

Anyone actively working in the field in any country of the world is eligible. No restrictions are imposed on the nature of the communications. No editorial prerogatives are exercised. The communications distributed have the status of private communications and can be quoted as such in the literature.

The exchange has nearly 150 members here and overseas. Each member may recommend for membership any individual who is an active worker. In 2½ years the group has distributed over 90 different communications from its members, the number in the second year being about three times that in the first year. These have included preprints of articles in press, discussion of points of difference among workers in the field, papers on methodology, and reprints of talks given at symposia or lectures.

The exchange makes it possible for all members to be fully informed in record time of all developments in the field. It insures members against unfair practices because everyone is fully aware when a particular idea or experiment is presented. The important priority is the one assigned by one's colleagues. Where every colleague is given full opportunity to judge for himself the origin of a discovery from the dated records, the risk inherent in the dissemination of privileged communications is negligible.

Argument, which should play a vital role in science, is all but squeezed out of contemporary journals. The inevitable long delay in publication, coupled to the distaste of editors for polemics, has effectively eliminated argument as a public instrument of scientific progress. Anyone in the exchange can criticize prevailing views, and speak out as the mood and facts dictate. Several significant problems which have never been aired properly, if at all, in the scientific journals have been the subjects of incisive communications sent through the exchange. Bringing controversy into the open may well become one of the exchange's most valuable features.

Even with the most enlightened editorial policy no journal can escape completely the danger that worthwhile ideas may be ambushed by some overzealous or overopinionated reviewer. The Information Exchange provides an outlet for anyone who feels choked by editorial intransigence. Admittedly, the lack of editorial discipline and restraint could open the door to

a flood of rubbish, but actually pot-boilers are conspicuously absent from the communications offered through the exchange; the certainty that the experts in the field will look with disfavor on a paper of poor quality is a restraint which achieves the same net effect as editorial supervision, without the inherent risk of censorship. Moreover, an initial readership of experts could well stem the flood of inferior material to the journals.

The investigator working at the border line between two disciplines runs the risk that his work will be published in a journal not readily available to an important segment of his potential readership. This particular problem is completely solved by the exchange. The esoteric "journal" comes to the reader—not the other way around.

The working of the exchange is simple. Communications, typed on ordinary bond paper, are sent to the office of Errett Albritton of the National Institutes of Health (the originator of the experiment and its guiding spirit), where they are photocopied and copies are mailed to each member of the exchange. There are no mailing or service charges to the members. As chairman of the group I have the responsibility of ensuring that applicants for membership are qualified and that innovations be introduced whenever necessary.

Plans are afloat to set up additional exchange groups in biochemistry, still on an experimental basis. How far the experiment can be and should be carried over to other biomedical sciences will depend upon the initiative of workers within these areas and the interest of the National Institutes of Health and other agencies.

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Grants to Nonconformers

The letter [*Science* **142**, 11 (4 Oct. 1963)] on the reasons why Koch and Jenner would be refused a research grant in our day is much too true to be passed by without comment. Surely something must be fundamentally wrong in our present system of grant allocations if none of us seriously doubts that applications of such scientists would be rejected.

The problem is by no means a simple one. Even large material resources can be quickly exhausted if research grants are given indiscriminately. Choices have to be made. Phantasts have to be distinguished from real geniuses without our really knowing how to make this distinction before they have been given an opportunity. On the other hand, a committee of even the best specialists will of necessity be biased in ways of thought which are in vogue. They may differ from each other because each of them may have a special point of view, but a point of view differing from those in mode at the time will arouse interest only in the very best of them. And not many of the very best will sit on the committee. Nonconformists will have very small chances to win understanding, though many of the really major advances in science come from nonconformists.

A step toward improving the situation could be as follows. Naturally, committees dealing with grant applications should be formed of scientists of high scientific and moral reputation. As far as possible, this policy has already been adopted. However, decisions should not be bound to the majority vote of the committee. Each member should have the right to act independently on a small number of applications after due consultation with his colleagues. If discussions with them do not convince him that an application which he thought a good one is unworthy of help, he could help it through singlehandedly, knowing that his resources to act in this way are limited and that he must use them only for the best.

Thus the uniforming effect of the majority of the committee would be neutralized and the spectrum of applications approved would widen appreciably. A committee of strong scientific personalities could perpetuate differences in scientific approach instead of giving in to colorless compromises in favour of subjects within the domain of well-behaved normality. And ingenious outsiders could sometimes have a chance in their handicapped race against overspecialized colleagues who possess the academic degrees so overestimated in our scientific communities, which are becoming mandarinized at an alarming rate.

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