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SCIENCE, which is now combined with THE SCIENTIFIC MONTHLY, is published each Friday by the American Association for the Advancement of Science at National Publishing Company, Washington, D.C. The joint journal is published in the SCIENCE format. SCIENCE is indexed in the *Reader's Guide to Periodical Literature*.

Editorial and personnel-placement correspondence should be addressed to SCIENCE, 1515 Massachusetts Ave., NW, Washington 5, D.C. Manuscripts should be typed with double spacing and submitted in duplicate. The AAAS assumes no responsibility for the safety of manuscripts or for the opinions expressed by contributors. For detailed suggestions on the preparation of manuscripts and illustrations, see *Science* 125, 16 (4 Jan. 1957).

Display-advertising correspondence should be addressed to SCIENCE, Room 740, 11 West 42 St., New York 36, N.Y.

Change of address notification should be sent to 1515 Massachusetts Ave., NW, Washington 5, D.C., 4 weeks in advance. If possible, furnish an address label from a recent issue. Give both old and new addresses, including zone numbers, if any.

Annual subscriptions: \$8.50; foreign postage, \$1.50; Canadian postage, 75¢. Single copies, 35¢. Cable address: Advancesci, Washington.

Taxonomy of Research

October 9 was the publication date for *Symposium on Basic Research*, the report of a symposium held last May under the joint auspices of the Alfred P. Sloan Foundation, the National Academy of Sciences, and the AAAS. The very title of the symposium raises the problem of the meaning of the term basic research. Trouble starts when someone asks for a definition, for while one person can define basic research, two are likely to disagree.

This situation arose at the Symposium on Basic Research. Various definitions were offered; all were objected to. It soon became apparent that it would be very difficult to frame a definition on which all could agree. Some participants thought the effort was worth while and should be made; others took the position that the difficulties were too great. The latter attitude prevailed, and the effort was dropped.

The discussion reminded us of an article in the *Research Review* of the South African Council for Scientific and Industrial Research, and sent us hunting back to the June 1958 issue in which G. M. Dreosti optimistically wrote that "it is high time that definitions be agreed upon among scientists, and officially adopted," and in justification of the need, cited this list of terms: "academic research, ad hoc research, applied research, basic research, borderline research, developmental research, directed research, experimental research, theoretical research, exploratory research, industrial research, non-directed research, pot-boiling research, pure research, technological research, long-term research, short-term research," and added that there were many more.

This is a forbidding list if one attempts to distinguish each term from all the others. But the list is useful, for it shows clearly that the terms differ along several dimensions. Perhaps some day an administrative Linneaus will bring taxonomic order into the array. Perhaps a semantic factor analyst will develop a multidimensional classification in which each kind of research fits neatly into its own proper pigeon-hole.

Perhaps more likely is the dismal possibility that the word *research* will become useless. H. K. Nason recently wrote in the *Bulletin* of the American Society for Testing Materials, "In words we have discovered a fertile area for application of our national mania of faddism, and already many useful old friends have met the ultimate fate to which faddism always leads—exhausted oblivion. *Research* is the latest discovery of the word hucksters, and already this venerable and useful old term is being sucked dry." There is little protection from the word hucksters, but scientists themselves need not be guilty of using all the variants on Dreosti's list. As C. V. Kidd pointed out in *Science* (13 Feb. 1959) there are two major reasons for distinguishing between basic research and applied research (we can get along without the other terms): In explaining basic research to nonscientists precise definition is not needed to convey "a sense of the nature of basic research, a feeling for its importance, and an appreciation of the motives and working conditions of scientists." In budget classifications so many other factors are involved that common consent or some arbitrariness of definitions must be relied upon, but surely a short list of terms is sufficient.

Instead of futilely trying to define a long list of terms, the better counsel would seem to be to relax about definitions and to concentrate on the quality of the research, regardless of its setting or purpose. This suggestion makes us note that "good research" was not on Dreosti's list. Don't ask us to define that one either.—D.W.