

ball interesting, although he still leaves me wondering why modern teams punt rather than place kick on free kicks from the twenty-yard line after a safety. After reading Cliff Frolich's article on the discus, I understand why discus throwers like a head wind.

While I generally found the analyses of running and jumping (where physiology and physics mix) interesting but unconvincing, the article on animal locomotion by the eminent physiologist Knut Schmidt-Nielsen, which summarizes much of his great work, is a treasure.

The book also includes articles on sports that I do not know well, such as karate, skiing, fly casting, diving, sailing and others. I read them uncritically but appreciatively. The 20% of the articles that are fundamentally pedagogic did not interest me much, but some readers might find them useful. And with most serious readers of sports physics having access to personal computers that run BASIC, for my taste there are too many analytic calculations that use dubious approximations where simple numerical techniques would do better.

My major criticism of this collection, however, is that it contains too many items that would best have been dropped. Here I would start with a statement by the editor that underhand foul shooting in basketball was "all female" and "virtually unheard of in men's basketball." This statement would have astonished basketball players such as Nat Holman of the original Celtics, Johnny Wooden, an All American at Purdue in 1930, and even Hank Luisetti, an All American at Stanford in the late 1930s. Before 1950 everyone, boy or girl, shot free throws underhanded, while today everyone—man, woman or person—shoots free throws overhanded.

The book would not have suffered in the slightest if the articles on fielding a fly ball in baseball and shooting basketballs had been left out. The note on why the axis of a spiraling football tends to line up with the direction of the ball's motion makes absolutely no sense to me. And the article showing that backspin on a baseball increases the distance it travels is an example of the misleading power of a reasonable answer to a wrong question. In fact, the many home runs hit by uppercut sluggers such as Reggie Jackson have less backspin than the fewer home runs hit by level swingers such as Wade Boggs. Indeed, one can argue that the ball hit more squarely with less back-

spin will go farther.

If you know some physics and are interested in sports, by all means get a copy of *The Physics of Sports*, but, *caveat lector*, don't believe everything you read in it.

ROBERT K. ADAIR
Yale University

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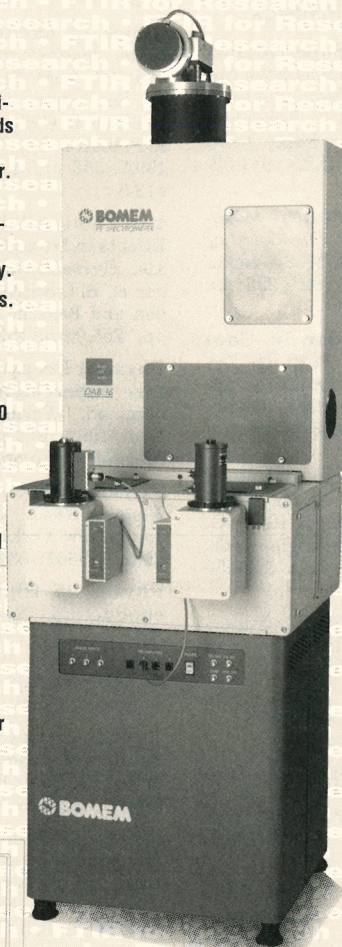
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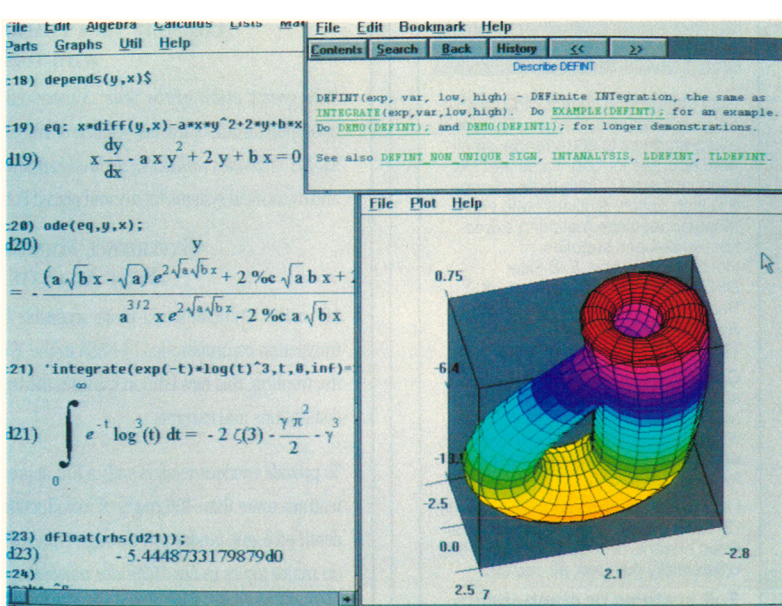
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