

of mountains above the snow-line; then to take a piece of ice, and, by means of a wire with weights attached, to show how the ice may be slowly cut, and how it will refreeze, and thus to illustrate the passage of the glacier along its bed; to show by illustrations, preferably photographs, the nature of the moraines, the final melting of the glacier, and the formation of the resulting river. In this way the pupil's knowledge of glaciers is real and permanent, and he is prepared to read of them, and of theories about them, with appreciative interest. And in the process some elementary facts of physics and mechanics, and the simpler laws of heat, have been learned.

Again: if a child draws a map himself, and locates, say, a hundred places on it, he will probably remember them all; while not ten per cent of them, if learned from an outline-map, would be retained. The influence of geography upon history is one of the most potent of facts to the trained scholar, and, although it admits of very elementary demonstration, it is almost invariably disregarded in teaching geography. Surely it could easily be taught that there is a connection between tropical climate and despotism, between temperate climate and freedom; that vast pastures have implied a feudal society of chiefs and dependents; that aristocracy is the natural constitution of a pastoral state; that the sea and the mountains have in many instances directed the current of civilization and of political development. Books like Huxley's 'Physiography,' Geikie's 'Elementary lessons in physical geography,' and Grove's 'Class-book of school geography,' should form part of the instruction of every pupil.

Finally, the connection between geography and various phases of political and commercial life should be pointed out. It should be shown why it is that various portions of a country have various pursuits, why manufacturing, mining, agriculture, the carrying trade, respectively, are carried on in certain sections and from certain centres. From this the transition is simple and evident to the lines of trade and commerce, — whence we receive our various imported goods and why, and what we export in exchange. Then, as a means of teaching concerning peoples and products, every school should contain a museum, that the pupils might see and handle the objects of which they have read and studied. In this way, and only in this way, can the study of geography be placed upon a scientific basis, and made the vehicle of practical knowledge instead of a task in committing dry details to memory. If our teachers are to do their part in this work, they must be shown how to do it, and trained to

do it. For this we must look, we hope not in vain, to our normal schools, training-classes, colleges, and universities.

THE OCCUPATIONS OF THE BRITISH PEOPLE.

THE London *Times* of May 21 has an interesting report of a paper read by Mr. Charles Booth before the Statistical society, on the occupations of the people of the United Kingdom, and on the changes that have occurred in the distribution of labor during the present century.

The *Times* says, "The inquiry is a difficult one, owing to the imperfections of the earlier returns, and the changes which have taken place in the mode of recording social phenomena. It was not until 1831 that any attempt at detailed classification of occupations was made, and even then it was of a limited and unsatisfactory kind. The next census showed some improvement; and at length, in 1851, the system was originated which still prevails, and under which the entire population is brought under enumeration and grouped into seventeen classes, with numerous sub-classes. But the system has suffered considerable modification from decade to decade since that date, and, in particular, large numbers have been transferred from one class to another; so that any thing like a trustworthy comparison of the details of successive decades becomes a matter of very great labor and difficulty. Mr. Booth has constructed tables in which these defects in the records are, as far as possible, remedied, and the figures for different periods reduced to common denominators. Some of the results will probably be found surprising by those who have not entered upon careful examination of their natural impressions."

Mr. Booth stated, that, as regarded England and Wales, between 1851 and 1881 the proportion of industrially employed women over fifteen, compared to the rest of the female population, had decreased continuously, but that the proportion of those otherwise employed — in domestic service, teaching, etc. — had increased in an equal degree year by year; so that the total employed one way or another remained practically constant. Having in a tabular form divided the whole population, taking the occupied and unoccupied together, he stated that all males over twenty were counted, for this purpose, with the occupied or self-supporting class, and the whole employed class might be divided as follows in the periods 1851, 1861, 1871, and 1881 respectively: all forms of industry (productive or distributive), 78.4, 77.2, 75.5, 74.2 per cent; public and professional service, 4.6, 5.3, 5.5, 5.6 per cent; domestic service, 13.3, 14.6, 15.8,

15.7 per cent ; property-owning (so returned), 2.5, 2, 2, 2.2 per cent ; and indefinite, 1.2, 0.9, 1.2, 2.3 per cent. The increase of 1 per cent in the indefinite class for 1881 was due to the transfer to this class of retired persons, who, in previous censuses, were returned under their former occupations ; but, at best, those tabulated under this head were a meaningless remainder, the result of accident or defects of enumeration. Similarly the class called property-owning was entirely delusive. It contained a few land-owners, house-owners, and others who might as reasonably be included with other employers of labor in the sections of industry, and it also included a good many independent women.

It is certain that during the thirty years in question the classes whose maintenance depended on the mere possession of property must have been largely augmented. It would further be seen that public and professional service, with domestic service, had gained what productive and distributive industry had lost, and that this movement had been progressive. With regard to domestic service, it was noteworthy that the increase was mainly in the women and girls, the indoor men-servants having decreased from 74,000 in 1851, to 56,000 in 1881, while the population had risen from 18,000,000 to 26,000,000, — a fact which would seem to indicate a greater diffusion of wealth, and also, perhaps, less ostentation of expenditure among the very rich.

In public service and the professions the percentage of persons occupied in administration, law, and medicine, had slightly decreased ; while police, amusement, and education had increased, education especially showing, as might be expected, a large addition in the last decade.

Coming to a detailed review of the industrial classes, he stated that the production of raw material employed a decreasing percentage. The English depend more on what they import, and less on what they find at home. The reduction, however, fell entirely on agriculture, as the percentage employed in fishing and mining had increased. For the three decades since 1851, those employed on the land had decreased at the rate of 3½, 11½, and 11 per cent respectively ; being 26 per cent for the thirty years, or, stated in numbers, 60,000, 196,000, and 163,000, which added up to 419,000, an enormous total. Against these losses, which were mostly in ordinary agricultural labor, must be set the equivalent of the increased use of machinery, before we could say that less energy was devoted to the cultivation of the soil now than thirty years ago. A new class connected with the application of science to agriculture had sprung into being, and its increasing

numbers pointed to a change of system, involving improvements, rather than neglect of any kind, as a cause of the decrease in the agricultural population. It seemed to be assumed by many that the reduction in the proportion of those who lived by agriculture, as compared to those who lived by other means, was not only an absolute evil, but necessarily the result of economic error of some kind, and England's land system was responsible. Such views he regarded as mistaken and misleading. His business, however, was to state the facts as given in the census returns ; and these showed us, that, in the last thirty years, England had changed from a population about half agricultural and half manufacturing, to one in which manufacture was double of agriculture, and we had no reason to suppose that the process of change in this direction was yet ended. This change had been accompanied by an enormous increase in the total population, so that altogether support had been found during this period in other ways than the tilling of the soil for a new population of 8,500,000 souls. Since the beginning of the present century we had had to find new means of support for no fewer than 17,000,000 people. In calling attention to and correcting certain statements, which had been made with regard to what was called the 'depopulation' of our rural districts, — statements made, he said, to support propositions of violent social change, — Mr. Booth stated that the exodus from rural or non-urban districts amounted to 605,000 instead of 2,000,000 (mentioned by Mr. Wallace in 'Bad times' as the decrease between 1871 and 1881 in the rural population), and that the influx into the towns was less, again, than the total exodus from the rural districts by reason of the loss by emigration, finally reducing Mr. Wallace's 2,000,000 to 441,000. The greatest influx into urban areas was into comparatively new places, while the next greatest movement was that into the country districts surrounding the present centres of population, and especially adjacent to the new urban districts.

Purely agricultural districts had lost population largely, but otherwise there had been all over the country a fair distribution of the increasing millions, and everywhere new occupations had been found. It was unfortunately impossible to trace the occupations, other than agriculture, of the non-urban population. The backbone of the industrial organism they were studying was building and manufacture, which he ventured to bracket as being alike the turning of raw materials into things serviceable ; and they found that this remained nearly constant, at 38 per cent of the employed population.

The industrial development of England since 1851, and her apparent position in 1881, might, on the whole, be regarded with satisfaction; nor could any changes since 1881 have seriously affected the result. The growth of the population of Scotland ($6\frac{1}{2}$, $9\frac{1}{2}$, and $11\frac{1}{2}$ per cent for the three decades) had been slower than that of England, and the proportions engaged in each main division of industry were somewhat different; but the points of similarity were much more noticeable than the points of difference.

If the picture given of the condition of agriculture in England and Scotland was gloomy, that of the whole condition of Ireland was much more so. The numbers employed in agriculture had decreased since 1841 by 858,000, out of a total of 1,844,000; and those who might, perhaps, be counted as supported by agriculture, by 2,500,000 out of 5,000,000. Nor was that all; for, these reductions being proportionately greater than those of the whole population, the percentage employed in or supported by agriculture had decreased, as well as the total numbers. The land in England and Scotland employed as many, and probably supported nearly as many, as it did in 1841; and meanwhile other productive industries supported the bulk of our great increase of population. In Ireland, on the other hand, not only did the land fail to support half of those it once in some fashion maintained, but other productive industries (e.g., building and manufacture) were even worse off, and, like agriculture, showed it both in numbers and percentage, those engaged in building and manufacture (taken together) being 10.9 less in percentage, as well as 626,000 fewer in number, than in 1841. It was when taken together that these facts appeared so serious as evidence of decadence. Nevertheless, the view was commonly held, that, in general well-being, Ireland had enormously improved since the famine. No evidence of this improvement was to be found in the occupation returns, which, on the contrary, pointed to a demoralization of industry likely to be the cause, as well as consequence, of poverty and waning trade, and certain to be the source of political discontent. He knew that figures might be, and were, drawn from bank deposits and other returns which seemed to tell a different story. He would not attempt to reconcile this conflict of evidence, as to do so would be beyond the scope of his paper.

The *Times*, continuing its comments, says, "Before drawing conclusions as to the amount of labor applied to the soil, we have to remember that much of the apparent loss is simply due to the substitution of machinery for human activity, and also that numbers of men now included in

the manufacturing class are, in fact, employed, though indirectly, in extracting food from the soil. A reaping-machine supersedes a great deal of rural labor, but its construction involves the labor of a great many miners and artisans. It is perfectly proper to include these in the manufacturing classes for statistical purposes; but it would be a wanton misuse of statistics to ignore the fact, when the supply of food is in question, that it is the growth of food which provides them with employment. Mr. Ruskin asserts for himself the right to rail at all substitution of machinery for human handicraft; but practical men who accept labor-saving machines in cotton-mills cannot consistently object to their introduction into corn and beef factories, however much they may lament the tendency of 'progress' to transfer men from the open air to confined workshops. It curiously illustrates the continual failure of statistics to overtake the changes occurring in the social organism, that the distinction, apparently so sound and simple, between agricultural and manufacturing industry, utterly breaks down upon examination. There may be an actual decrease in the amount of energy applied to the production of food; but statistics do not tell us what it is, because they fail to discriminate between real withdrawal of energy from agriculture and mere change in the methods of applying it."

MRS. SIDGWICK AND THE MEDIUMS.

THE May meeting of the London society for psychical research was the occasion of the presentation of a paper by Mrs. Henry Sidgwick, which has been looked forward to with interest. The title of the paper was "Results of a personal investigation into the physical phenomena of spiritualism, with some critical remarks on the evidence for the genuineness of such phenomena." By physical phenomena of spiritualism, Mrs. Sidgwick means those which, if correctly described, and not due to conscious or unconscious trickery, nor to hallucination on the part of the observers, exhibit the action of a force in the physical world which has been previously unknown. Such physical phenomena would include raps, movement of tables without contact, materializations, psychography, and so forth. The writer stated that her experience in spiritualism extended over a period of twelve years, and had been entirely inconclusive except in cases where the phenomena were proved to be due to the action of the medium. She had had *séances* with all the leading English mediums (including Dr. Slade), and in every case there was evidence pointing more or less directly to deception and conjuring. The first part