ently do not find the dental profession attractive. The vice president of the Association of American Women Dentists urges women to come into dentistry for professional prestige, good income, and limited working hours (*5*). In Poland and Russia 80 percent of dentists are women, a result, according to a Polish woman dentist (*5*), of the movement of women into dental schools during the wars and the willingness of returning men to leave the profession to them.

Too many bright girls and boys do not move on to higher education. Of the education of both sexes, particularly of women, statistics show a dramatic change during the decade 1959–1969 (*6*). The total number of B.A.'s doubled; the number of M.A.'s and Ph.D.'s nearly tripled. The male-female ratios shifted from 2 to 1 for B.A.'s and M.A.'s and 8 to 1 for Ph.D.'s to 4 to 3, 5 to 3, and 7 to 1, respectively. If a graduate program in psychology is characteristic, the dropout rate for females was significantly higher than for males (*7*).

For the period 1968–1980, the growth in the number of degrees granted is estimated at 50 percent for the B.A., 100 percent for the M.A., and 115 percent for the Ph.D., with a concomitant rise of 20 percent in the labor force. The proportion of educated persons seeking employment will be higher than in any previous decade (*8*). Economic forces will inevitably affect sex ratios in work areas.

Part of the woman's problem in academia is due to the heavy concentration of women in three fields, the large number of men in the same fields, and broader male interests. In both 1959 and 1969, half the women and one-third of the men who held doctorates were in the fields of education, psychology, and the social sciences. In education, men outnumbered women 4 to 1; in psychology 3 to 1, and in the social sciences, 7 to 1. One-third of the men who had doctorates were in engineering, mathematics, and the physical sciences; in these areas, the number of women was negligible. In the biological sciences, the number of Ph.D.'s amounted to 11 to 14 percent of both men and women. The small numbers in other areas also were divided according to sex: men, but almost no women, in agriculture, business, religion, and philosophy; women, and many men, in English, journalism, arts, and foreign languages.

These interests are foreshadowed in high school. Since 1955, the National Merit Scholarship Corporation has tested 800,000 high school juniors each year, boys and girls in equal number (*9*). The girls do better in English, the boys in mathematics, social studies, and natural science. Among the finalists, boys outnumber girls, 2 to 1.

The Los Angeles *Times* Scholarship Fund has, since 1964, awarded scholarships in four areas: English, social science and history, mathematics, and science. Candidates may choose the area, and half the girls chose English. Of 32 scholarships, girls have been awarded 5, all in English (*10*).

Early verbal competence reinforces interest in predominantly verbal activities. Movement into other fields in increasing numbers may alleviate the woman's problem in academia.

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Obsolete Technology

Bryce Nelson, in his report "Mobile TB x-ray units: An obsolete technology lingers" (News and Comment, 10 Dec., p. 1114), emphasizes the present meager returns from the use of chest x-rays to detect cases of tuberculosis.

The term "obsolete" is usually reserved for procedures that have been used effectively in the past but no longer fulfill their original purposes or are no longer needed. However, with equal force, the negative aspects of the term "obsolete" can easily be applied to certain new health-screening procedures that are widely heralded at the present time and in some instances are even required by law.

The Philadelphia Neoplasm Research Project (*1*) is a good instance in point. Among 6136 men, age 45 or over, who were studied over a 10-year period, 121 developed lung cancer; only 8 percent

of these proven cases were alive 5 years after diagnosis was established. This represents one life saved in every 614 carefully observed individuals; 12,500 x-rays were required to save this one life. Should we refer to such a method of study as "obsolete" or as inadequate? The distinction is small.

In one large university medical center, it has been estimated that 5000 cervical smears must be performed in order to detect one subject who is going to develop cervical cancer; this figure applies only to women who have never had a previous smear. The rate drops to one case in 15,000 for those women who have had a smear during the preceding 2 years. Even at the higher frequency rate of 1 in 5000 women, a gynecologist would have to perform a pelvic examination and a pelvic smear every 10 minutes, 8 hours a day, 5 days a week, for 6 months, in order to prevent one case of cervical cancer. Such a cervical smear examination is required by law for hospital in-patients in the State of New York; would one dare to use the term "obsolete" for this very worthy but underproductive activity?

Perhaps before laws are passed or good causes are given legal status, a careful evaluation of the actual return from prodigious amounts of human effort involved would be highly desirable. Nelson's observations on the mobile TB x-ray unit are timely, but the same penetrating dissection of some of our other current medical practices is overdue.

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Bryce Nelson's report deals with a source of the population's exposure to radiation of much greater significance than the levels of exposure associated with nuclear power.

About 2 years ago, while a resident of Montgomery County, Maryland, I wrote a letter to the director of the Bureau of Radiological Health (BRH) in the Department of Health, Education, and Welfare (HEW), concerning this same problem. I questioned whether the mobile chest x-ray service then in effect in Montgomery County was in accord with the policy on chest x-ray screening programs recommended by the Surgeon General more than 12 years ago. I suggested that this "service" was contrary to the health principle that unnecessary radiation exposure should be avoided. The county had reported that the mobile units were taking about 17,000 routine x-rays on 70-millimeter film annually in Montgomery County, which has a population with a low TB risk. In my letter I pointed out that, if mobile x-ray service were available to a similar extent throughout the country, the American public would be exposed to hundreds of thousands of unnecessary chest photofluorographs each year. I suggested that the BRH take the initiative to update or reinforce the Surgeon General's earlier position statement on the judicious use of chest x-ray screening programs. To my knowledge, HEW still has not taken any definitive action on this problem. I hope that Nelson's report will stimulate HEW to exercise appropriate leadership to help eliminate a major source of unnecessary radiation exposure.

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