

physicists is needed. In view of the importance of the matter, it is hoped that a considerable number of these will be persuaded to give some time to thinking about the problem, making suggestions of their own, and reviewing suggestions and proposals of others. The pressures toward even a partial solution are so great that documentation specialists will do the job without the guidance of physicists if the physicists evade this obligation. The documentation specialists have a very valuable contribution to make, but since they are not well versed in the ways of physics, their unassisted effort is not likely to produce the optimum result.

A first step might be for the various societies to appoint representatives to meet for a discussion of a possible program. Since *Physics Abstracts* is already planning to make changes in its indexing system and is looking to the American physics community for suggestions through the American Institute of Physics, the first phase of the program might be pointed toward the *Physics*

Abstracts index. However, the desirability of a comprehensive system should not be lost sight of. Perhaps discussion with the *Bulletin Signalétique*, *Physikalische Berichte*, and *Referativnyi Zhurnal* should be planned at an early stage.

Much effort and money will be needed for success, but surely the goal is in the interest not only of physics but of the orderly and useful development of science as a whole.

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4. DOCUMENTATION THEORY IS NOT TRIVIAL

If physicists are to create useful indexing and classification systems within various branches of their science for purposes of reference and data retrieval, more than knowledge of physics must be involved in their efforts. Many of those presently concerned with data compiling and abstracting appear to feel that their experience qualifies them for effective work in indexing and classification. They tend to regard the literature and theory of documentation as "mere librarianship," and somehow therewith as trivial.

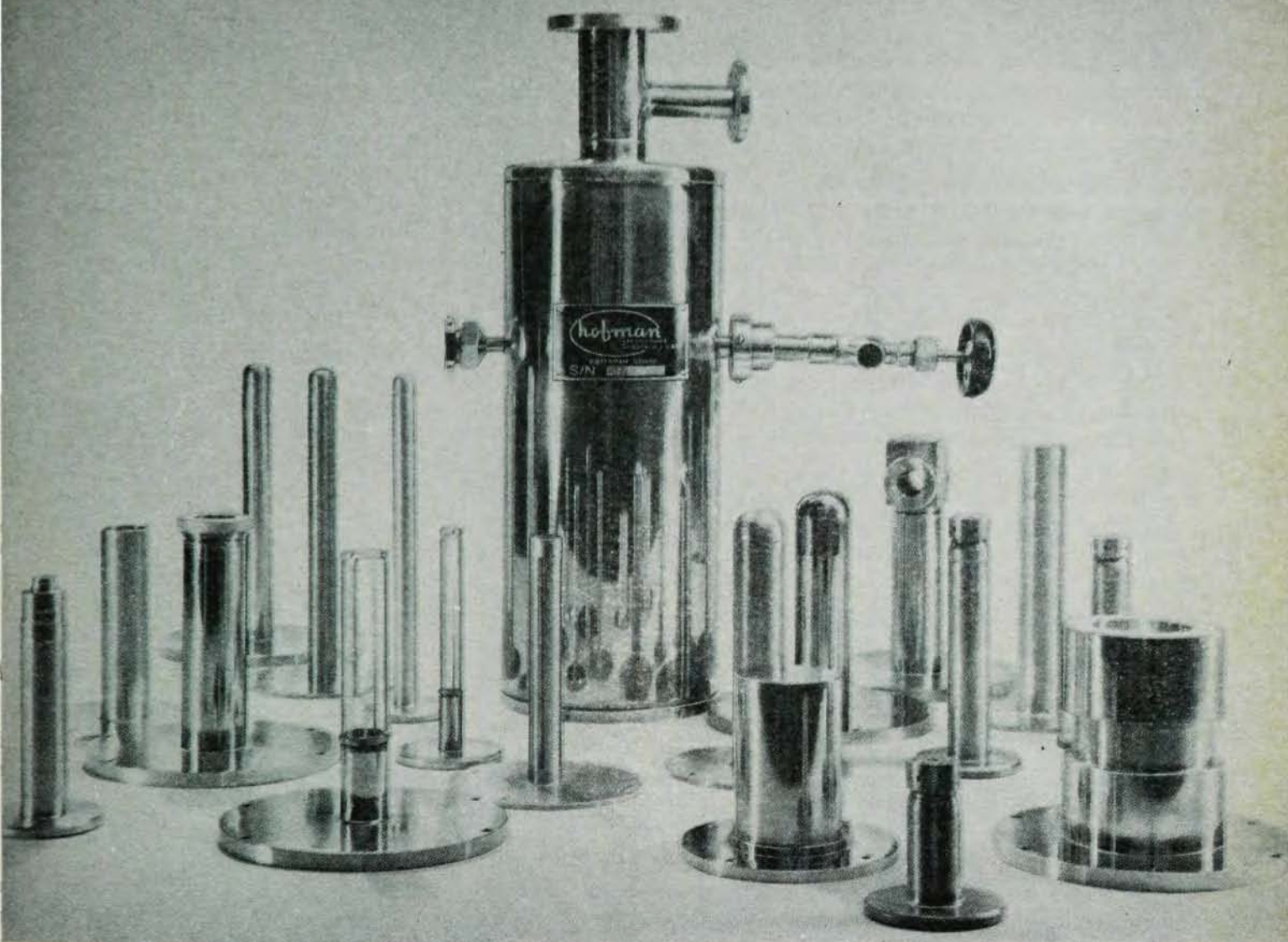
Anyone who has attempted to set up a hierarchic thesaurus of index terms, in any limited branch of science, should know that this is a most difficult task. To develop a system of such thesauruses for all branches of physics, uniform in depth and minimizing overlapping, with a common set of relators, is a massive problem. One needs only to familiarize himself with indexing and classification efforts which have been made in other basic and applied sciences, and their shortcomings in practice, to recognize that competence in the science concerned is not alone a qualification for success.

The preceding proposal, which the authors have very kindly permitted me to read before its submittal for publication, deserves serious attention and will no doubt receive such attention because

of the very high scientific competences of these authors. With respect to documentation, however, and the procedure that is recommended for encouragement of interest among physicists, I believe it is open to question.

"In the past scientists have not concerned themselves with indexing problems," write the signers of this letter. This is not true, except by unjustifiable ad hoc definition: Anyone who concerned himself with indexing or classification, which have long been matters of profound importance to scientists whether or not many of them recognized the fact, was apparently no longer considered a scientist.

The proposal does not distinguish between indexing, classifying and data compiling, and could lead the unwary into the belief that experience in one of these activities develops or implies competence in the others. It maintains that, at the outset at least, there is no real need for uniformity of indexing or classifying, from one branch of physics to another. It seems insensitive to the fact that much of the most interesting physics occurs near if not at the interfaces between branches of physics and between physics and other basic and applied sciences. Documentation and retrieval are likely to be most important, and certainly most difficult, in these border fields and to sci-



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entists looking from one field into another. Furthermore, these borders are continually shifting. One could argue with more assurance and justification that uniformity and consistency are the very qualities that are most lacking in documentation throughout science and are of very high importance. Finally, documentation seldom can deal only with quite contemporary information. The documentalist must dig out past—sometimes long past—knowledge, and must also in some degree prepare his system for future scientific development.

The authors “imagine” that articles in scientific journals will be accompanied by indexing terms: which is a long-standing idea already functional in some sciences; and if authors are themselves to assist in assignment of indexing terms, which is also no new idea, very well considered hierarchic thesauruses—which must of course be open-ended to permit introduction of new index terms—will be essential to authors.

Physicists are already concerned with physics. What we require are physicists who are willing to concern themselves with the theory of documentation and not merely with its practice in some quite limited form. With all due respect for the member societies of the American Institute of Physics, we cannot at present merely hope to appoint such people because today we can identify all too few, and even if some very able physicist-documentalists are pointed out to other physicists, few are able properly to evaluate their achievements.

There is of course another aspect of physics documentation that it would be unscholarly although perhaps gentlemanly to ignore in the present discussions. The publication program of the American Institute of Physics is unsurpassed throughout the world of science. Outside of the publication program, the Institute's activities in documentation have not been notable, and participation of the physics community in documentation has not been adequately sought and on occasion has been spurned. These chickens are now at roost. A seri-

ous project in classification in physics has just been initiated within the Institute. It deserves and greatly needs the support and the participation of physicists willing to concern themselves with documentation principles. There is a serious project in progress, under excellent leadership, for improvement of *Physics Abstracts*. This too would greatly profit from participation of physicists who are also students of documentation theory.

As physicists we can only commend the authors of the preceeding proposal for emphasizing the lagging nature of documentation in physics. I argue chiefly with the casual attitude displayed toward documentation as a scientific discipline in its own right, and against the solution immediately proposed: that physicists can be appointed by societies, effectively to study and hopefully to solve our information problems.

Should we not rather proceed on another tack? Other scientific societies have divisions, composed of voluntary members, concerned with information and documentation within their sciences. Is it not time for physicists interested in documentation to organize a Division for Documentation in the American Physical Society? Members of such a Division would be required to be members of the APS, and officers would have to be Fellows. The affairs of the division would thus be in the hands of physicists. *Of course* knowledge of physics is essential: let us not argue the obvious; I maintain only that for physics documentation it is not enough.

Information science includes profound and fascinating problems. Physicists interested in or even unwillingly driven toward physics documentation should know of them. Classification and indexing, and computerized documentation, are not at all trivial matters. Let us approach them, as we do physics, with curiosity and a willingness to learn something.

Ray Pepinsky
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5. AN ACTION PLAN FOR INDEXING

To supplement the considerations in the two preceding letters, I should like to point out that the AIP Documentation Research Project benefits greatly from the advice of its advisory committee, composed mostly of working physicists who have

some interest in documentation problems. Its members are Paul Camp, chairman, R. T. Beyer, F. G. Brickwedde, M. M. Kessler, Gilbert King, J. B. H. Kuper, Jerry B. Marion, K. G. McKay and S. Pasternack. A nuclear physicist has been a regular