view of the virtues of rotation in office and recommends that a committee member's service be limited to a 3-year term.

In the matter of recruitment, the study group recognizes that the "telephone method" and the buddy system are dominant methods of selection and urges that agencies find new ways of identifying well-qualified nominees. They suggest, for example, the "snowball technique," which, according to the report, "would start with nominations solicited from a relatively few trusted nominators."

> The nominees themselves would then be asked to suggest other colleagues in specified categories for advisory service, and so on, in chain-letter fashion. The process might begin with 20 carefully picked nominators, and a multiplying factor of five might be used. Two or three successive stages would yield perhaps 1000–2000 unduplicated nominations. This could be done in various sectors of special interest: e.g., industry, younger people, emerging fields. Such a method would take full advantage of peer judgments and might well turn up advisory talent which would escape more conventional searches. It would not obviate the need for boldness on the part of sponsoring organizations in appointing a few relatively unknown people.

Other innovative ideas floated by the study group are for "self-nominated" committees, meaning that the proposed committee assignment, along with the qualifications for committee membership, would be made known to the scientific community. People would then be invited to nominate themselves or their colleagues. Selections would be made in the standard way. The study group also suggests that the sponsoring agencies might experiment with appointing duplicate committees to tackle the same task and then compare results.

Potentially squalid aspects of advisory-committee life are touched on only glancingly, as in the following excerpt:

> On the negative side, the possibility of conflict of interest arises when some members of committees reviewing technical proposals represent institutions or companies whose operations may be affected by the proposed actions. Organizations that sponsor committees must be acutely sensitive to this issue and weigh carefully both the composition of the committee and its terms of reference. In addition, the question of the proper mix of "insiders"—those who are close to the problem—and "outsiders" deserves far more consideration than it has rereceived.

The possibility that some members of study groups trade on their positions to snare grants for themselves or their colleagues, or that they appropriate research ideas from incoming applications is not directly acknowledged in the suggested ethic of service, which emphasizes that a scientist should agree to serve on a science committee only if he is prepared to invest the often considerable amount of time and energy required.

On the question of whether qualified younger scientists are increasingly unwilling to serve in the science advisory apparatus, the study group comments that they found the problem to be "less severe than we thought."

The evidence for this conclusion seems rather sketchy. The report notes that efforts to stimulate scientists' interest in work on advisory bodies has met with some success and cites experience with the ARPA-sponsored Defense Science Seminars in the summers of 1964, 1965, and 1966. These seminars, says the report, represented a frank effort to interest competent younger scientists in the full range of defense-related technical problems. About 30 scientists from ages 30 to 35 were involved in month-long sessions each year. A follow-up inquiry in 1970 showed that some 40 alumni of the seminars had subsequently been active in at least one Defense Department advisory activity and that only a single scientist indicated less interest in participating in Defense advisory activities.

More light might be thrown on these questions if the advisory process were an area of research more frequented by social and behavioral scientists. Work in this area is difficult, in part because confidentiality is traditionally one of the conditions that nongovernmental advisers insist on and because records of proceedings of advisory groups are usually incomplete. But even evidence on the effectiveness of advisory committees—the extent to which their advice is actually followed—is extremely meager. The study group notes the gaps and urges federal agencies and foundations to support more research on the advisory process.

The practical problems besetting the science committee system are to a significant degree generational. The sponsoring agencies have depended mainly on a group of scientific advisers whose relationship with the government was shaped during World War II and the early cold war era, and who accepted the value-free premise that the committee system had reciprocal advantages for the government and for the scientific enterprise. Many of these advisers have reached emeritus age or are past their prime as technical advisers. At the same time, the number of potential advisers among younger scientists has increased so tremendously that the old ways of identifying and selecting advisers no longer work. In addition, the experience and attitudes of these younger scientists unquestionably differ from those of their elders.

The report is no doubt correct in saying that the reluctance of younger scientists to serve in advisory posts should not be exaggerated. But a critical spirit is growing. And while a genuine effort seems to be afoot to make the science committees more fairly representative, there remains the problem of attracting increasing numbers of able young scientists to an advisory system that asks them to give technical advice, often in sensitive areas such as defense, without offering them significant influence over the uses to which their expertise is ultimately put—in effect, to give advice without consent.

—JOHN WALSH

RECENT DEATHS

John N. G. Finley, 72; former director, George Mason College, University of Virginia; 27 November.

John W. Frey, 82; professor emeritus of geology-geography, American University; 13 December.

John W. S. Griemsmann, 55; professor of electrophysics, Polytechnic Institute of Brooklyn; 16 December.

Harold Gunderson, 58; professor of zoology and entomology, Iowa State University; 14 December.

Howard J. Hassell, 66; professor of engineering, University of Utah; 24 December.

E. Harold Hinman, 67; former dean, School of Medicine, University of Puerto Rico; 25 December.

George R. Johnstone, 83; professor emeritus of botany, University of Southern California; 12 December.

Elon G. Salisbury IV, 91; former professor of mathematics, University of Maryland; 15 March.

Hans Simons, 78; former president, New School for Social Research; 28 March.

Lee N. Starker, 49; manager, science information services, Warner-Lambert Research Institute; 20 March.