

SCIENCE.

FRIDAY, JUNE 17, 1887.

COMMENT AND CRITICISM.

THE IMMIGRATION INTO THIS COUNTRY during a year is so enormous, that we are apt to overlook the fact that similar movements of population may be taking place elsewhere. To be sure, immigration elsewhere is very small as compared with that here, but it has attracted sufficient notice in England of late to call parliament's attention to it. Investigation proves, however, that any alarm which may have been caused is unnecessary. Comparison of the census of 1881 with that of 1871 shows that the immigration of foreigners into the United Kingdom during that decade cannot have been very large. According to tables which have been prepared, the increase of foreigners resident in the United Kingdom between 1871 and 1881 was from 113,979 to 135,640, or 21,661 in all, equal to just over 2,000 per annum. Having regard to the figures of emigration and immigration dealt with in the board of trade tables, this is of course a small movement. The whole foreign population resident in the United Kingdom in 1881 was in fact less than the net emigration of British and Irish persons from the United Kingdom in a single year. The German empire contributed 35,141 in 1871, and 40,371 in 1881; France, 19,618 in 1871 against 16,194 in 1881; Russia, 9,974 against 15,271; and the United States, 9,467 against 20,014. Thus Germans constituted in 1881 about one-third of the foreign population resident in the United Kingdom; but the increase in the period was no greater than the increase among Russians, and less than the increase among natives of the United States, whose numbers doubled in the ten years. It seems probable that the increase of foreigners since 1881 has been somewhat more rapid than during the decade preceding, but it has not yet become so great as to be at all alarming.

NO PAPER THAT WAS PRESENTED at the recent successful session of the Historical and Economic associations at Boston was more important than that by Col. Carroll D. Wright on 'The study of statistics in colleges.' What he said about the

necessity for the scientific study of statistics and their application should be specially emphasized. Colonel Wright, himself a most successful statistician, avowed that during the fourteen years that he had devoted to practical statistics there had not been a single day when he had not felt the need of statistical training, not only for himself, but for those associated with him. He continued, "The problems which the statistician must solve, if they are solved at all, are pressing upon the world. Many chapters of political economy must be rewritten; for the study of political economy is now brought under the historical and comparative method, and statistical science constitutes the greatest auxiliary of such a method. There is so much that is false that creeps into the popular mind, which can only be rectified through the most trustworthy statistical knowledge, that the removal of apprehension alone by it creates a necessity sufficient to command the attention of college authorities. The great questions of the day, the labor-question, temperance, tariff reform, all great topics, demand the auxiliary aid of scientific statistics, and a thorough training is essential for their proper use." Two instances were cited by Colonel Wright to show the way in which crude theories are sometimes upset by carefully gathered statistics: "It has been asserted that there is an alarming amount of illiteracy in Massachusetts. Statistical inquiry shows that by far the greater number of these illiterates are of foreign birth; so that the fault is not with the public-school system, but the evil is due to a temporary cause, namely, immigration. Again: it has been freely asserted that in the United States, women of native birth do not have as many children as women of foreign birth, and that thereby the real American population is steadily losing ground. The census of Massachusetts will show, that although American women do have a less number of children, on the average, yet a larger number survive, so that the alarm is needless. Common observation would never have shown these things, or would not have shown them accurately."

We fancy that the average reader of census-tables has little conception of the many difficul-

ties, purely statistical, which must be surmounted before the tables are completed. Colonel Wright drew from his own experience excellent illustrations of these. "The question may be asked," he said, "what elements of capital are involved in the census question of 'capital invested'? Is it simply the cash capital invested by the concern under consideration, or is it all the money which is used to produce a given quantity of goods? If the members of a firm contribute the sum of \$10,000, and they have a line of discounts of \$100,000, the avails of which are used in producing \$200,000 worth of completed goods, what is the capital invested? What is the capital invested which should be returned in the census? If a man has \$5,000 invested in his business as a manufacturer, and he buys his goods on ninety days, or four months, and sells for cash, or thirty days, what is his capital invested? This question is one among many of the practical problems that arise in a statistical bureau, but which has not yet been treated scientifically. What has been the result of the reported statistics relating to capital invested? Simply that calculations, deductions, and arguments based on such statistics have been and are vicious, and will be until all the elements involved in the term are scientifically classified. Another illustration in point arises in connection with the presentation of divorce statistics, especially when it is desired to compare such statistics with marriages, or to make comparisons to show the progress, or the movement of divorces. Shall the number of divorces be compared with the number of marriages celebrated in the year in which the divorces are granted, or with the population, or with the number of married couples living at the time? I need not multiply illustrations. The lies of statistics are unscientific lies." In speaking of the U. S. census, Colonel Wright said, that although we take a census in the United States every ten years, yet, as a rule, the men that are brought into the work know nothing of statistics. They should be trained in the very elementary work of census-taking and of statistical science. It would be much more economical for the government to keep its experienced statisticians busily employed in the interim of census-taking, even if they do no more than study forms, methods, and analyses connected with the presentation of the facts of the preceding census. Money would be saved, results would be more thoroughly appreciated, and problems would be solved. The next congress

must make the preliminary arrangements for the eleventh census, and it would be a national gain were Colonel Wright himself put in charge of the work.

PHYSICAL CULTURE FOR CRIMINALS.

IN *Science* for May 13 appeared a favorable notice of an experimental class in physical culture, conducted during the summer of 1886 at the New York state reformatory, and described at length in the last annual report of the board of managers. The class consisted of twelve men, dull and stupid, but not idiots or imbeciles, who seemed incapable of any prolonged mental effort, and who had failed to make any appreciable progress in school-work. The object in view in the formation of the class was to determine if physical culture, with all that the term implies, would not result in at least a partial awakening of dormant mental power in twelve men mentally and morally obtuse.

With physical culture and improvement, there came a mental awakening; and at the end of five months, when the class was discontinued, the men were able to perform operations in simple arithmetic, as division and cancellation, — a thing they had never done before, as the average criminal is remarkably dull in all that pertains to mathematics.

It is now more than six months since the class was given up, and the men assigned to various shops and employments and the primary classes of the reformatory, — a period sufficiently long to determine, in part at least, the value of physical culture as an educational factor.

One man, a southern negro, died during the winter from pulmonary disease, leaving eleven men under observation at the present time. At the time the class was formed nine of these eleven men were in the third grade, and two in the second or intermediate. Five months later, or when the class was discontinued, these nine men had attained the second grade, and the two there originally had maintained their standing. At the present time of writing, six have reached the first grade, leaving five in the second; and of these latter, two have every prospect of reaching the first by the beginning of May.

The average marking of these eleven men for the six months preceding their course of training, and while engaged in shop-work, was as follows: demeanor, — $2\frac{1}{2}$; labor, $2\frac{9}{16}$; school, $1\frac{3}{8}$, or 46 per cent; 3 representing the highest attainable mark in each, or an aggregate of 9 for the time named. During the continuance of the class, and in response to the efforts made to arouse these men