

THURSDAY, OCTOBER 10, 1889.

THE SCIENCE COLLECTIONS AT SOUTH KENSINGTON.

THE English, like their American cousins, are a remarkable people, and in nothing more remarkable than in their toleration of incongruities.

They are gradually amassing at South Kensington an art collection which has but few rivals in the world, and the approach to it is shadowed by architectural monstrosities which, if regard is had to their position, are absolutely unrivalled. Within, they visit with apparent pleasure a hall decorated by the hand of Sir Frederick Leighton, and filled with the most exquisite masterpieces of Oriental art. Without, they are satisfied with the "Brompton boilers."

They concentrate, during a quarter of a century, collections to illustrate natural history, the physical sciences, and art, on one spot. They make it the head-quarters of State-aided education in science and art. Under the highest auspices a building is growing there, in which the products of the colonies are to be displayed to view. Close to it stands the Central Institute of the City and Guilds of London for Technical Education. Thus, in their own peculiar way, by apparently disconnected steps, and under the management of half-a-dozen independent authorities, they evolve the noble idea of a great centre in which collections of all that is interesting, beautiful, and useful in the history and present applications of science and art shall illustrate, and be illustrated by, the researches and teaching of men like Profs. Huxley and Flower. They arrange a scheme by which the benefits are not confined to the metropolis only. The collections are circulated through the provinces, and provincial teachers are brought to the collections. Having done all this, they leave it in the power of one of the authorities—a set of irresponsible Commissioners—to cut into the heart of the site thus dedicated to science and art, with rows of stucco "mansions."

They house their natural history collections in a palace, and place its management in hands which have made it a palace of delight. They store invaluable collections to illustrate the progress of science and technology in sheds which are barely water-tight, and liable to burn like a tinder-box. They rely for their arrangement upon the "good-nature" of Professors of whose formal duties it forms no part, and upon the patriotism of men like Mr. E. A. Cowper, who, rather than see a good thing left undone, are willing, at great personal sacrifice, to do it themselves. Lastly, they leave questions as to the success of this haphazard system to be raised, not by some recognized scientific authority, but by the Treasury clerks.

Fortunately, as is so often the case in England, the results are better than the system. The suggestion that a great collection of scientific apparatus should be formed at South Kensington was made by the Duke of Devonshire's Commission. The ideal to be aimed at was defined by Commissioners appointed by the Science and Art Department, under the Chairmanship of Sir Frederick

Bramwell. The Treasury, however, alarmed by "complaints of want of space in the galleries," recently determined to reconsider the matter for themselves, and appointed another Commission, which was, as it was doubtless intended to be, a very strong one. Had the Report, signed by the Treasurer of the Royal Society—Dr. Evans—as Chairman, by Lords Rayleigh and Francis Hervey, by Mr. Bernhard Samuelson, by Sir Douglas Galton and Sir Henry Roscoe, been adverse to the practical results attained by the collections, apart from the system under which they have been achieved, their opinion would doubtless have been regarded as conclusive. As it is, the Treasury will now have to bear in mind the following, which it will perhaps regard as inconvenient, facts.

The Commissioners were asked "whether there are any duplicates or other objects no longer essential to the value and representative character of the collections, which might be removed in order to provide additional accommodation for new objects of greater importance." They reply that "little, if any, space can be gained by weeding the existing collections."

They were requested to "investigate the existing practice of circulating scientific objects on loan to museums and schools so far as it affects the question of accommodation for storage or exhibition purposes at South Kensington." They reply that the space used for such purposes "has no practical bearing as to the housing of the collections."

They were not explicitly asked as to whether the existing museum accommodation is or is not adequate, but they assert that the question cannot be separated from those which were referred to them, and they recommend that, instead of the 60,000 square feet at present occupied, "an exhibition space of about 90,000 square feet should be provided without delay" in order to secure "a creditable Science Museum."

They also assume that this space will be covered with buildings "well arranged, well lighted, and of a durable character," a series of conditions which, as is evident to the casual visitor no less than to the Commissioners, is not fulfilled by some of those at present in use.

In short, the South Kensington Museum contains only objects which ought to be exhibited, in buildings *not* suited for their preservation and exhibition, and in space so cramped that it ought *without delay* to be increased by 50 per cent.

The Report was very well received by the daily press, and is certainly justified by the facts. It now only remains for public opinion to urge the Treasury to carry out the recommendations of its own Commission.

The Museum appears to be appreciated by the general public, and even to compete with the Natural History Museum on more equal terms than could have been expected. During the last four years there has been a steady increase in the number of visitors. In 1888 the Science Museum was inspected by 259,588, and the Natural History Museum by 372,802 persons.

Teachers under the Department are allowed, with certain reasonable restrictions, to bring their classes to the galleries, and to have the apparatus taken out of the cases for their inspection. The number of visitors who have thus had the cases opened for them, or in other ways

have received special assistance in the galleries, has risen from 174 in 1880 to 1687 in 1888. The number of classes which have had the advantage of instruction illustrated by the apparatus which their teachers have been allowed to handle and to demonstrate, has increased from 7 in 1880 to 81 last year.

Every year 600 science teachers apply to be allowed to attend the summer courses held in the Normal School of Science. From these 200 are selected, and not only are the lectures which they attend illustrated by means of objects contained in the Museum, but they are able to inspect typical collections of apparatus, ready set up and arranged for the performance of the experiments which they are recommended in the Directory of the Science and Art Department to show to their classes.

It appears, then, that the full use of the galleries is not hampered by unnecessary restrictions. Permission to handle the apparatus is a privilege which does not suggest red-tape. Every effort is made to enable provincial teachers to share the advantages which may be reaped from the Museum, and it is casting no discredit upon the admirable provincial colleges which are springing up in our large towns to say that even a country like England could not gather more than one such collection as that which is being formed at South Kensington. Let us hope that the Report of the Commission has made it certain that, to the benefit of both town and country, the development of the collection will be promoted, and that before long it will be properly housed.

Although, however, the management of the Museum seems to have been satisfactory in practice, the Commissioners again travel outside the exact terms of reference to them, to express an opinion that the organization of the staff in charge of it requires revision. One of the Professors was specially examined on this point, and his opinion appears to be closely in accordance with the terms of the Report.

At present the responsibility for the collections lies primarily with the Lord President, and next to him with the Vice-President and the Secretary to the Science and Art Department. It is but one of the many proofs—which are often overlooked or ignored—of the ability with which the Department has been administered, that the Commissioners find no fault with the present state or future aims of the Museum. It is, however, impossible that collections so varied should be controlled without the help of experts, and, as matters stand, this assistance is sought in a more or less informal way from consultative Committees who have no real authority and no official responsibility. The results attained in some sections have been, for the most part, due to volunteers like Mr. Cowper, who has acted on several Committees of advice, and done the lion's share of the work, so that he "has been"—to quote his own words—"familiar with every one of the machines in the Department." The collections of scientific instruments are supervised by the Professors of the Normal School, whose advice is given subject to the limitations just described.

It would be premature to discuss the details of a scheme by which these arrangements might with advantage be superseded. A hearty admiration for the work which has been accomplished and for the ability of the officers of the Department under whose authority it has been carried out

is, however, compatible with a no less hearty assent to the opinion of the Commissioners that "the system is defective in principle, apart from the personal qualities of those working under it," and that "the responsibility for the formation and supervision of these collections should certainly be of a more definite kind."

#### DARWINISM.

*Darwinism.* By Alfred Russel Wallace, LL.D., F.R.S. (London: Macmillan and Co., 1889.)

THE object of Mr. Wallace in writing the admirable work which he has published with the title of "Darwinism" has been "to give such an account of the theory of natural selection as may enable any intelligent reader to obtain a clear conception of Darwin's work, and to understand something of the power and range of his great principle." No one has so strong a claim as Mr. Wallace to be heard as an exponent of the theory of the origin of species, of which he is—with Darwin—the joint author. He has produced a thoroughly readable book, condensing into an octavo volume much of the speculation and description of important facts which are contained in the numerous volumes published by Darwin himself, and in the essays and occasional contributions of subsequent writers. Besides this, Mr. Wallace's book contains an exposition of highly important and interesting views of his own on subsidiary matters, which have either not been published previously or have appeared in a scattered and more or less inaccessible form. Consequently, the book is one which has interest not only for the general reader, to whom it is primarily addressed, but also for the more special student of natural history. The latter will find in its pages an abundance of new facts and arguments which, whether they prove convincing or not, are of extreme value and full of interest. If we attempt here to point out some of the shortcomings of Mr. Wallace's treatise, it is not from any desire to minimize its value and interest, but rather an acknowledgment of the weight and significance of a work on so important a subject by so specially competent an author.

Mr. Wallace's book necessarily suffers, in comparison with the works of Darwin himself, by the limitation of space. It is in consequence of this compression that we miss in the new statement by Mr. Wallace that extraordinary cogency or power of convincing which so distinguished the writings of Darwin. With Darwin one becomes accustomed to see no speculation put forward, no step of an argument advanced, unless there is an overwhelming weight of testimony in its favour: facts are cited in astonishing abundance, and at the same time the conviction establishes itself that the author has reserves of fact as rich as those of which he makes use, and further that he is so scrupulous and so modest that he will never ask his reader to accept a conclusion, however trivial, without stating fairly the amount of evidence for and against such conclusion. Mr. Wallace is prevented by the scope of his work from such treatment of his subject. As a result, his conclusions often appear to be (when they may not be so) based on very insufficient evidence, and his statement meagre. "Darwinism" can never take the place of the "Origin of Species," but may