GEOLOGY IN THE PUBLIC EYE

by

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A summary article on some of the exemplary and wide-ranging efforts of the American Geological Institute's Education Committee to promote geological education and to inform the general "lay" public of the importance of geology.

Since its beginning in 1942, the American Geological Institute (AGI) has been strongly committed to promoting geological education and informing the general public of the importance of geology in their lives. Working with representatives from each of the Institute's 18 member societies, the AGI Education Committee has conducted a variety of educational projects and activities which reflect both the dedication of the earth scientists who have organized them and the need to emphasize the pertinence of geology in society.

Census

In 1956, for example, AGI began to collect student-enrollment data from 192 U.S. schools which carried degree programs in geology and geophysics. The following year, 16 Canadian schools were added, and now, some two decades later, the annual survey compiles information on more than 26,000 students in almost 500 U.S. schools and more than 3,000 students in 39 Canadian schools. New categories have been added to the census over the years: in 1960, for example, non-major students in geology courses were added, while in 1970 AGI began to count geology students in non-degree departments at four-year and junior colleges.

Since the demise of the National Register of Scientific & Technical Personnel (which AGI operated for the earth sciences), the Institute has been the prime source of such information about geoscientists. It is also the only source of information on the number and distribution of women and minority geoscience students. These data help describe the profession and guide employers in equal-opportunity programs.

Minority Participation Program

More recently, the Institute's Minority Participation Program (MPP) has been working to increase representation of ethnic minorities in the geosciences. U.S. census results show that of the total population, approximately 11.0% are Negroes, 5.0% have Spanish surnames, and 0.4% are American Indians, which, if applied to a population of about 36,000 earth scientists, should mean that about 3,950 are Negroes, 1,800 have Spanish surnames, and 145 are American Indians. In fact however, there are fewer than 20 Negroes in the profession, with only four or five of them possessing doctoral degrees, while American Indians and people with Spanish surnames are even scarcer.

The MPP attempts to help rectify that imbalance. Industrial organizations and several of AGI's member societies have contributed to a financial-aid fund, while a subcommittee screens applications by minority students majoring in geology and geophysics and recommends them for annual grants, which range from \$250 to \$2,000. At present, more than 50 MPP scholarships are granted for each academic year.

Women Geoscientists

The Institute also has an educational program designed to benefit women earth scientists, who total only about 1,400, or fewer than 4% of the 36,000 earth scientists. Private industry employs about half of all earth scientists but only 12% of the women. Most women (39%, compared to 28% of all earth scientists) hold academic jobs, a category in which new jobs are scarce.

Concerned about the problems that such statistics suggest, AGI's education program includes the Women Geoscientists Committee, which has surveyed the female population in our profession, set up a roster of women geoscientists, and founded a newsletter for them.

Scene from an AGI booth organized by the Women Geoscientists Committee at the GSA Annual Meeting, October 1978.

Publications

Publications proposed and developed by the Education Committee form a visible and important aspect of AGI's educational activities. The widely used Glossary of Geology, is a case in point. Its predecessor, Glossary of Geology and Related Sciences, appeared in 1957 with 14,000 entries and was revised in 1960 when 4,000 more entries were incorporated. The current work, published in 1972, has about 33,000 entries and work is now being completed on the new, expanded 1979 edition.

An outgrowth of the Glossary's second edition is the Dictionary of Geology (revised edition), a paperback abridgment for popular use. This publication has proved to be particularly useful to secondary school teachers, geology and earth science students, as well as amateur rock, mineral, and fossil collectors.

The AGI Directory of Geoscience Departments is of special use to North American geoscience educators. First published in 1952, it was the earliest attempt to list all degree-granting departments of geology in the U.S. and Canada. The Directory is now published annually and includes detailed information on some 800 departments, the types of degrees offered and the names and specialties of almost 6,000 faculty members. The information is stored on magnetic tape for updating and annual publication.

Educators and their students have also made good use of the AGI Data Sheets. Originally published in Geotimes, the Data Sheets now consist of concise compilations of map symbols and check lists of earthquake effects and stand as a separate publication, with revisions and additions in the offing.

When the members of the Education Committee turned their

attention to promoting more and better teaching of geology and earth science in public secondary schools, particularly at the grade nine level, one of the results was the publication of Geology and Earth Sciences Sourcebook for Elementary and Secondary Schools, edited by Dr. Robert L. Heller, current President of AGI. Funded by the National Science Foundation (NSF), and written by a team of earth scientists, secondary school teachers, and science educators, this valuable teaching aid has been translated into Spanish and Portuguese and the third edition is now in preparation.

Secondary earth science received its greatest support from the NSF-funded and AGI-sponsored Earth Science Curriculum Project (ESCP), out of which came Investigating the Earth, a textbook for junior high school students. For several years in the 1960's, teams of authors from throughout the profession collaborated to produce the text and related material. Published by Houghton Mifflin in 1967, it has served as an introduction to the earth sciences for thousands; in fact, nearly 750,000 copies are in print, and it has been translated into several foreign languages, including Spanish, Portuguese, Turkish, Korean, and Japanese. The third edition of this popular book was published in 1978 and seems destined to be even more widely used.

Ancillary student and teacher materials for the ESCP course include the ESCP Pamphlet Series (field guides to minerals, astronomy, beaches, fossils, lakes, layered rocks, plutonic and metamorphic rocks, rock weathering, soils, and meteorites) and the ESCP Reference Series (booklets on water data, free materials for earth-science teachers, planetariums and exhibits, earth-science films, guides to field study, maps and publications, sources of earth-science information, topographic maps, and others).

The Council on Education in the Geological Sciences (CEGS) was organized as an AGI education project to explore the status of geology teaching in U.S. colleges and universities. Funded by NSF, it led to many short publications, with Geowriting: A Guide to Writing, Editing and Printing in Earth Science (1973) being perhaps the most widely used. Intended for the "beginner" scientific writer (or one who writes only occasionally for publication) and for editors of professional journals whose training is in science rather than in journalism, Geowriting is now in its second edition, with 15,000 copies in print; several college geology departments have adopted it as a textbook for writing courses. Although CEGS, like ESCP, has been phased out, it has left its mark on the teaching of geology in the U.S.

Geotimes, the Institute's monthly news magazine for earth scientists, needs little introduction. Though not a part of the education program per se, Geotimes stresses news and features not found in other professional journals. Articles cover a wide range of disciplines but are geared primarily toward short news reports of scientific meetings, each consisting of a condensation and concentration of the essential information presented.

Career Information Services

In recent years there has been an increased interest in geology as a career. To meet the demand for career information requested by both students and career guidance counselors, the Institute has expanded its career information services. At present, the Education Office receives more than 3,000 requests for such information each year; specially prepared packets, which include the colourful career pamphlet Geology: Science and Profession, are available to

respond to student requests, while more comprehensive packets are forwarded to career resource center directors and counselors.

Film Series

Since 1962, AGI has cooperated with Encyclopaedia Britannica to produce the AGI-EBE Earth Science Film Series. More than 35 16mm motion pictures, 10 sound filmstrips, and 40 colour study prints have been made so far. Each film is produced in collaboration with a competent earth scientist recommended by the AGI Director of Education. Prior to release, each film is screened for accuracy of content by an AGI-selected panel of specialists. Most films deal with geological subjects though the series also includes titles dealing with oceanography, astronomy, and meteorology.

"Spot Ads"

During the past year, the Institute has been making use of mass communication techniques through public service announcements, or "spot ads", on radio and television. Taking advantage of the fact that each U.S. radio and television station must provide, at no charge, a specified amount of daily air time for public service announcements made available by non-profit organizations, AGI designed its first nine "spot ads" in the form of a series of 30-second announcements on the following topics: "The Energy Crisis", "Moon Landing", "Water Resources", "Land Use", "Energy Alternatives", "Geology: Service and Adventure" (dealing with careers in geology), "Marine Geology", "Earthquake Concepts" (introducing plate tectonics), and "Critical Resources". Because of the success of this series and the tremendous response it aroused from listeners, six more "spot ads" are now in preparation and will be broadcast during 1979. A circulation report from an independent analyst indicates that almost 30 million viewers have seen these 30-second announcements, and estimates that this figure could be projected to a possible 52 million! For added effect the television spot announcements often use a well-known television personality as narrator.

Finally, the latest effort to acquaint the public with the relevance of geology comprises a series of five news releases to 3,800 suburban daily and weekly newspapers in the U.S. Consisting of brief comments on topics similar to those of the radio and television public service announcements, about 1,000 of these short articles have been published in some 500 different newspapers in 31 states and six cities in Canada. They have also generated a large number of requests for additional information.

The foregoing indicates the obvious general interest that there is in geoscience, and the importance of promoting an awareness of and information about the profession. It should be noted, however, that the development and implementation of the programs mentioned would not have been possible without the dedicated efforts of the hundreds of earth scientists who enthusiastically served, and continue to serve, on AGI's many committees and task groups.

EDITOR'S NOTE: Further information about AGI's programs and publications is available, on request, from the Director of Education

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