

obligation to fence any portion near which, in the opinion of the board, the lands are not sufficiently settled or inclosed to warrant the obligation, with a provision that the order of the board may be limited as to time, and, in any event, should be subject to rescission or alteration at any time.

The board has nothing to do with the question of liability for injury to animals by railway locomotives or trains. The statute expressly provides for the recovery by action in a court of competent jurisdiction.

As will be seen, the sub-section added in 1903, enables the board to order the erection and maintenance of fences, gates and cattle-guards, even where the lands on either side of the railway are not improved or settled and inclosed. In any case in which parties think that this protection should be afforded, they should make application to the board.

Hoping that this information will be useful to you,

I remain, yours respectfully,

A. C. KILLAM,
Chief Commissioner.

MEMORANDUM AS TO LEGISLATION RESPECTING INJURIES TO CATTLE ON RAILWAY TRACKS.

Section 199 of the Railway Act, 1903, provides for the erection and maintenance upon railways of fences, gates and cattle-guards of certain descriptions. In this respect, the section is practically the same as the previously existing provisions. The following sub-section, however, was added in 1903:

"3. Whenever the railway passes through any locality in which the lands on either side of the railway are not improved or settled, and enclosed, the company shall not be required to erect and maintain such fences, gates and cattle-guards unless the board otherwise orders or directs."

Section 237 of the Act of 1903, is as follows: "No horses, sheep, swine or other cattle shall be permitted to be at large upon any highway, within half a mile of the intersection of such highway with any railway at rail-level, unless such cattle are in charge of some competent person or persons, to prevent their loitering or stopping on such highway at such intersection, or straying upon the railway."

"2. All cattle found at large contrary to the provisions of this section may, by any person who finds the same at large, be impounded in the pound nearest to the place where the same are so found, and the pound-keeper with whom the same are impounded shall detain the same in the like manner, and subject to like regulations as to the care and disposal thereof, as in the case of cattle impounded for trespass on private property."

"3. If the cattle of any person, which are at large contrary to the provisions of this section, are killed or injured by any train, at such point of intersection, he shall not have any right of action against any company in respect of the same being so killed or injured."

"4. When any cattle or other animals at large upon the highway or otherwise, get upon the property of the company and are killed or injured by a train, the owner of any such animal so killed or injured shall be entitled to recover the amount of such loss or injury against the company in any action in any court of competent jurisdiction, unless the company, in the opinion of the court or jury trying the case, establishes that such animal got at large through the negligence or wilful act or omission of the owner or his agent, or of the custodian of such animal or his agent; but the fact that such animal was not in charge of some competent person or persons shall not for the purposes of this subsection, deprive the owner of his right to recover."

The first three sub-sections of this section are practically the same as previous legislation. The word "competent" has been inserted between "some" and "person" in the first sub-section, and the words "or straying upon the railway" added to the clause.

The following sub-section formerly formed a part of the section dealing with fences and cattle-guards:

"Until such fences and cattle-guards are duly made and completed, and if, after they are so made and completed, they are not duly maintained, the company shall be liable for all damages done by its trains and engines to cattle, horses and other animals not wrongfully on the railway, and having got there in consequence of the omission to make, complete and maintain such fences and cattle-guards, as aforesaid."

It has now been omitted, and sub-section 4, above cited, added to section 237.

Tuberculosis in Animals and Man.

The relation of tuberculosis to human beings through domesticated animals as media has for years agitated stockmen, physicians both human and veterinary, and investigators. Experiments have been quietly conducted for years, especially in scientific circles in continental Europe. The

Review of Reviews refers to the following excerpts as the latest results of those scientific investigations at Budapest last year.

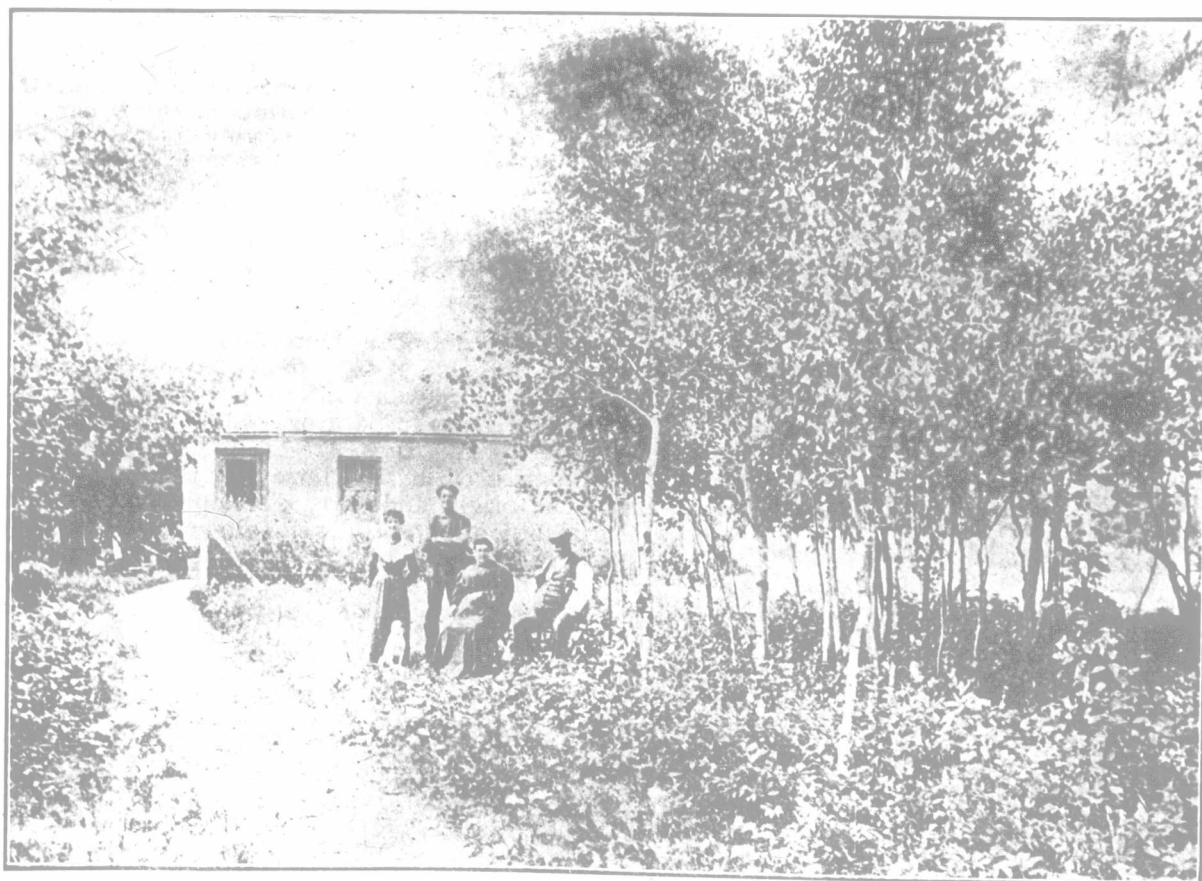
The International Tuberculosis Congress unanimously passed resolutions to the effect that it was essential, not only to lessen the transmission of tuberculosis from man to man, but to clear up the prophylaxis of tuberculosis in cattle, in order that hygienic and administrative measures might be taken more intelligently to prevent the transmission from cattle to men; that in view of the experimental proof of the presence of virulent tubercle bacilli in milk, a sanitary inspection of cow-stalls, should be completed as soon as possible, and that in public institutions of every kind, like hospitals and schools, only pasteurized, boiled or sterilized milk should be used, except in those cases where the cows had been proved, by the tuberculin test, to be free from tuberculosis. The International Congress of Veterinary Physicians passed resolutions expressing their belief in the importance of researches to determine the relation of tuberculosis in birds to tuberculosis in cattle, and also of the importance of taking protective measures against the dangers of infection of men through cattle.

The British Medical Journal has an article by Dr. Kossel which summarizes matters as follows:

(1) By bacteriological investigation of tuberculous lesions in human beings, cattle, and swine, two types of tubercle bacilli can be detected, which may provisionally be called *typus humanus* and *typus bovinus*; (2) the widespread tuberculosis of cattle is to be traced exclusively to infection with tubercle bacilli of the *typus bovinus*; (3) swine are susceptible to a high degree to the tubercle bacilli of the *typus bovinus*, in a lesser degree to those of the *typus humanus*; (4) the tuberculosis of human beings chiefly arises from infection with tubercle bacilli of the *typus humanus*, which is transmitted from man to man; (5) tuberculous lesions in human beings can be produced by tubercle bacilli of the *typus bovinus*; (6) tubercle bacilli of the *typus bovinus* can be transmitted to human beings by food derived from tuberculous animals, especially by milk of cows affected with tuberculosis of the udder; (7) the part played by infection from bovine sources in spreading tuberculosis in man is small in comparison to the danger threatening from a consumptive human being.

Guernseys Produce Butter-Fat.

The annual meeting of the American Guernsey Cattle Club will be held May 16th at the Fifth Avenue Hotel, New York. During the last twelve months a Guernsey cow gave 14,920 pounds of milk containing 857 pounds butter-fat.



EVENING ON MR. R. C. CUTBERT'S FARM, ROSENDALE, MAN.

FARM

Humus: Its Effect Upon Soils.

By Prof. R. Harcourt, Chemist, O. A. C., Guelph, Ont.

The term humus is applied to a large class of ill-defined bodies derived from the decay of former animal and plant life. When this organic matter undergoes complete decomposition, nothing is left but a few gases and a small amount of mineral matter, but when it is in its intermediate stages of decomposition and mixed with the soil, it is known as humus. It is essentially the product of the millions of living organisms in the soil, and the rapidity with which the raw organic matter is broken down to humus and the humus on into its ultimate constituents, depends upon the number of these organisms, and upon the presence of favorable conditions for their action. If the soil is well aerated, warm, moist, and contains plenty of basic substances to combine with the acid formed from the humus, the decomposition will be rapid. Thus it is that more humus is found in meadows and pastures than in continually cultivated soils, more in heavy clays than in light sandy soils, and the accumulation of humus reaches its maximum where for any reason the soil becomes so waterlogged that the supply of air is cut off, as in swamps.

The value of an abundant supply of humus on a cultivated soil can hardly be overestimated. It influences the temperature, texture, absorptive capacity, and colors of soils, and directly or indirectly controls, to a large extent their supply of water, nitrogen, potash and phosphoric acid. In fact it, more than any other factor, fixes the productive capacity of an arable soil, and in many ways may be looked upon as a panacea for all ailments of the soil.

Humus tends to warm soils, because it makes them darker, and dark-colored soils become hotter in the sun's rays than light-colored ones; the extreme difference observed in the case of natural soils is as much as 8 degrees. No difference will be observed on cloudy days, and at night all soils will cool to the same point. The chemical changes that take place in the decomposition of the organic matter also have a marked influence in raising the temperature.

Humus has a wonderful influence on the textures of clays, in that it diminishes their tenacity, renders them more pervious, and more easy of tillage. On sands it has the opposite effect, for it tends to bind the particles of soil together, and thus make them firmer. The influence of humus on the texture of soils of all kinds is so well known that it is not necessary to dwell on this point.

Humus absorbs a large amount of water. This it does because its particles are irregular in shape and porous, thus presenting a large amount of surface on which the water of a well-drained soil is held. A soil rich in humus also holds its moisture more firmly in time of drouth than a soil poor in humus. In fact this water-holding power is one of the most important differences between soils rich in humus and those poor in humus. A soil which by long cultivation has lost half its total humus, will show a loss of 10 to 25 per cent. of its water-holding power. Humus is also an important factor, especially in