

scure subject, is certainly most desirable, And of this class are the experiments in this veterinary school in relation to the transmissibility of tuberculosis.'

Tuberculosis has long been known to be a no less universal and fatal disease among domestic animals, especially those of the bovine species, than among mankind, and for the most part the conditions of its prevalence are the same in both. Nobody doubts its hereditary character; and in domestic animals as in the human race, its subjects are characterized by their attenuated figures, long limbs, narrow chests, lymphatic or neuro-lymphatic temperaments, and they are alike the product of cold, damp places, dark, filthy, unventilated dwellings, insufficient food in quantity or quality, and, in adult females especially, prolonged and excessive lactation, or the progeny of those who have been subject to the conditions therein described.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

ON CERTAIN LAWS OF POPULATION. BY DR. FARR. FROM *San. Rec.*

DR. FARR said that the unity of the human family was an accepted scientific truth, and all races and nations were alike endowed in structure, intellect, passions and faculties; and according to the most recent calculations—those of Petermann—the population of the whole world was now 1,424 millions. In the last century some thinkers called in question the account of the origin of mankind as stated in the Book of Genesis, and held that it was impossible that in the period so many could have descended from two ancestors—Adam and Eve. Euler undertook to meet the objection. He showed that by a process of doubling the population from one pair it might amount to any conceivable number. It had been laid down that a population can double itself in twenty-five years. It was true that if the population increased to its present pitch in 5,880 years, it might have doubled itself every 200 years. The inhabitants of the earth would in 200 years approach 3,000 millions; and at the same rate the difference between the birth-rates and the death-rates was nearly constant, although the rates varied widely. To every unit of life in England there was annually $\cdot 03492$ added by birth, and $\cdot 02231$ deducted by death. The rates of increase was $1\cdot 01261$, which implied that at that rate the population would be doubled in 55·3 years. Taking 1,000 as the basis, the birth-rate was 34·92, and the death-rate 12·31, in England and Wales. Carefully prepared statistics showed that at these rates of increase the periods of doubling in eight of the states of Europe would be as follow: England and Wales 53·3; Sweden, 61·1; Prussia, 64·3; Netherlands, 77·1; Austria, 86·0; Spain, 93·9; Italy, 106·5; and France, 361·3 years. And what did we find actually going on in English districts? In fifty-six populous districts the death-rate was $\cdot 0251$, and the birth-rate was $\cdot 381$; and consequently the rate of increase was $1\cdot 0130$. In fifty-four healthier districts the death-rate was $\cdot 0167$; that was $\cdot 0084$ lower than in less healthy districts. The natural increase of popula-