land canal that would still contain freshwater for most of its route. There seems to be no reason why we cannot have a canal that could accommodate ships of any size, yet still maintain the freshwater barrier that is so important.

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What Makes a Leader?

In the discussion of “Relevance in testing” by W. W. Turnbull, Devaney (Letters, 23 Aug.) suggests, “Relevance should pertain to the 50-odd years after college, not to the 4 to 8 years in college.” He reaches this conclusion from his observation that a cross section of American leaders reveals only a small percentage of “straight A” students.

The weakness in this argument is the necessary assumption that current American leaders are the best suited to the job of leadership. In an absolute sense, this weakness cannot be overcome since comparative experience will never be available. One can speculate in this direction, however, and might conclude that the decision as to what is relevant in testing requires a determination of ends and objectives. If leadership is involved in a consideration of relevance of testing, the criterion should be success in leading, not simply attainment of a position of leadership.

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Japanese View on Defoliation

In 1965, the U.S. Armed Forces in South Vietnam began “defoliation operations” which strip the jungle with gasoline and napalm bombs after spraying large quantities of herbicides. According to the official U.S. announcement, these herbicides, including 2,4-D, 2,4,5-T, picloram, and cacodylic acid, were sprayed over a total area of 965,000 acres (390,530 hectares) (1). In addition, the United States announced on 12 May that the budget for “defoliation operations” would be increased by 24.9 percent in fiscal year 1969 and that it planned to spray about...
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Mathematics: Pro Bono Publico

The Council of the American Mathematical Society at its meeting on 28 August asked me to forward the following comments to Science:

Many mathematicians were dismayed and shocked by the excerpts of the speech by Donald Hornig, the Presiden-
tial Science Adviser (19 July, p. 248). His . . . comments about mathematics and mathematicians are . . . uncalled for. Implicit in Hornig's remarks about vacations on the beaches of Rio or the Aegean Islands was a thinly veiled attack on Stephen Smale. The allegations against Smale were adequately disproved by Daniel S. Greenberg in his articles in Science on the Smale-NSF controversy (News and Comment, 15, 22, and 29 Sept.; 6 Oct.; and 3 Nov. 1967).

Hornig singles out mathematics in suggesting that the scientific community is one “which, insisting on its purity, will not deign to communicate with the public and justify itself. . . .” On the contrary, many branches of science have recently prepared extensive reports on their disciplines. In particular, the mathematical community, through the Committee on Support of Research in the Mathematical Sciences (COSRIMS), has just completed a comprehensive report, designed for the public and Congress, on the current problems of mathematical research and their relations to the national goals. Aware of the ever-increasing need and utility of mathematics in everyday life, this same community embarked on large programs (beginning with the “new math”) to improve mathematical education in the elementary and secondary schools. Surely Dr. Hornig is aware of these, and other, steps to communicate with the public.

Government support has been a vital element in the rapid development of American science. Support by the NSF and other government agencies has in 10 years tripled the annual number of Ph.D.'s in mathematics. These young mathematicians have made a variety of profound and original discoveries ranging from those with direct practical applications (such as the unexpected use of logic in computing machines) to theoretical results which have attracted international acclaim (such as the work of Smale in dynamics and of Cohen in foundations). The future does involve a financial crisis which may have tragic consequences for the next generation of scientists and mathematicians. Hornig's statement is hardly a responsible contribution to the public discussion of this crisis or to the closing of the gap between working scientists and those in government concerned with science.

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