

FIG. 3.

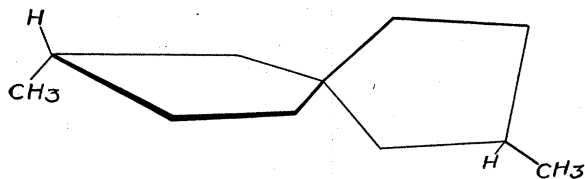


FIG. 4.

following crucial properties, shared by the compound shown in Fig. 1: (1) they are dissymmetric molecules; (2) they may be regarded as made up of two nonsuperimposable enantiomorphous halves. The synthesis and isolation of the DL-pair shown in Figs. 3 and 4 can be accomplished readily and in good yield (Sutter, H. and Wijkman, N., *Ann. Chem.*, 1935, 519, 97); the partial resolution of such a DL mixture might be accomplished by chromatography on a lactose column. Since ring systems usually exhibit high specific rotations (Kauzman, W. J. and Eyring, H., *J. chem. Phys.*, 1941, 9, 41), partial resolution should be readily observable.

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### Zoological Nomenclature: A Reply

A series of replies to our statement on "Basic Issues in the Controversy on Zoological Nomenclature" (*Science*, 1949, 110, 594), has been published (*Science*, 1950, 111, 234). Having placed our position on record, and realizing that continued discussions may only increase animosity, we should prefer to rest the case, and may do so henceforth. However, statements from such distinguished zoologists command our attention and merit the courtesy of acknowledgment. It is also our duty, particularly as we are charged with misstatements of fact, to reexamine our position carefully in the light of the comments, to admit any errors, and to reaffirm our beliefs if we are still convinced that they are sound.

The second paragraph of our statement was a summary of the Paris meeting, and not in itself an argument or criticism. It was intended to state this as accurately as possible in a brief and generalized way, although brevity unfortunately precluded qualifying phrases and details. As the factual basis of our position, it is important to analyze that paragraph for error. In order to compare seriatim our summary with the replies, the whole paragraph can be divided into eight points:

(a) Composition of the commission at Paris: Not questioned in any of the six letters.

It is regrettable that offense was taken, and "invidious innuendo" charged, at our use of the term "regular commissioners." We desired only to distinguish clearly between the temporary alternate commissioners, appointed for the duration of a congress, and the 18 regularly elected members of the International Commission. Although the latter is sometimes referred to as the "Permanent Commission," we do not feel that Mr. Francis Hemming's expression "permanent members" is entirely appropriate, for that connotes permanent tenure, whereas the members are elected for specified terms, or to complete unexpired terms.

(b) "Program prepared at great length by the Secretary": Not challenged in the replies.

(c) "Authorization for a rewriting of the code around a set of stated principles" (italics ours, here and elsewhere in this paper): The italicized portion was denied by Edward Hindle and N. D. Riley, who maintained that the commission "took precise decisions as to . . . amendments." Henning Lemche and Ragnar Späreck, however, accepted our phraseology. Secretary Hemming, who said that our statement contained "misstatements on questions of fact," did not mention this point.

Probably our wording was too abbreviated, and a more explanatory presentation is desirable. At Paris there was authorized an extensive rewriting of the code, to be based on numerous amendments involving almost every article, and including changes in the wording, changes of some principles, introduction of some new material, and review of all opinions with the purpose of accepting or rejecting any pertinent principles for use in the revised code. In most cases, decisions were only "in principle," i.e., exact and final wordings were not adopted but it was only decided that "words should be inserted to make it clear that . . ."

In passing, we note the assertions that "The principles of the rules remained unaltered" (Hindle and Riley) and "Such change of the rules was out of the question" (Lodovico di Caporiacco). It appears to us that such changes as those from binary to binominal nomenclature and from rule of the first reviser to page precedence, represents basic alterations in fundamental principles of the code. Incidentally, in view of their lament against purely nomenclatural changes, the Chicago Discussion Group will no doubt be interested to learn that the above changes were made retroactive.

(d) "Action on a large number of individual amendments, none of which had previously been voted on by the commission": The accuracy of this statement was not questioned. Hindle and Riley commented that to adopt the course suggested by us would entail a double vote on each proposal, "a most curious and novel idea." On the contrary, we note that this has been standard procedure in the International Commission. The by-laws of the commission, Article IV, Section 1, provide that the commission's report to the congress shall include "(a) recommendations involving any alteration in

the Règles . . . but no such recommendation is to be reported, unless it has received:—(i) a majority vote of the whole Commission, that is to say ten (10) votes, and (ii) the unanimous vote of all Commissioners present at the meeting” (by-laws, revised 1939; essentially the same wording in the original by-laws adopted in 1910, cf. *Verh. VIII Int. zool. Kongr., Graz, 1910, 321.*) At various times, the procedure has been published in some detail (e.g., Stiles, C. W. *Zool. Anz.*, 1912, 41, 37; and *Ent. News*, 1929, 40, 329; Bolívar, C. *Conf. Reseñas cient. Soc. Españ. Hist. nat.*, 1929, 4, 165). Such articles served notice in advance of a congress of proposals for changes in the code, and zoologists were invited to send comments to any member of the commission.

The Commission sits, usually for one week, immediately prior to the meeting of the Congress. According to procedure, no proposition is considered unless it is submitted to the Commission at least one year prior to the meeting of the Congress. A preliminary informal vote on propositions precedes the meeting of the Commission, and no proposition is subject to discussion unless it receives a majority vote in this preliminary consideration. No proposition is reported to the Congress unless it receives the unanimous vote of the entire Commission present at the meeting.

(Stiles, C. W. *Ent. News*, 1929, 40, 332.)

(e) “Entrusting to ‘jurists’ the preparation of the text of the new code in ‘watertight legal language’”: Not challenged by Hemming or Caporiacco, and Hindle and Riley stated that “We certainly did decide . . . we would leave it to . . . a jurist [*a jurist?*] to translate these decisions and amendments into formal language.” Other comments called attention to the “special drafting committee” (Lemche and Spärek) or “editorial committee” (J. Chester Bradley).

Our statement was essentially a briefer wording of Secretary Hemming’s press release (*Science*, 1948, 108, 156): “Recognizing the highly technical problems inevitably involved in *the preparation of a substantive text* . . . [it was decided] that this task shall be entrusted to jurists. . . .” Further, the press release stated that “The text prepared by the jurists will be submitted to the members of the Commission for final approval, and the task of considering any drafting points which may emerge from the foregoing consultation has been entrusted to a special committee of three. . . .” We omitted mention of these arrangements because Secretary Hemming had stoutly maintained in correspondence (e.g., Hemming to R. C. Moore, *J. Paleontol.*, 1949, 23, 228) that the *only* object of the review is to ensure that the jurists’ text corresponds precisely to the decisions reached at Paris. In other words, it appears that this “final approval” by the commission can be little more than proofreading.

(f) “A complete reorganization of the commission . . .”: Not challenged by anyone.

(g) “Most of this was without advance notice to zoologists or to the commission”: Challenged by Hemming, Lemche and Spärek, Hindle and Riley, Caporiacco, Bradley. Considerable difference of opinion on meaning is involved here. It is a vital point to clarify.

Regarding advance notice to the regular commissioners, we cannot of course speak for them, but we had sufficient assurances to amply justify the point as we stated it. Can the secretary show that the commissioners knew and approved of the plans for rewriting the code? Did they approve the report on binary nomenclature? On the change from first reviser rule to page precedence? The report on secondary homonyms and that on infraspecific categories? Were these and other proposals before the commissioners for one year before Paris? Was there a preliminary vote by the entire commission on these and other amendments? Statements by the commissioners in the far-flung parts of the world, by Cabrera, do Amaral, Esaki, Pearson, Richter, etc., as well as from those closer home, as to whether these proposals and plans had been placed before them by the secretary well in advance of Paris and that the Paris revision was carried out with their full knowledge and consent, would be the only convincing answers.

It is pertinent here to note that the last twenty lines of Secretary Hemming’s second point are based on his statement that we contend that “matters of importance should be considered by the commission *only* by correspondence conducted between members of the commission during intercongress periods,” etc. We have searched our statement in vain for such a proposed limitation. We support the procedures prescribed in the by-laws of the commission: preliminary consideration by the commission for at least one year (Art. III, Sec. 2), a preliminary vote, and finally the formal vote (Art. IV, Sec. 1).

As for advance notice to zoologists in general, we agree that for amendments and rewriting of the code, there is no technical requirement for preliminary announcement. However, we point to the fact that it was commission practice to give such notice (cf. point d). Further, such a procedure seems eminently reasonable and desirable to keep zoologists informed and to allow opportunity for expression of views on pending proposals. We may perhaps suggest that such notice ought to be a requirement, in addition to the provisions already in the by-laws of the commission, and that all such provisions be faithfully observed.

Mr. Hemming visited the U. S. and Canada briefly in December 1947. From records kept during the meetings, it is estimated that slightly over 300 different individuals heard his discussions, though relatively few actually voiced opinions of their own. Rather detailed notes were taken by one of us during the meetings at the Smithsonian Institution and elsewhere. One of the main subjects emphasized by Secretary Hemming was a “new edition of the code,” with English and French versions on opposite pages, a history of the development of the code, and quotations from opinions arranged under the articles to which they refer. This was expected to be a volume of 300 pages, and to cost about two dollars, thanks to a subsidy from the Royal Society of London. Because of the considerable work that had already been done on it, the edition, it was said, could probably be issued within two or three months after the Paris meet-

ing. The report on this project was greeted with enthusiastic approval. Further, not only was it discussed by Mr. Hemming at open meetings, but he specifically outlined it at a conference with the secretary of the Biological Society of Washington, which deferred plans to reprint their well-known edition of the code because of the commission's project.

At no time in the hearing of any one of our group—and some member or members attended all meetings on Mr. Hemming's itinerary except Princeton and New York, where about a dozen zoologists in all were present—did he discuss rewriting of the code as carried out at Paris.

It has been made to appear that prior to the Paris meeting we were fully cognizant of the plans through personal contacts with Secretary Hemming, and even that we "freely endorsed those plans." This we deny. To maintain that we were "fully informed" and that we "freely endorsed" the plans is a truly profound misunderstanding.

It may also be pointed out that there was no reason for believing that the code was to be revised, for earlier published statements by the president and the secretary of the commission were in line with the plans for a new edition as outlined in the secretary's discussions in America:

(Jordon, K. *J. N. Y. Entomol. Soc.*, 1944, 52, 385.) "The International Commission have made arrangements to publish as soon as possible . . . an up-to-date edition of the International Code of Zoological Nomenclature."

(Hemming, Francis. *Bull. zool. Nomenclature* 1 [pt. 6], 1945, lxvi-lxvii.) He discusses a "forthcoming edition" of the International Code, with French and English versions on opposite pages. "During the year 1944, a substantial start was made with the preparation of the new edition of the Règles Internationales. . . ."

(h) "Neither the Commissioners nor the alternates at Paris had opportunity to study the voluminous agenda in advance of the meeting": Not challenged. We note that Secretary Hemming states that

. . . it will be obvious to anyone possessing any experience in the conduct of discussions regarding intrinsically difficult questions that the chance of obtaining a solution by correspondence is extremely remote, the only satisfactory procedure . . . being full and free discussion round the table.

We submit that it will also be obvious that success of such round table discussions depends greatly on a foundation of correspondence, study, and preparation by all participants. For "intrinsically difficult questions" we cannot highly regard the chances of obtaining satisfactory solutions by discussions on crowded agenda during long and weary hours without opportunity for preliminary consideration, study of the evidence, and conference with colleagues of diverse backgrounds and viewpoints, followed by calm reflection. With the appearance of the three volumes and 1,000 pages of agenda and minutes, zoologists can see for themselves the mass of material in such a short time at Paris.

In view of Secretary Hemming's lack of regard for the worth of correspondence, it is interesting to note in the

last paragraph of his letter that the Paris congress hoped that "reasoned statements" of views on amending or expanding the decisions taken at Paris would be submitted

. . . to the commission, so that those views might be considered during the present intercongress period with a view to the formulation by the commission of suitable proposals for consideration by the Copenhagen congress in 1953.

Is it unreasonable to maintain that this procedure could and should have been in operation before Paris also, and thus have been consistent with the by-laws, and with the traditional procedures of the commission? Is it not a better principle of construction to shape and fit the foundation stones with painstaking care, than to make haste to erect an imposing edifice with proviso for reworking the foundation as soon as the building is completed? Zoologists will recall that the present code was adopted only after a considerable period of study and submission to several congresses; ten years (1895-1905) elapsed between initiation of the project and final publication of the code.

Having now compared our summary of the facts with the comments, and believing that in no essential particular were we shown to be in error, we reaffirm the position taken in our previous statement.

It may be permissible at this time to comment on two charges that reflect on the Washington Group. (1) It was stated that in effect we condemn the commission and its secretary "unheard." On the contrary, we have had extensive correspondence with the secretary on the subject of the Paris meetings. If "unheard" is meant in the sense of publication, we may call attention to Secretary Hemming's press release after the Paris meeting, which has appeared to our knowledge in seven journals in five countries and three languages, including *Science* for Aug. 13, 1948; to Dos Passos in *Lepidopterists' News*, Feb. 1949; to Riley in *Lepidopterists' News*, June 1949; and to Hemming's letter to R. C. Moore, *J. Paleontol.*, March 1949. For our part, no comments about the Paris meeting had been published by the Washington Group until that in *Science* for Dec. 2, 1949.

(2) Mr. Hemming stated that we have "severely criticized" the introduction of certain changes into the code, and he later referred to our stand as being "tantamount to an uncompromising opposition to all reforms of every sort." However, it should be clear to everyone that we do not oppose reform *per se*, as can easily be shown from the published record (cf. *Science*, 1947, 106, 315; *Science*, 1948, 107, 166; *Science*, 1948, 108, 37). These publications demonstrate our awareness that portions of the code need study with a view to clarification or amplification. What we do question, and oppose, is the failure to utilize the normal procedures of consideration by the regular commission, and the haste with which decisions were made at Paris.

Our belief in the necessity and value of ample time for study and deliberation, and in the desirability of giving other zoologists full opportunity to express their views on definite proposals, is well illustrated by the procedure