Paleontology and Phylogenetics: A Response to Bretsky

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I do not believe, as does Dr. Bretsky (1975): (1) that I implied (Cracraft, 1974) that the evolutionary systematic model of phylogeny reconstruction and classification was "crystallized for all time" by Simpson and Mayr, (2) that paleontologists have *always* recognized the discordance of stratigraphic sequences versus actual phyletic events, (3) that paleontologists have long conceptually recognized the importance of cladistic relationships and the methods to obtain them, (4) that fundamentalist diatribes have anything to do with paleontology's reluctance to question the implications of phyletic gradualism, (5) that it is odd to accept phyletic gradualism if one attempts to recognize ancestors and their descendants, (6) that "the allopatric model permits us to infer genetic continuity among similar species differing in only a few characters . . .," (7) that we can recognize "intermediate steps represented by *real* taxa in a ancestral-descendant sequence," (8) that the literature on phylogenetic systematics presents hypothetical common ancestors "as a sort of lowest common denominator of presumably plesiomorphous states" and that, somehow, these "attain a greater reality in the minds of their derivers than is granted to the admittedly very incomplete evidence furnished by actual fossil organisms," (9) that it makes much sense in the process of phylogenetic reasoning to consider if "*hypothetical* ancestral taxa may have been *literally* inviable," (10) that there is a tacit assumption in phylogenetic systematics "that an organism is composed of a *finite* number of *uniquely decomposable characters* which can be *added up* in some operationally specifiable way *to give a classification*," or (11) that the allopatric speciation model can be regarded "as a synthesis of the antithesis of genetic continuity and taxonomic discontinuity, a synthesis which permits us to recognize the gradual nature of transformations of ancestor into descendants and yet to have a concrete, nonarbitrary criterion for placing separations within the genealogical sequence." But it is noteworthy to have on record the advocation of the above ideas by someone recently schooled in the modern methods and ideas of paleontology.

I find it difficult to determine precisely what Dr. Bretsky agrees with or objects to in my original article (Cracraft, 1974) for (1) she repeatedly confuses, like nearly all evolutionary systematists, the problems

of phylogeny reconstruction with those of constructing classifications, (2) at times she seems to defend strongly phyletic gradualism without grasping the fact that neither I nor Eldredge and Gould (1972) have ever denied the plausibility of phyletic gradualism, only that it is a general explanation for species evolution, and (3) despite her arguments regarding (2) she seems to prefer the allopatric speciation model to phyletic gradualism and cladistic analysis to alternative methods of obtaining phylogeny. I suspect her differences of opinion *vis-à-vis* my article lie with her embracing evolutionary systematics (*e.g.*, Bretsky, 1971) rather than with my few comments about paleontology, but unfortunately the substantive issues of the controversy—*i.e.*, reconstructing phylogeny on the one hand and constructing classifications on the other—were ignored.

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