SCIENCE.

FRIDAY, AUGUST 8, 1884.

COMMENT AND CRITICISM.

APROPOS of the appointment of the electrical commission mentioned last week in our notes, is not the manner in which candidates are selected for scientific appointments at Washington worthy of serious consideration? There seems to be no scientific authority there who feels entitled to come forward in such cases, and represent the views of scientific men. If the latter are appealed to, to come forward themselves, the almost universal answer is, that they do not feel that their opinions would receive serious consideration at the hands of the appointing power; and that, if the authorities really care for their opinions, it is very easy to ask for them. But, unfortunately, business at the national capital is not arranged on any such system. An appointing power is not an active personage who investigates for himself, but the occupant of a seat at an office-desk, waiting for people to come forward and present their views. This personage does not assume that any one has any views unless he comes forward with them, and is not disposed to go around in search of opinions as long as he finds himself plentifully supplied with the article, ready-made, and thrust upon him. If asked to obtain the views of learned men, his reply would be a general invitation to all that class to come forward. Let the reader imagine, if he pleases, an 'industry' or an 'interest' too modest to address the authorities.

The bad effect of this state of things need not be dwelt upon: the practical question is, how it can be remedied. The only remedy is to have some central scientific authority, in intimate relations with the administration, ready to come forward and represent the scientific opinion of the country on all occasions when the interests of science are involved. If we had a department of science, its head would naturally perform these functions: in the absence of this agency, and of any special statutory provision, nothing can be effectively done, unless our leading scientific men will lay aside modesty, and accept the disagreeable features of the situation. An unofficial representative, on confidential terms with the leading members of the administration, might be nearly as effective as a department. But, mortifying though it may be, the general rule is that official position, as the responsible head of an establishment of some kind, is necessary to enable any man to command any real weight.

A STRIKING similarity may be observed between the history of names of individuals among men, and the history of scientific names given to natural objects. In zoölogy the species or variety stands in the same relation to the naturalist as the individual man stands to his fellows. The object of names is in both cases to distinguish absolutely the species, variety, or individual, from others about it. When men live in comparatively small communities, and each individual leads a stationary life, one name has generally been found sufficient; but in larger communities, or where a constant mingling of the people takes place through political commotions or increased facility for travel, a necessity arises for binomial or trinomial, or even longer names.

Thus in England, in Saxon days, one name, as a rule, sufficed; but after the conquest binomial names were gradually adopted, though these had an earlier origin in France. Binomial nomenclature answered until the eighteenth century, when trinomial names began to be introduced, and now prevail. These now are often insufficient to meet the wants of modern man, to distinguish him as an individual, to

enable him to receive his telegrams and letters when in the midst of such centres of population as London, Paris, Berlin, or New York; and thus the evolution of the four and five divided polynomial names is actually occurring, which, before another half-century, will doubtless be as common as trinomial names are to-day. In the United States the changes have taken place more slowly than in England, and in that country less rapidly than in Germany and France. In America the trinomial system began to be adopted about the middle of the eighteenth century, but did not acquire prominence until well into the first quarter of the present century. In these remarks regard is paid to the mass of the people; for the nobility, and in some regions the pride of descent, have hastened or modified the general law of name evolution, while even in England, in some isolated districts, one name alone quite recently sufficed.

Turning to natural history, it can be seen that in mineralogy and lithology the species are comparatively few, and a single name is used; although traces of a binomial system can be seen in the latter, in such names as quartz porphyry, olivine diabase, hornblende andesite, etc. Several attempts, indeed, have been made to introduce a binomial nomenclature in mineralogy, but they have always failed because both unnecessary and unnatural. In zoölogy and botany, in the olden time, one name was used; but as these sciences increased in exactness, and in the number of their species, the binomial system was introduced by Linné. This has answered the purposes of science for a long period; but the multiplicity of the species and varieties known has now become greater than the capabilities of that system, and a polynomial nomenclature is being surely evolved. Indeed, triple and quadruple names are as inevitable to designate species and varieties, of animals at least, as such names have been found to be for individual men; and the wise and philosophic naturalist is undoubtedly the one who adapts his system to the tendency of the times, — the inevitable.

Two modes seem available to meet this, — one by the use of letters or numerals; and the other by the addition, to the generic and specific names now employed, of a third or even fourth name, to indicate the variety and sub-variety so far as need be. The former finds an example in the use of 'sen.,' 'jun.,' '1st,' '2d,' and '3d,' added to distinguish individuals, and of the Roman numerals affixed to the names of kings. This method is confessedly inconvenient and of limited use. The second method accords with the custom of mankind, and would never have been adopted if it had not been the easiest, best, and most natural system for man and his capabilities. The trinomial system of zoölogy (genus, species, and variety) has its olden prototype in the Roman name system, — gens, family, and person; or nomen, cognomen, and praenomen, — although the order of arrangement differs; e.g., Caius Julius Caesar, Lucius Cornelius Scipio. Names, for example, like Turdus fuscescens salicicola would appear, from the above, to be of proper form; but such as Eutaenia sirtalis sirtalis, or Heterdon platyrhinus platyrhinus, are as absurd as it would be to name a person John John Smith or George Washington Washington. The similarity of the laws and methods of development of nomenclature, both for mankind in general and for the naturalist, is not remarkable; for it merely displays the mind of man with its capabilities and limitations, acting on the same problem, — the separation of specials from generals. The resemblances in both cases have been carried out so fully, that even the organic chemists, in their nomenclature, rival that of the highland Scotchman in his palmiest days, and from the same cause, — the line of descent.

It is a good sign that the importance of the explorations undertaken by the Peabody museum is acknowledged by others than those in the immediate vicinity of Cambridge. The broad and national character of the museum is thus slowly meeting with appreciation. When we recall the fact that this is the only museum in the country founded and conducted for the

single purpose of the study of man, it seems impossible that it should long remain without a much larger support from friends of American archeology and ethnology. We hope that the trustees will be encouraged in their efforts by a large increase to the subscriptions for American explorations, in addition to those mentioned in our notes.

EUROPEAN naturalists regard the attention paid in this country to economic entomology, and the aid that has been given it by various states and by the general government, as one sign of 'a practical people.' With all the specialization in instruction in the foreign universities, we are not aware that there is more than one which supports a professorship of entomology. This is Oxford, where the venerable Professor Westwood honors the Hope foundation. In this country, Harvard and Cornell each have their full professorship of this science; and to the latter a summer school, having special reference to agricultural entomology, has now been attached. This seems more appropriate than many of the summer schools now so much in vogue, inasmuch as the objects of study are at this season in the height of their investigations into the power of crops to sustain insect-life. To further the interests of the school, the trustees of Cornell university have relieved Professor Comstock of his duties during the winter *semester;* and an unusually good opportunity is thus afforded to teachers, as well as others, to familiarize themselves with the principles of this branch of economic science.

LETTERS TO THE EDITOR.

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

Some United States geologists, and the propylite question.

YOUR reviewer of the recent publications of the U. S. geological survey incorrectly states that Dr. Becker does not give Rosenbusch credit for his prior advocacy of the view that propylite is a modification of andesite (*Science*, iv. p. 67), for Becker does so on p. 90 of his 'Geology of the Comstock lode;' but your reviewer ought to have stated that Wadsworth was the first American to advocate this relation of propylite and andesite, which he did in a paper published before that of Rosenbusch. In Wadsworth's paper it was remarked, that his microscopic studies of the Washoe and other western propylites, collected by Richthofen and the Fortieth parallel exploration, had led him to conclude of these typical propylitic rocks, that "the propylites are all altered andesites, with which species their chemical composition agrees; and that the diagnostic distinctions that Professor Zirkel has placed between the andesites and propylites did not hold good, even in the specimens that he described, as would have been readily seen, had he given complete descriptions instead of the very imperfect and often inaccurate ones that have been published. The distinction between these rocks is simply in the degree of alteration; and they pass directly into each other." [1]

Now, although Messrs. George F. Becker and Arnold Hague are fully known to have knowledge of this publication, they not only ignore completely the priority of Wadsworth, but also use language which would cause any reader not conversant with the subject to believe that Becker was the first American to oppose the species propylite.

In connection with a professed history of the discussion of the Washoe rocks, Becker states, "Baron von Richthofen based the independence of the new rock propylite largely upon the occurrences in the *Washoe district.* Later investigators in the same field, without exception, have adopted his views. Professor Zirkel's characterizations of the microscopical peculiarities of propylite were also founded chiefly on the *Washoe* occurrence. Though at the beginning of the present investigation [April, 1880] I was fully persuaded of the independence of propylite, I subsequently found reason to doubt it; but to prove a negative is notoriously difficult, and the great authority of my predecessors made the task still more onerous." [2]

Mr. Hague writes, "Recently Mr. George F. Becker, in his work on the Washoe district, made a thorough investigation of the so-called propylite, and as a result denied the independence of the rock-species. . . . We quite agree with him, so far as the non-existence of propylite as a distinct rock-species in the Great Basin is concerned." [3]

Any one who is conversant with the storm Wadsworth's before-mentioned paper of 1879 excited will have no difficulty in understanding why it is that these and some other geologists, who are now standing on almost if not quite identical ground with him, should proceed in such a manner.[4]

M. E. WADSWORTH.

Museum of comparative zoölogy,
Cambridge, Mass., July 21.

Swarming insects.

The editor was slightly unfortunate in his suggestion appended as a note to the letter of Mr. Abbott (*Science*, No. 77). I have just returned from Lakeside, Ottawa county, O., where the phenomenon spoken of by Mr. Abbott was witnessed almost every day for more than two weeks. The pulsating swarms were, beyond question, the 'Canada soldiers,' a species of Ephemera.

During the first ten days of the present month

[1] *Bull. mus. comp. zoöl.*, 1879, v. 285.
[2] Geology of the Comstock lode, 1882, p. 33.
[3] *Amer. journ. sc.*, 1884 (3), xxvii. 454.
[4] See, further, Proceedings of the Boston society of natural history, 1883, xxii. 412-432; and 1881, xxi. 243-274.