

transport and eventual permanent-disposal costs.

Each nuclear plant maintains large pools of water on site to store spent fuel. On-site storage was originally supposed to allow for a 10-year cooling of (thermally) hot fuel until it could be shipped to a permanent disposal site. For utilities that have operated more than 10 years and for those with small capacity, these storage pools are close to full.

To aid nonproliferation objectives, Carter also offered to accept spent fuel from other nations as well as to begin an international fuel bank—a reservoir of enriched fuel to aid temporary supply shortages. □

Drilling into the Japan Trench

Although the concept of plate tectonics and continental drift has achieved wide acceptance only during the last decade, it has already revolutionized much of oceanographic research. Aside from its application to earthquake and volcano understanding and prediction, plate movement is also central to contemporary investigations of mineral formation and deep sea sedimentation patterns.

The Glomar Challenger's latest (56th) leg of the Deep Sea Drilling Project has examined sediments from the Japan Trench, a 7,000-meter-deep warp just east of where scientists believe the ocean bottom slides under the continental margin beneath the island of Honshu. If the Pacific plate is indeed moving under Japan, the sediments in this area should be exposed to great forces, DSDP researchers theorize.

A half dozen holes were drilled into the trench at various depths. One of them—drilled 600 meters into the slope at 6,000 m under the surface—yielded fragmented bits of sediment that had been subjected to tremendous compression. At one point, the drill penetrated the same layer of rock four times, indicating that different slabs of the same layer had been pressed on top of one another after being broken up.

At a hole higher on the slope, in 3,400 m of water, researchers found sediments similar to those at the deeper level—meaning that much of the sediment sampled near the foot of the slope might have come from further up, and were possibly carried down by earthquake-triggered mud slumps or slides.

Finally, a hole was drilled into the Pacific floor, seaward of the trench, to obtain samples that scientists expect would have been driven under the continent at the trench within the next million years. These samples were different from those in the trench slope itself, "indicating that the rocks sampled on the continental [trench] side were not simply scraped off the oceanic plate," as some researchers have suggested. □

Still many barriers to women in science

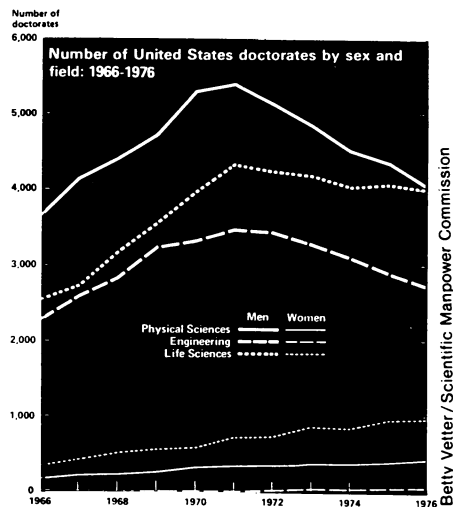
"Women research scientists meeting under the auspices of the American Association for the Advancement of Science and funded by the National Science Foundation endorse equal rights and opportunities for women and urge our professional organizations to hold conventions only in those states that have ratified the Equal Rights Amendment [ERA]." This was the first of a series of resolutions to come out of the Conference on Women in Scientific Research last week in Washington. Sixty women convened to discuss obstacles, barriers and problems relating to obtaining their degrees and beginning their careers. They represent a wide range of science and engineering disciplines and all received Ph.D.s within the last six years.

"Ensuring high-quality science and eliminating barriers to the development of potential scientific talent demands the increased participation of women in all phases of the scientific enterprise, from the highest policymaking board to the smallest grade-school science class," a spokesman said at a press conference following the meeting. Affirmative action programs and equal employment opportunity laws should have eliminated discriminatory college-admissions and job-recruiting policies long ago, but these women testified that barriers are still rampant, although perhaps more subtly disguised.

For example, although women generally score as well as or better than male classmates in high school math and science courses (a smaller percentage of women than men enroll in these courses, however), many do not continue to do so in college. Women researchers at the conference attributed the apparent declining interest in math and other science-preparatory courses, at least in part, to a general lack of understanding among women of the skills demanded by a science career and a de-emphasis of the opportunities available to women in science. Absence of role models, such as women science teachers and math professors, further accentuate the de-emphasis on women in science.

One of the more common complaints registered by conference women as they met in small working groups is that "we are not taken seriously" and thus must "do better" than male colleagues to get the attention, respect and proper recognition for accomplishments.

Prior to the conference, each of the 60 women was polled about goals, achievements and impressions of how men and women compared in school and the workplace in terms of receiving recognition, opportunities for advancement and moral support. A group of 60 males, matched against the women for educational background, degrees, career training and experience, filled in the same questionnaire. Most men and women



Figures show there is still a problem getting women degreed and into the workforce.

"observed distinct differences in the way women were treated—that women were more often not provided with mentors, advice and models, that they did not experience equality [with their colleagues], that they were isolated from their peers, and suffered improper sexual advances and harassment from men who controlled their academic destiny," said Janet Brown, head of the AAAS' Office of Opportunities in Science.

Women who worked in industry and government laboratories seemed to experience less overt discrimination than those who found careers in universities and colleges, based on a sampling of the conference participants. More conscientious equal employment programs may, in part, be responsible. The majority of women trained for careers in basic and applied research, however, are employed in academic settings. Participants repeatedly described how "the system" in universities worked against them.

For example, many described difficulties in gaining tenure because of the "mens' club" ambience in science departments, which works to exclude women on the basis that they are less-qualified newcomers to the research community. This attitude also seems to carry over to the "same old boys" who referee journal articles (read them to see if their research content warrants publication) and who referee grant proposals to funding institutions, the women said. Discrimination by referees, consciously or unconsciously, is hard to prove, they acknowledged, but one way to attack the source of the problem is to involve more women in all phases of the grant and publication review process, they said.

The AAAS, under contract to NSF, will publish an analysis of the status of women in science next year and make policy recommendations to NSF for increasing the participation of women in science. □