ments of research to lay hold of the facts and arrange them in something like rational order.

J. R. COLLINS,
Secretary.

DISCUSSION AND CORRESPONDENCE.

A QUESTION IN TERMINOLOGY.

IN replying to Professor Campbell's earnest request to explain a problem in terminology,* I feel as though an apology were necessary for taking space in SCIENCE to state one of the elementary principles of terminology adopted by recent writers on the botanical system. Had Professor Campbell evidenced as much familiarity with the development of the botanical system as followed in continental Europe and America, as with the stereotyped text-book classifications of non-systematic botanists, he would not have credited me with any new proposition in my criticism of his text-book, or have spoken of the system I have attempted to follow as in any sense '*his* system.' The criticism offered was purely a matter of usage or form, and has nothing whatever to do with our conceptions of how this or that group shall be divided, or whether orders or any other categories of classification are all of equal value—another equally elementary problem that would seem to require no answer here.

Modern classification does not commence with the universe and divide it into kingdoms and subkingdoms on the old plan of monarchical and special creation. This has passed from the horizon like Rafinesque's attempts to reduce the forms of thunder and lightning to genera and species. In accordance with prevailing evolutionary conceptions, modern classification does commence with the individual and attempts to show its relationship to other created things. In this view a species is a group of related individuals, and a genus is a group of related species. As we reach the higher category, *tribe,* we have reserved a special termination for the sake of convenience and uniformity, deriving the tribal name from a characteristic genus of the tribe adding the termination EÆ. In a similar way the family is characterized by the termination ACEÆ likewise added to a generic name. This time-honored family termination in plant classification was long abused and muddled by the English school by speaking of families as 'natural orders' of plants, and this practice lingers still among some of the old school in America. So far the recent usage of systematic botany practically coincides with that long in use; in order, however, to coordinate botanical classification more nearly with that long followed in zoology, and to distinguish properly the order from the family, Lindley's termination for the 'alliance' (*cohors* of Bentham and Hooker), -ALES, has been adopted to distinguish the next higher category above the family. A group of related families is, therefore, properly an order and is distinguished by the termination -ALES. This modern system proposed at Berlin, but not always consistently followed even there, calls for rigid adherence to the use of these terminations each for its special category in classification and for that alone. The terminations then indicate the rank of the group—a perfectly rational and eminently practical system. This was a minor part of my original criticism to which Professor Campbell has taken exception. He changed a name which had been duly proposed as a *class—i. e.,* a group of related orders which in this case (*Anthocerotes*) happens to contain a single order and a single family—and used the form '*Class Anthocerotales.*'

To apply the modern system to the pteridophytes, I should say that, from the starting point of the typical ferns (Family Polypodiaceæ), the related families (Cyathe-

* SCIENCE, II. **16**. 705, 31 O. 1902. Had my original criticism (*Torreya,* **2**: 108–111) of Professor Campbell's irregularities in terminology extended to the ferns, I could have mentioned various other inconsistencies; *e. g., Order* Ophioglossa*ceæ, Order* Filices, *Order* Lycopodi*neæ, Class* Equiseta*les,* etc. The ferns are placed in *Class Filicales* at one point (p. 246) and as *Filicineæ* at another (p. 265), where they are grouped into orders. We also have the '*Order* Isoeta*ceæ*' (p. 266) marshaled with other eusporangiates under the Class Filicales, and again appearing as 'The *Isoetineæ,*' 'a distinct *order,*' next to the 'Ord. III. Selaginellineæ' of the Class Lycopodiales. (The *italics* of course are mine.)

aceæ, Schizæaceæ, Ceratopteridaceæ, etc.) form with it a related group which we denominate *Order Filicales*. If Professor Campbell wishes to make a class to include the order Filicales and other related orders, no one could have the slightest objection, but in accordance with the recognized principles of modern systematic botany Professor Campbell is not at liberty to name his classes with the termination *-ales* for that is reserved for orders and for orders alone.

The usage of 'Our Native Ferns' (sixth edition), to which reference is made, is strictly in accord with the above in the two cases quoted from the systematic portion of the work. On page 63 where the term *Order Equisetaceæ* is used, there is clearly an error, resulting from an oversight in correcting the electros, which at that point have escaped revision since their first printing in an earlier edition when *order* was still used as a synonym of *family*.

The orders of pteridophytes which we would recognize at the present time are: (1) Ophioglossales, (2) Marattiales, (3) Filicales, (4) Salviniales, (5) Equisetales, (6) Lycopodiales, (7) Isoetales. I believe this disposition of the last group, which contains a single genus, is much more logical than the plan followed by Professor Campbell in his 'University Text-book' of leaving these humble aquatics dangling between two classes with no secure resting place whatever. They have certainly become differentiated from other pteridophytes to this extent, as Professor Campbell himself clearly states.

L. M. Underwood.

Columbia University,
November 4, 1902.

A POINT IN NOMENCLATURE.

Referring to Professor Cockerell's note in Science, November 7, permit me to say:

Under the name of *Monacanthus oblongus*, Schlegel included two species, one large in size (since called *modestus*), the other small and more strikingly formed (since called *broekii*). I have retained Schlegel's name for the smaller species, because his figure represents it, his description is chiefly based on it and his references to the larger species are casual and comparative. The larger species Schlegel regarded as '*Individus adultes*' in which the specific characters of caudal filaments and dorsal serrations had been lost. As Schlegel's 'type specimen,' in the modern sense, was clearly one of the smaller species, I retain his name of *oblongus* for it, although he regarded the larger species (*modestus*) as the adult of the same species. Wherever possible, the question of type of genus or species should be decided on data in the original work, without reference to subsequent literature.

David Starr Jordan.

NEW YORK ARCHEOLOGY.

To the Editor of Science: Dr. Merrill, of the New York State Museum, suggests that a brief account of archeological collections of interest be added to the bulletins now being issued, as a convenience for students of our local antiquities. This might be inserted in one of the bulletins yet to appear, or, if the amount of material warrants it, form a subject by itself. I know fairly well the more important collections, but there are many which have escaped my personal attention, and some inconspicuous ones contain valuable articles. With a view to carrying out this plan I would be glad to receive notes of any and all collections, public or private, which serve to illustrate the aboriginal history of New York. Photographs of articles or cases will be of great assistance, and correspondents may well give brief accounts of any local collections known to them.

I can not definitely say what the published results will be, for these will depend on the importance of the matter sent in. Ample reports are very desirable and will be placed on permanent record, but may necessarily be much reduced for publication. The idea is to make such a report as will enable students easily to find what they want in the way of illustration and information. At the same time an idea may be gathered of the abundance and character of local relics. For preliminary use the number of specimens may be given, character, material, locality, with fuller accounts of special forms. The intelli-