

limits of error of the pivoted antenna measurements and the results of the two methods may be considered to agree.

We may therefore assume in conclusion that for wave lengths over 10,000 meters, the deviation of the wave front from the vertical under ordinary conditions at Anacostia does not much exceed three degrees.

Static

With the new apparatus it was possible to obtain the angle of the wave front of the static disturbances with considerable accuracy. It was found, contrary to the hypothesis that static comes from above, that the static wave front is always practically vertical like the signal, but that at times the two angles differ sufficiently to give a readable signal on the static minimum.

Preliminary observations in this work were taken by T. H. Willey, Electrician, U. S. N., while observations with the final apparatus were made by L. M. Clausing and W. F. McBride.

ZOOLOGY.—*The nomenclature of supergeneric names.*¹ S. A. ROHWER, Bureau of Entomology.

The recent article by Dr. Harry C. Oberholser² on the nomenclature of supergeneric³ names is by far the most comprehensive treatment of the subject which has been published, and should form the basis for a discussion of the subject which will lead to the establishment of satisfactory rules covering this important question. The adoption, as a part of the International Code, of any comprehensive and uniform set of rules is most certainly to be accompanied by the change of many supergeneric names and the matter should be considered by students in all groups and an effort made to preserve as many of the best known names as possible.

Dr. Oberholser has made reference to the Hymenoptera at a number of different places in his article and it seems worth while to point out certain overlooked points and show how the rules which he recommends would work in certain groups within this order. On page 144 he implies that modern entomologists have endeavored to follow the plan of naming the family after the oldest included genus, and

¹ Received January 6, 1921.

² *The Nomenclature of Families and Subfamilies in Zoology.* Science, n. ser. 52: 142-147. 1920.

³ I have used this term because I wish to include superfamilies, families, subfamilies, tribes and subtribes.

apparently overlooks the fact that in the most recent catalogue of Hemiptera the author has been guided by the rule of priority in selecting family names. In the Hymenoptera there has been no fixed rule governing the selection of supergeneric names but by far the greater number of taxonomists have formed the names from the oldest included genus, and some of the most apparent exceptions which occur in recent catalogues are caused by the authors of these catalogues accepting only part of classifications or by their placing different values on certain supergeneric groups.

In his arguments for what he calls the "permanent type genus" rule, Dr. Oberholser advances the belief that for Hymenoptera Dalla Torre has catalogued all the family and subfamily names, and with this as a basis it would be comparatively simple to adopt this principle. This is hardly true, and when one contemplates adopting the law of priority for the selection of supergeneric names, he loses much of his enthusiasm as soon as he sees the labor and difficulties involved in cataloguing these names. Dalla Torre's "Catalogus Hymenopterum" gives only a few of these. Supergeneric group names have been used not only in taxonomic papers but also in local and faunistic lists, catalogues of collections and in biological and anatomical papers. There has never been any serious effort made to index all these names, in fact many of the papers containing them are of such a local or ephemeral nature that only the titles are recorded. To adopt this principle would mean that we should have to go completely through the vast literature dealing with Hymenoptera and when this task was completed we should still be in doubt because of the possibility of overlooking papers. Such work would require considerable time and could only be done in large libraries. After such researches were completed it would be necessary to publish the results in full, so that in case other students should wish to subdivide existing groups, they would be able to determine if a name had ever been proposed for a similar group or a group containing some of the same genera as those they included in their unit. Of course it may be argued that it would not be necessary to catalogue all papers and that we should only include those which are purely systematic, but such a plan would be unsatisfactory because it would involve a decision as to what was "systematic" and might eliminate such useful lists as those prepared for the various editions of the *Insects of New Jersey*.

From the above it might be understood that I do not favor the adoption of the method approved by Dr. Oberholser; and this is in a

large part true. The idea he defends is undoubtedly logical, it encourages and necessitates the study of the history of classification, but it is beset with certain practical difficulties. The application of the principle of priority would bring about some curious changes of which the following may serve as an example.

The genus *Bracon* is the type genus of the family Braconidae and should also be the type genus of all minor divisions of the family in which it is included. The application of the rule of priority and the other rules advanced by Dr. Oberholser would make this last impossible. Years ago the family was divided into subfamilies and these subfamilies were given names formed on the root of one of the generic names included. The students who proposed these names paid but little consideration to genotypes and their subfamily Braconinae was founded on their conception of the group *Bracon* rather than the genus of the genotype. The genus *Bracon* of the genotype belongs to a different subfamily, termed "Agathinae," which was proposed at the same time as the subfamily Braconinae. According to the law of priority the subfamily name Agathinae must hold for the group (because the name of its type genus (*Agathus*) remains unchanged) even though the genus *Bracon* is added to it; and the name of the old group Braconinae must be changed to Microbraconinae, and have as its type the generic name which replaces *Bracon* of authors (not the genotype). Perhaps the following summary will make this clearer:

Braconidae.

Braconinae Marshall, 1887 = Microbraconinae.

Type.—*Bracon* Auctt. nec Fabricius = MICROBRACON Ashmead.

Agathinae Marshall, 1887.

Type.—*Agathus* Latreille, 1805.

Includes—*Cremnops* Foerster, 1862 = BRACON Fabricius, 1804.

Hymenopterists have not followed the above but have formed the subfamily names on the oldest included genus and thus have a subfamily Braconinae in the family Braconidae. We call the Agathinae the Braconinae and the Braconinae of Marshall, Ashmead and others Vipiinae.

Other curious and unusual cases could be cited and it is practically certain that no set of rules could be made which would, without interpretation and emendation, cover all cases which will arise. There are numerous and difficult questions connected with the application of the rules governing generic names, many of which are not covered by the International Code, and when it is possible to have a method

of choosing supergeneric names which is definite and easily applied I fail to see the advantage of complicating matters by formulating numerous rules which will have to be interpreted or emended.

There has been such a lack of uniformity in forming supergeneric names that the application of any one method throughout Zoology would undoubtedly lead to many changes, and yet for the stability of such names we should make an earnest effort to reach a satisfactory "official" agreement as to methods of procedure. Because of the lack of a policy in the past I think we must digress from our usual method of procedure and adopt definite, although not necessarily the same, methods for all major groups. I believe that the International Commission would do well in appointing committees for all the major groups and that these committees should carefully review the literature of their groups and then recommend to the Commission a policy which would necessitate the fewest changes. After the Commission reviewed their report they should submit it, with recommendations, to all contemporary workers in the group. This would permit discussion. In the absence of objections an "official" opinion should be rendered. Cases where there was objection should be referred back to the committee for consideration and a revised report submitted which would follow the same procedure. After all the groups had been covered by opinions these should be formulated into rules and made a part of the Code.