— The King of Italy has signed a decree authorizing the publication of a new and complete edition of Galileo's works, at the expense of the state. The ministry of education has, with the co-operation of leading scientists, undertaken the preparation of this edition. It will comprise twenty quarto volumes, of about five hundred pages each.

— Work on the tunnel under the Hudson, between Jersey City and New York, has recommenced, and an average progress of three feet per day is being made. Incandescent electric lights are being substituted for the arc lights previously employed.

— There are at present upwards of one hundred miles of cable-railway in operation in this country, and about fifty miles in course of construction.

— The Clarendon press, Oxford, propose to publish from time to time, under the title 'Annals of botany,' original papers, adequately illustrated, on subjects pertaining to all branches of botanical science; also articles on the history of botany, reviews and criticisms of botanical works, reports of progress in the different departments of the science, short notes and letters. A record of botanical works published in the English language will be a special feature.

— The French are preparing a series of monographs identical in scope and character with the very successful 'English men of letters' series. The title will be 'Les grands écrivains français,' and the following volumes are already announced: 'Victor Cousin,' by M. Jules Simon; 'Madame de Sévigné,' by M. Gaston Boissier; 'George Sand,' by M. Caro; 'Turgot,' by M. Léon Say; 'Montesquieu,' by M. Sorel; 'Voltaire,' by M. Brunetière; 'Villon,' by M. Gaston Paris; 'D'Aubigné,' by M. Guillaume Guizot; 'Racine,' by M. Anatole France; 'Boileau,' by M. Brunetière; 'Pascal,' by M. Havet; 'Rousseau,' by M. Cherbuliez; 'Joseph de Maistre,' by the Vicomte E. Melchior de Vogüé; 'Lamartine,' by M. de Pomairols; 'Balzac,' by M. Paul Bourget; 'Musset,' by M. Jules Lemaître; 'Sainte-Beuve,' by M. Taine; and 'Guizot,' by M. G. Monod.

— Sir Henry Roscoe, M.P., has introduced a bill into parliament to make provision in day-schools by which young persons who have passed through the public elementary schools, and others, may obtain further instruction in technical subjects. The bill empowers any school board, local authority, or managers of a public elementary school, to provide day technical and commercial schools and classes for the purpose of giving instruction in any of certain subjects. These include the several science subjects which are specified in the directory of the science and art department, and in which that department undertakes to examine. The following subjects are also included: the use of ordinary tools, commercial arithmetic, commercial geography, book-keeping, French, German, and other foreign languages, and freehand and machine drawing. The addition of other subjects may be sanctioned from time to time by the committee of council on education or by the science and art department. For the purpose of carrying on these schools and classes, the power of school boards, other local authorities, and school managers, is to be in every respect the same as for providing ordinary elementary schools. Moreover, they are to have power to provide, or contribute to the maintenance of, laboratories and workshops in endowed schools for the purpose of carrying on classes or instruction under the bill. However, all these schools and classes are to be subject to the inspection of the officers of the committee of education or of the science and art department; and before a scholar is admitted he must have passed the sixth standard or some equivalent examination. The education committee and the science and art department are authorized to give grants on such conditions as they may lay down for any of the subjects taught in these technical or commercial schools or classes. For the purpose of obtaining grants, a technical school or class must be one carried on under minutes to be made by the science and art department, and laid on the table of the house of commons in the same way as the minutes that regulate the grants of the education department.

— Beginning with September, 1887, the University of Kansas will offer, in addition to the general and special courses already in existence, a four-years' course in electrical engineering.

— The date of inauguration of the mineral exhibition at Lima, Peru, has been changed from Oct. 1, 1887, to June 21, 1888.

LETTERS TO THE EDITOR.

***The attention of scientific men is called to the advantages of the correspondence columns of* SCIENCE *for placing promptly on record brief preliminary notices of their investigations. Twenty copies of the number containing his communication will be furnished free to any correspondent on request.*

The editor will be glad to publish any queries consonant with the character of the journal.

Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.

Height of a meteor.

MY observation of the course of the meteor which appeared at about 8.42 on the evening of June 15

may perhaps be made use of in determining the height of the meteor above the earth's surface.

When I first saw the meteor, it was passing, I should say, through the constellation Leo Minor. I am confident that it passed a little east of Beta Leonis Majoris, say three degrees, and I think that it passed east of Gamma Virginis, near which it disappeared. While passing between these two stars, it emitted two flashes of brighter light, — white or somewhat bluish. Its motion was slow.

J. R. W.

Dorchester, Mass., June 21.

Museums of ethnology and their classification.

The article of Dr. Boas, to which you call attention in your note to myself, treats of two distinct subjects: first, the interpretation of similarities; and, second, the best method of grouping archeological objects in the museum. In Professor Mason's report the same subjects are discussed. The interpretation question has but a very remote connection with the museum question, and as I have already discussed it somewhat at length in the 'Third annual report of the bureau of ethnology,' under the head of 'Activital similarities,' I think I may well neglect that subject in this short communication.

The functions of a museum are twofold: first, as a repository of materials for the investigator; second, as an objective exemplification of some system of knowledge pertaining to the subject for which the collection is made, to be used by an instructor with his pupils, and as an exhibition of facts for the passing observer who visits the museum.

The first purpose is of prime importance: the history of museum administration abundantly develops this fact, and more and more is its value understood. It is in this manner that great museums make substantial contributions to science, and increase the knowledge of the world. The successful management of a museum for this purpose involves the study of museum cases and various other appliances and devices, together with museum records, descriptive catalogues, etc. In the performance of this function the methods and appliances of the national museum are of the highest excellence, but it would require a volume to fully set them forth. Professor Baird, one of the greatest organizing minds of the scientific world, has devoted a large part of his life to this subject.

The secondary use of a museum, mentioned above, somewhat interferes with its primary use; and because it is secondary it must not be allowed to interfere with the more important function. In a great museum like that at the national capital, the collections are so vast that the public exhibition of them all is impossible: only a very small per cent can be shown with reasonable expenditure. This being the case, the secondary use interferes with the primary use only to that limited extent. A few selections are made to be shown to the public: the great mass of material is kept ready to do service for the investigator. Therefore, with regard to the arrangement of the materials for the museum for public exhibition, the question is narrowed down to this: first, on what principles shall the selections be made? and, second, in what order shall they be arranged? That is, the administrator of the museum is called upon to determine what is the most useful lesson to the general public which his materials can be made to teach. Every investigator will be more or less likely to consider his own subject of prime importance, as it is to himself; and every instructor is, in like manner, likely to consider that his system of instruction is of prime importance. As research progresses, one set of problems after another comes to the front, and is for the time being of chief importance. For such reasons the museum appliances for exhibition should be of an easily adjustable kind. No sound philosophic scholar, be he investigator or instructor, will assert that his own system is complete and final, that any classification or arrangement is ultimate. It is in view of these facts that the authorities of the national museum have devoted their efforts very largely to methods of exhibition, to the consideration of cases, trays, stands for mounting, etc., so as to have the parts interchangeable and easily readjusted to new conditions, — new facts arising from the advance of the science and from the enrichment of the collections; and it seems to me that many problems involved have been very satisfactorily solved. The actual exhibition portion of the collection in the national museum has not been put into permanent shape. What has been done has been experimental and tentative. The arrangement at one time may be very different from that of another; and this is rendered easy and inexpensive by reason of the system above described.

Now, Dr. Boas offers a system or plan for the arrangement of the materials which relate to the pre-Columbian peoples of America and their descendants. He would have them arranged by tribes. On the discovery of America there were probably many more than twenty-five thousand tribes inhabiting the country, each a little band of people organized into a body-politic, and autonomous, at least for all domestic purposes. But probably within the first year, changes were made in some of these bodies-politic: some coalesced by treaty or conquest, others divided through disagreement, individuals from some tribes took up their abode and became incorporated with other tribes: and so, by various methods from time to time, all of these bodies-politic were in a flux; so that a hundred years after the discovery of America it is not probable that there existed any one tribe which could claim to be the pure and simple descendant, without loss, admixture, or change, of any tribe existing at the time of the discovery. These changes have been going on more and more rapidly until the present time, and they are still going on. Most of the tribes best known to history have been absorbed, consolidated, and redivided again and again. Now, this means simply that under primitive and under modern conditions alike there has been no permanent tribal organization, — a body-politic whose history can be followed as that of one people by hereditary descent. A museum collected to represent the tribes of America, therefore, to be properly representative, would have to be collected as the census of the native inhabitants of India has been taken, all in one day, by an army of collectors. Collected in any other way, it would have no proper significance; and collected in the manner suggested, it would have very little scientific value.

But if a classification of the tribes of North America were possible, the archeologic collections actually made in the country could not be relegated to them, for the tribes have been forever migrant.