animal that has once reacted to tuberculin should under no circumstances be placed in the sound herd.

7. As soon as the sound herd has become well established, infected animals should be slaughtered, under proper inspection.

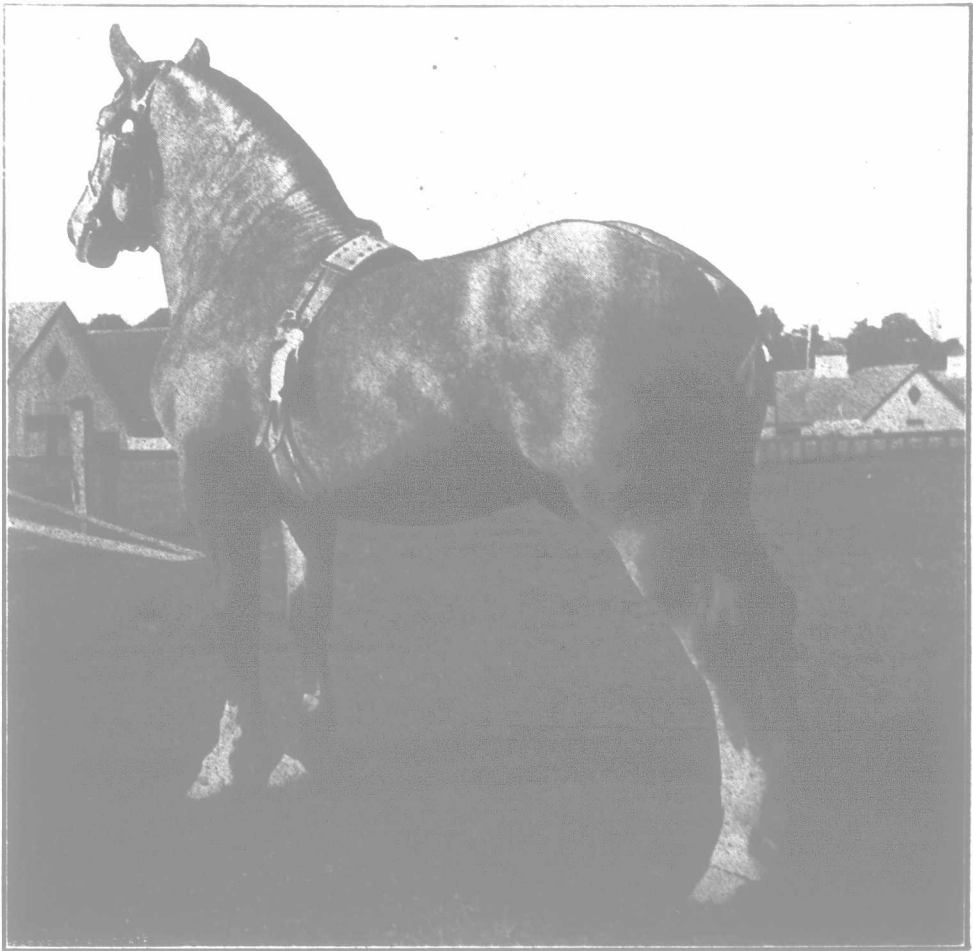
#### GROUP III.

Herds that come within this group should be dealt with either as in Group II., where the herd is separated, or as in Group I., where all of the animals are considered as suspicious, and an entirely new herd developed from the offspring.

#### GENERAL PRECAUTIONS.

In all cases, animals that show clinical evidence of the disease should be promptly eliminated. They should be destroyed if the disease is evidently far advanced; if not, they may be slaughtered for food under proper inspection.

All milk from tuberculous cows that is used



Hudson.

Three-year-old Percheron stallion. First at Ottawa, first in aged class and champion at Toronto, 1910. Owner John Hawthorne, Simcoe, Ont.

4. When the newly-developed sound herd has become of sufficient size, the tuberculous herd can be eliminated by slaughter under inspection for beef.