

Play Ball

To the Editors:

Being a huge baseball fan, I enjoyed your article "Predicting a Baseball's Path" (May–June) by A. Terry Bahill, David G. Baldwin and Jayendran Venkateswaran. I thought *American Scientist* readers might like to know what Baldwin looked like when he played major league baseball. The image on the back of Baldwin's 1969 baseball card has always stuck with me, and it tied in nicely with another article, "Dinosaurs as a Cultural Phenomenon" (*Marginalia*, also May–June) by Keith Stewart Thomson. From Baldwin's record, he knows firsthand just how difficult it is to hit a baseball at the major league level—he was 1 for 15 in his career as a hitter.

Ron Vasile
Downers Grove, Illinois

Cracking the Code

To the Editors:

Two items in the July–August issue addressed the PhyloCode, a system for governing the names of biological taxa (taxonomic groups) based on evolutionary principles. As a co-author of that document, I would like to clarify points raised in both articles.

In her *From the President* message, Lynn Margulis states that the PhyloCode uses a conceptually flawed topology of evolutionary trees. The PhyloCode, however, is not based on evolutionary trees but on definitions that specify the references of taxon names in terms of common ancestry relationships. Such definitions can be applied in the context either of trees or of more extensively connected graphs, which are necessary to represent evolutionary fusions. In the latter case, they result in names being applied to partially overlapping groups. Consequently, names governed by the PhyloCode would do a better job of representing the symbiogenetic origins, as Dr. Margulis advocates for certain taxa,



Topps DAVE BALDWIN

HT: 6'2" WT: 200 THROWS: R
BATS: R BORN: 3/30/38
HOME: TUSCON, ARIZONA

DAVE MAJORED IN ZOOLOGY AND ANTHROPOLOGY AT THE UNIVERSITY OF ARIZONA

Last year Dave was the Senators' #2 fireman and was credited with 5 saves! The tall righthanded hurler began his pitching career with Williamsport in 1959. His finest minor league campaign was in 1965 when he won 15 out of 20 decisions for Burlington and Hawaii. In one of Dave's last starts, he pitched an 11-inning shutout.

MAJOR LEAGUE PITCHING RECORD											
YEAR	TEAM	LEA.	G	IP	W	L	PCT	SO	BB	ERA	
1966	Washington	A.L.	4	7	0	0	.000	4	3	3.86	
1967	Washington	A.L.	58	69	2	4	.333	52	20	1.70	
1968	Washington	A.L.	40	42	0	2	.000	30	12	4.07	
Major League Totals			3 Yrs.	102	118	2	6	.250	86	33	2.67

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David G. Baldwin, one of the authors of "Predicting a Baseball's Path" (May–June), had firsthand professional experience with the game. His 1969 baseball card (above) features a memorable dinosaur cartoon on its reverse side. (Image courtesy of Topps.)

than do the traditional taxonomic and nomenclatural systems. As a unified code, the PhyloCode would also solve the problem pointed out by Dr. Margulis concerning organisms that are neither plants nor animals but have been given different names under the traditional botanical and zoological codes.

In "Attacks on Taxonomy" (*Science Observer*), Roger Harris aptly describes the controversy surrounding the Phylo-

Code. He states, however, that the system of nomenclature represented by the PhyloCode is meant to replace the system developed by Carl von Linné (Linnaeus). The system of nomenclature that the PhyloCode is meant to replace was developed roughly 100 years after the time of Linnaeus and ties names strongly to taxonomic ranks. The PhyloCode represents a return to an approach more similar to that adopted by Linnaeus and other early naturalists in that names are more strongly tied to taxa (now conceptualized in evolutionary terms) than to ranks. Nevertheless, abandoning the Linnean hierarchical ranks is not a core proposition of the PhyloCode, which does not prohibit the use of ranks but only replaces their function in specifying

the references of names with methods based on evolutionary principles.

Kevin de Queiroz
National Museum of Natural History
Smithsonian Institution
Washington, D.C.

Dr. Margulis responds:

I laud Dr. de Queiroz's expertise and the PhyloCode's desire to stabilize the names of taxa when their associated ranks change. Were we to know common ancestry relationships

among a majority of species, definitions that specify the references of taxon names might be properly descriptive.

However, we know very few of the estimated 30 million species of extant organisms. Therefore, the ability to employ partially overlapping taxonomic groups does not solve any problems of names and ranks. Rather, it will likely generate more esoteric confusion and grant license to those who yearn to replace groupings of messy live beings with neatly quantifiable computer categories. For this reason, I reiterate the need to open the acute problem of the naming and evolutionary classification of all life to the broader research community that Sigma Xi represents.

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