Letters

Southeast Asian Policy

We of the Molecular Biology and Virus Laboratory of the University of California (i) condemn the current U.S. policy and military activity in Southeast Asia as unwise, immoral, and dangerous; (ii) urge members of Congress to use every legal means to resist the implementation of this policy; (iii) urge immediate withdrawal of all U.S. troops and assistance from Southeast Asia; and (iv) express our intention to support only those candidates for elective office who subscribe to the above policies.

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* In addition, the letter included 110 cosigners.

Postscript

An important paper by R. G. Giovanelli [*Mon. Notic. Roy. Astron, Soc.* **127**, 461 (1964)] came to my attention too late for inclusion in my article "The case for a hierarchical cosmology" (27 Feb., p. 1203). Its aim is to construct models for "a self-perpetuating universe on a statistical rather than a steady-state basis." Further work on multiple clustering within a "big-bang" model has been described in a 1970 dissertation at the University of Texas by J. Wertz and shows how many features of the classical models can be preserved and combined within the hierarchical concept.

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Floating Gobs of Oil

In "Petroleum lumps on the surface of the sea" (10 Apr., p. 245) Horn, Teal, and Backus describe a scarcely new phenomenon. One afternoon in the summer of 1928 Avalon Harbor, Santa Catalina Island, was covered by floating gobs of stiff oil. The U.S. Navy aircraft carrier *Saratoga* had cleaned its bilges or oil bunkers in the Catalina Channels. The Wrigley Company then had to mobilize its labor force and small boats to skim these lumps off the harbor and remove them from the beach so that its tourist guests could swim.

Since that time I have frequently seen tarry patches on beaches and rocky shores. These are often so abundant as to make the beaches unpleasant for sunning and swimming. The problem has been considered so serious that in 1957 the American Petroleum Institute commissioned a comprehensive survey of the situation on the Atlantic Coast. The report of the survey is very instructive, both as to the magnitude of this sort of pollution, and as to the fate of the oil that is cast ashore (*1*).

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Reference

1. J. V. Dennis, "Oil Pollution Survey of the United States Atlantic Coast . . ." (American Petroleum Institute, Washington, D.C., 1959).

Grecian Concept of Entasis

According to Richard T. Feller, "The deviation of the Washington Cathedral nave axis from the choir axis" is not an error; "The architect planned it to give . . . the best visual perspective and prevent the converging of lines at the east end of the cathedral, such as one sees on distant railroad tracks" (Letters, 27 Mar.).

This device is neither uncommon nor new. Sir E. Lutyens, for example, employed it in his celebrated Cenotaph, in London's Whitehall. Such techniques recall the concept of entasis, which Ictinus, Callicrates, and their associates used in the Parthenon, the Doric temple of Athena Parthenus (490 B.C.). In this way, the optical illusions of concavity were corrected by means of virtually imperceptible curves. Fascinating details on this subject may be found in John Pennethorne's *Elements and Mathematical Principles of the Greek Architects* (1844) and Francis Penrose's *Investigation of the Principles of Athenian Architecture* (1851).

The opposite, namely, deliberate optical illusions, may be seen in Rome's Palazzo Spada, which was designed by Francesco Borromini, Italy's great baroque architect, as well as in the Vatican's Scala Regia by Giovanni Bernini (1663).

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Women on College Faculties

The status of women at Harvard was the subject of a study recently requested by female faculty members because women are virtually unrepresented in the higher ranks of both the faculty and administration (27 Feb., p. 1235). The various resolutions which women scientists have introduced at several scientific meetings are further signs of the frustration they are still experiencing in the universities. There are many brilliant female students in graduate schools, and most of them encounter little discrimination toward their sex until they become job-seekers. Then they face the ubiquitous problems of avoiding those jobs which are stereotyped for women; and, if they are fortunate enough to secure first-rate positions, of earning well-deserved promotions.

In anthropology, possibly one of the least discriminatory disciplines, women were the authors of nearly 23 percent of the dissertations published in the *Guide to Departments of Anthropology 1969-70* (American Anthropological Association, Washington, D.C., 1970), but only 10 percent of the full-time anthropologists in universities and colleges with graduate programs were women. Almost 25 percent of the listed graduate departments have no full-time women anthropologists. This category includes a disproportionate share of "elite" and "giant" institutions as well as a number of state universities. Where are all the women? The small colleges which lack graduate departments provide the answer. Almost 50 percent have full-time women anthropologists, and women account for over 25 percent of their total full-time faculty. Recent statistics on annual salaries of nearly 300,000 registered scientists in all disciplines reveal that the median for males is $13,500, but for females, only $10,000 (*Summary of American Sci-*

ence Manpower, 1968, National Science Foundation pamphlet 70-5, January 1970).

If the AAAS and scientists in general are committed to the goal of equal opportunity, is not some investigation called for to ascertain why that goal continues to elude us?

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Effect of the Draft on Graduate Physics Education

On 24 April 1968, Betty Vetter, executive director of the Scientific Manpower Commission, Washington, D.C., gave an address to the American Physical Society entitled "The doomsday machine for physics—the draft." At the time, her prediction that "the new rules will result in the elimination of half of three consecutive classes of entering students (and almost two-thirds in physics)" was considered by many to be exaggerated. It is now apparent that the effect of the draft on graduate physics education at Stanford University is threatening to fulfill her dire prediction.

The Stanford physics department is fortunate in attracting each year an outstanding class of entering graduate students. Out of approximately 400 applicants, an entering class of roughly 30 students is formed. More than 80 percent of the entering students have National Science Foundation or other fellowships and have Graduate Record Examination scores within the top tenth of all physics undergraduate students in the nation.

Of the 29 students who accepted admission to graduate study in our department in the fall of 1968, 5 did not come for reasons related to the draft, 1 did not come for other reasons, 6 left during the first academic year for reasons related to the draft, and 17 returned for the current academic year; of the 17, 13 are vulnerable to the draft.

In order to explore whether our experience has been duplicated elsewhere, we sent inquiries to the top 21 departments in this country whose graduate faculties were voted as "distinguished" or "strong" in the 1966 *Assessment of Quality of Graduate Education* by A. M. Cartter (American Council of Education, Washington, D.C.). Ten replies were received. Table 1 shows that many of them had experiences similar to ours; that is, of the students who accepted offers of admission for the fall of 1968, between 11 and 38 percent did not come or have since left for draft-related reasons.

Our experience has shown that uncertainty with respect to draft status has an extremely detrimental effect on our students. Graduate study in physics, and, no doubt, in other professional fields, requires an absorption and concentration on the subject matter which is probably unique as far as occupations are concerned. Under these circumstances many of our graduate students cannot bear the pressure of a I-A classification, even for 1 year. They tend to join other activities in which their military status is defined with greater certainty.

Judging by the classifications of the new class of students who entered in the fall of 1969, most of the 13 students vulnerable to the draft will receive I-A classifications during the present academic year. Furthermore, under the present lottery system one may expect that at least half will be

Table 1. Summary of draft experience of students entering graduate work in physics in the fall of 1968.

	ACE rank	Students (No.)				
		Accepted admission	Did not come or left		Remaining in 1969	Did not come or left for known draft reasons (%)
			Draft reason	Other reasons		
Berkeley	1	65	20	6	39	31
Harvard	3	22	6	1	15	27
Princeton	4	32	11	1	20	34
Stanford	5	29	11	1	17	38
Illinois	8	88	17			19
Yale	11	21	7	4	10	33
Michigan	13	44	9	14	21	20
Rochester	13	28	3	4	21	11
Maryland	16	90	14			16
Hopkins	19	15	5	0	10	33
Carnegie-Mellon	21	22	6	5	11	27