SCIENCE.

FRIDAY, JULY 20, 1883.

THE U. S. NATIONAL MUSEUM.

I.

THE brief pamphlet recently issued by the assistant director of the museum as his special report for 1881 is, perhaps, one of the most important documents which has yet appeared in the history of science in this country. It represents the institution which in the natural course of events should become the leading organization of its kind on this continent, and also furnish the motive and the pattern for the many similar copies which will naturally follow its example in other parts of our extensive possessions. It also presents to foreign nations the ideals, which, they will naturally suppose, represent our existing scientific culture and the tendencies of science in this country. They will hardly imagine that it has not been debated at all by scientific men at large, that it is the work of no representative commission, and that it cannot in any sense be considered as the deliberate result of consultation with the leading men of the United States in all departments.

In this respect, we think that the action of the government — if the plan is, as we understand, already adopted in the museum — is open to the severest criticism, and that it shows a curious want of prudence to definitely settle the future of an institution in which the whole country is more deeply interested than any other of its kind, without allowing the voice and criticisms of scientific men to be heard. It is certainly a wide departure from the wise example of the Smithsonian, and shows, that, at Washington, success has already begun to dull the edge of the wise forethought which led to such successful results in the planning of that institution.

That the museum must be a loser in influence by such a proceeding lies in the nature of things. The science of this country is certainly not responsible for the plan, and, however good it may prove to be, has had no proper opportunities for expressing its opinion about a matter in which its deepest interests are concerned.

In his opening considerations, Mr. Goode divides museums into three classes, — those for record, those for research, and those for education. He considers that all three of these objects are essential to the development of any comprehensive and philosophically organized museum. By record, the author means the preservation of collections which have served as the instruments of past research; and by research, the accumulation of materials of all kinds to provide for new investigations. The author here assumes an historical standard, and thinks that the objects of museum administration determine their classification; whereas, in our opinion, practical considerations really settle the class to which a given museum should be referred. There is, as the author remarks, no separation of the two purposes of record and research; and it would perhaps have been clearer to the inexperienced in this branch of technology if the preservation of records, and accumulation of materials for research, together with adequate provision for the publication of original results, which is not mentioned by him, had been defined as the inseparable trinity of a museum of the first class. Mr. Goode's opinion, that such museums should have exhibition-rooms, and display both their records and the results of research, indicates a broad and well-balanced judgment of the aims of museum administration. The prevalent opinion among young investigators, that no public display of records should be made, arises from obstacles which the expenses of exhibition have heretofore presented to the successful performance of the proper functions of this class of museums in the encouragement of research, and also to

their frequent failures as instruments for the education of the public.

Two functions, that of museums of research and that of museums of education, have been confused in their display of specimens; but, while this shows the necessity of a separation and a change of policy in their choice of collections for exhibition, it does not justify the withdrawal of valuable and useful records from public view. Leave to consult original specimens cannot be lightly granted, and the idiosyncrasies of their guardians is a large element of uncertainty in the way of those desiring to see such treasures. There are also classes of persons daily on the increase who should, at any rate, have the privilege of seeing them, though not fit to be trusted with their direct handling; and the wants of this class cannot be justly disregarded. We are therefore most heartily in sympathy with Mr. Goode in his opinion, that the highest value of original records is given to them when they are placed on exhibition; but we probably differ in thinking that this should be done in museums or collections exclusively devoted to research, and meant for the use of the special student rather than the general public.

Mr. Goode's third class of museums, the educational, we should designate as the second class; since these are often separated from the former, and ought always to be conducted with distinct purposes, and governed by a class of men who are familiar with the educational wants of the public, i.e., all those classes of persons who must get their information through the glass, and are not permitted to handle specimens. The needs of this class are but imperfectly understood by the investigator, or, if understood, very apt to be considered by him as of slight importance. It is certainly not his essential function to satisfy these demands, as in the case of the true educator, and as should be the case with the curator of an educational collection.

Mr. Goode's ideal of a great educational museum is accomplished by the union of the natural history and industrial museums; and this has evidently arisen from his experience and study of similar unions occurring more or less accidentally in the different great exhibitions held in civilized countries of late years. He points out, that, while these great industrial exhibitions have shown a tendency to become purely commercial, they have served, wherever they have been held, as the starting-points, in time and materials, of permanent industrial museums. The effect of the world's fair in Philadelphia in 1876, in accordance with this law, demonstrated the educational value of a more permanent industrial museum, and suggested that an immense field of usefulness would be open to an institution which should be based upon similar grounds, but which would endeavor, by a more efficient and scientific arrangement of its specimens, to impart "a consistent and systematic idea of the resources of the world and of human achievement."

This novel and somewhat startling aim is announced as the future guiding-star of the National museum, which is declared to be in the best possible trim for the accomplishment of such a purpose, since it is now starting anew, and is not encumbered by the immense masses of duplicates which have become the most serious obstacles in the path of the older museums. It is, in other words, free to choose the path of its future work; and while this seems to be true, and the author must be acknowledged the best judge of the fact, we do not find any allusion to the accumulations formerly stored in the Smithsonian, nor as to how these and other collections, made upon the old basis for purely scientific research, are to be brought into harmony with the new ideal.[1] It is much to be regretted, that, in this preliminary announcement of so important a national enterprise, the author had not taken more space for such interesting explanations, and also for the fuller consideration of the arrangement of topics according to their relative importance.

This treatise shows, nevertheless, in all its

[1] Though we do find (as quoted in italics immediately below) that these collections, and we presume those which will be continually flowing in from the Geological survey, the Fish-commission, and other sources, are to be arranged on a different plan from all the other collections. It would have greatly enlightened us if we could have known what this plan was, but nothing further is said of it.

parts, that the practical aspects and difficulties of the question have been studied with great thoroughness and ability, and have naturally absorbed the time and thoughts of the author, and taken, therefore, the most prominent place.

What seem to us the most valuable and fundamental of all the considerations are brought in as secondary. Thus we find an intimation only that the museum "attempts to show the evolution of civilization;" we cannot be wrong, it appears to us, in imagining that this is to be the great aim of the National museum; and again, "the collections should form a museum of anthropology, the word 'anthropology' being applied in its most comprehensive sense. It should exhibit the physical characteristics, the history, the manners (past and present) of all peoples (civilized and savage), and should illustrate human culture and industry in all its phases. The earth, its physical structure and its products, is to be exhibited with special reference to its adaptation for use by man and its resources for his future needs. *The so-called natural history collections — that is to say, the collections in pure zoölogy, geology, and botany — should be grouped in separate series, which, though arranged on another plan,* shall illustrate and supplement the collections in industrial and economic natural history." We felt immediately the deepest interest in knowing how so large a part of the National museum could be arranged on another plan without confusing the effect of the whole, but looked for explanations in vain.

The idea of making the National museum a museum of anthropology must, we think, command unqualified respect; and it seems to us to contain so much of future promise, that we feel all the more regret that the details of the scheme had not received the healthy purgation of general and expert criticism. The classification is also highly original, and shows the result of extensive study, and practical knowledge of ways and methods.

The general outlines of the scheme of classification, which is announced as provisional and open to necessary modification, are as follows: the exhibition of articles is to be divided into eight large divisions, or 'sections,' including sixty-four smaller divisions; which last we shall, for convenience, designate under the name of 'topics,' to distinguish them from the sections into which they are grouped by Mr. Goode, — "Section I., Mankind; II., The earth as man's abode; III., Natural resources; IV., The exploitative industries; V., The elaborative industries; VI., Ultimate products and their utilization; VII., Social relations of mankind; VIII., Intellectual occupations of mankind."

We recognize the enormous difficulties in the way of the author of this scheme; and, while we congratulate him upon the successful handling of the details, — which we have not the space to quote in full, and therefore cannot do him personally full justice, — we must dissent strongly from the main ideas, which, we think, show the want of a broad and masterly comprehension of the philosophical ideas which should govern the classification and purposes of our National museum. The scheme itself, in this respect, is a curious mixture of the old notion, that, in order to understand man, we must necessarily start with the study of mankind, and of the modern idea of evolution. The legitimate process of instruction from this stand-point begins with the simplest forms of life, and follows up their developmental and evolutionary history in organization and in time, until we arrive at the most highly specialized forms. Man is the most highly specialized of all animals, physically and psychologically, and therefore, it is claimed, needs to be viewed in the light of all knowledge, unobscured by the prejudices and misconceptions which are liable to arise from the adoption of the opposite modes of study.

Certainly the former mode is incompatible with the thorough and direct method of studying the principles of evolution, whether these relate to one set of objects or another, and is not accordant with the idea of the 'evolution of civilization' and the evident necessity of expressing, in all the minor industrial collections, "the steps by which man has ar-

rived at the present condition in every direction in which human industry has been exerted, — a graphic history of the development of the human culture and civilization."

These are Mr. Goode's own declarations of what seem to be the vital intentions of his scheme; and it is therefore a serious error, both practically and theoretically, when he places the natural history of man, including his psychology and individual manifestations, at the head of his scheme, in place of making this department the terminal one, to be viewed by visitors only after they had gone through with all the other departments.

The author has arranged the sections and sixty-four topics according to a system which is artificial, and irreconcilable with his intentions and his general objects, and shows this in the place assigned to mankind. Man is essentially the product of the forces which have acted upon this earth. Without going into the question of whether these forces were divine or material, which is of no value in such a technical discussion, it is certainly very illogical to place the conclusion before the beginning, the consequent before the antecedent, man before the earth. This may be very satisfactory to those who need, or think they need, to perpetually swing the censer before the old idol of man's supremacy in the universe; but it is none the less unnatural and illogical to have one mode of arrangement for the parts of a great collection, and another for the whole.

In a future number we shall consider some of the minor features of this elaborate scheme.

LIST OF TWENTY-THREE NEW DOUBLE STARS, DISCOVERED AT CAROLINE ISLAND, SOUTH PACIFIC OCEAN, BETWEEN APRIL 27 AND MAY 7, 1883, BY E. S. HOLDEN AND C. S. HASTINGS.

Star.	α, 1880.0.	δ, 1880.0.	p.	s.	Mags.	Observer.	Date.
	h. *m.* *s.*						
Stone, 5791	10 28 35	−54° 46′	250°	2″	8.5 – 9	Holden	May 1.
Anon.	11 31 28	−60 14	350	1½	8.5 – 9.5	Holden	April 28.
Lac., 4936	11 48 58	−55 25	230	2	7.5 – 8	Holden	May 1.
Anon.	11 57 40	−57 5	240	1½	8.5 – 9.5	Holden	May 4.
Lac., 5223	12 31 24	−55 16	205	1½	7.3 – 9.3	Holden	May 1.
Anon.	13 1 16	−52 5	200	1¼	9.5 – 9.5	Holden	May 4.
Lac., 5434	13 6 59	−62 57	40	1½	7.5 –10	Holden	May 6.
Lac., 5738	13 48 28	−53 33	330	2	6.5 – 8.5	Russell	A. B.
			290	25	6 5 –13	Holden	May 2, A. C.
Lac., 5817	13 59 56	−49 18	30	¾	7.5 – 7.5	Hastings	May 1.
Lac., 5844	14 6 14	−61 9	180	3½	7 – 9	Hastings	May 2.
Lac., 6066	14 41 16	−72 42	90	1½	6 – 8	Hastings	May 2.
Lac., 6136	14 50 35	−67 30	0	5	7 –10	Hastings	April 27.
Anon.	15 2 18	−40 31	70	4	7 – 8	Hastings	May 4.
Stone, 8250	15 3 33	−51 38	220	3	7.5 – 9	Holden	May 2.
Lac., 6259	15 6 36	−60 27	300	12	6.5 –13	Hastings	April 27.
Anon.	15 7 20	−68 8	0	1¾	7.5 – 9	Hastings	May 2.
Anon.	15 8 40	−53 50	170	3	8 –10	Hastings	May 1.
Stone, 8348	15 14 18	−47 29	225	1½	8.0 – 8.5	Hastings	May 1.
ϵ Lupi	15 14 32	−44 15	175	¾	3 – 6	Hastings	April 27.
Lac., 6488	15 36 11	−50 24	210	2	7 – 9	Holden	May 4.
Lac., 6540	15 44 44	−60 23	85	1	6 5 – 9	Hastings	May 2.
Stone, 9221	16 50 15	−56 25	125	2	7.5 –10	Holden	May 7.
Lac., 7315	17 23 16	−40 57	95	1	8.0 – 8.5	Holden	May 7.

THE UNITED STATES FISH-COMMISSION STEAMER ALBATROSS.[1] — II.

THE fitting-up of a small floating scientific laboratory, which might remain at sea for a month or more at a time, and yet include every necessary convenience, was a somewhat novel problem, and required a considerable amount of planning, based mainly upon past experiences of the fish-commission. The general arrangements are now, for the most part, complete, but they are subject to alteration and improvement.

The main laboratory (see figures, pp. 68, 69) is twenty feet long, twenty-six feet wide, and nearly eight feet high. The forward-end of the room is devoted to storage, and the sides and

[1] Concluded from No. 22.