SYMPOSIUM: CHARACTER WEIGHTING, CLADISTICS, AND CLASSIFICATION

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On Sunday morning, 30 December 1984, seven speakers and an audience of about 70 gathered reverently to consider the topic "Character Weighting, Cladistics, and Classification" in a symposium of the Society of Systematic Zoology organized and moderated by us. The symposium was not initially organized with publication in mind, and no major effort was put forth to wrench manuscripts from each speaker. Because only three papers were eventually submitted for publication, much of the flavor of the symposium and ensuing discussion is lost in printed form and it is important to explain the relationship of these papers to the symposium as a whole.

Papers were presented on the following topics, in the order specified: "Opening Remarks," by V. A. Funk; "Qualitative Weighting and Its Role in Character Analysis," by Q. D. Wheeler; "Should We Weight for Purposes of Classification?," by E. O. Wiley (University of Kansas, Lawrence); "Character Weighting: Who Needs It?," by Niles Eldredge (American Museum of Natural History, New York); "The Implications for Character Weighting of Rigorous Character Analysis, Prior to Cladistic Analysis," by Nancy A. Neff (University of Connecticut, Storrs); "Genetic Correlation and Independence of Characters," by H. Bradley Shaffer (University of Wisconsin, Madison); and "Perspectives on Character Weighting, and Concluding Remarks on the Symposium," by W. H. Wagner, Jr. (University of Michigan, Ann Arbor).

Our original intent in the symposium was to examine the role of character weighting in cladistic analysis and formal classification. Taken collectively, the speakers represented a good survey of some of the important issues involved in weighting, including theoretical underpinnings, genetic and developmental evidence, importance of empirical observations, and impact of weighting on systematic conclusions.

Beyond the aspects of weighting related to the selection and coding of characters, unless there is no homoplasy in a data set we all practice some form of weighting. We choose to use characters consistent with the emergent cladogram, explaining away conflicting ones as independent evolutionary events. Weighting, as an issue, has received relatively little serious attention for some time in the cladistic literature, in spite of a number of unanswered questions. What is the effect of intentional or unintentional weighting of some semaphoronts over others, as in the use of male or larval characters in entomology? How acceptable is the practice of equally weighting characters in a cladistic analysis? Is there any legitimacy for weighting characters as good or bad on the basis of their presumed ecological, functional, or adaptive roles? When can weighting logically be done? What criteria are acceptable in the weighting process? Can relative genetic, developmental or functional complexity be quantified in a meaningful way? And how can weighting be made more explicit in systematic research?

Participants in the symposium found it informative and provocative. Most of us were asking ourselves questions that were new or too seldom asked, and all of us gained perspective from the talks and audience discussion. Weighting can be harmless "noise" at best, and misleading and unwarranted at worst. But weighting is an unavoidable issue for all of us. Al-

though the papers that follow by Wheeler, Neff, and Shaffer are a slim shadow of the symposium proceedings, they at least raise some of these lurking, unresolved questions that we have been speaking about.

We suggest it is in the interest of cladistics and formal classification to pursue their answers more diligently.