

You indicate that the stratospheric fallout occurs at maximum rates in the 30 degree to 50 degree bands of latitude in both hemispheres. This old argument still is not quite settled, I believe, although the evidence in favor of your conclusion is increasing. My principal difficulties with it at the moment are that we know that a considerable part of the peak in observed fallout in these latitudes in the Northern Hemisphere is due to tropospheric or local fallout which was never in the stratosphere and the evidence for a corresponding peak in the Southern Hemisphere seems to be rather weak.

With respect to the carbon-14 and cesium-137 hazards, the laboratories measuring radiocarbon dates in various parts of this country, in Europe and New Zealand have sent me data on the present increase in the carbon-14 content of living matter which amounts to about 10 percent of the natural level of carbon-14 from the cosmic rays which in itself corresponds to about 1.5 milliroentgen per year—about 1.5 percent of the average total natural dose rate. Turning to cesium-137, Dr. E. C. Anderson in the Health Division at our Los Alamos Laboratory has just reported data on the human level in the United States and Europe for the late summer and early fall of last year which amount to an average of about 75 micromicrocuries per gram of body potassium for an internal dose rate of about 3 milliroentgens per year. The total cesium-137 fallout in the United States now amounts to about 50 millicuries per square mile. This adds about 1 mr/yr of external dose for a total of about 4 mr/yr due to cesium-137, which is about 3 percent of the natural average radiation dose rate from natural radioactivity and the cosmic rays. I can't tell whether these numbers are in strict keeping with your estimate that the immediate probability of any one individual being affected by bomb-test carbon-14 and cesium-137 is about 1 in 500,000 but I think your estimate looks reasonable.

On the many other points in your letter I find myself in complete agreement, particularly about the importance of more experimental and collecting programs on the amount of fallout deposited locally from a low height of burst. Since it may be that we will not again have the opportunity to test devices, at least above ground, it is particularly important to consider whether we may not collect more information at this point from past tests. I believe there are some possibilities of doing this and I suggest that we undertake such a program jointly right away.

Sincerely yours,
W. F. LIBBY

*Commissioner, Atomic Energy
Commission*

3 APRIL 1959

Young Research Workers for Government Laboratories

As the result of its first use of the Research Scientist Examination, the Civil Service Commission has 105 of the 200 young research workers it started searching for last December. The successful applicants, selected from a group of 370 who took the test, are now qualified to be considered for assignment to 11 federal laboratories in the Washington, D.C., area. They will be given opportunity to begin research work with a starting salary of \$5430. Placement has already begun. A second and last test was administered to 690 persons in late March; 100 additional applicants are expected to qualify.

New Program

The two tests are part of a new personnel program conducted by the Civil Service Commission for 11 Washington area laboratories which need young research workers. The National Bureau of Standards, the National Institutes of Health, the Naval Research Laboratory, and 8 other agencies compose the interested group. The recruiting program is unusual in that it offers high starting salaries, direct entry into research positions, and thorough and imaginative testing of the applicant's research potential. Persons taking the positions will be given the opportunity to continue their formal education beyond the bachelor's degree. The 11 scientific facilities plan to devise means by which advanced study can be undertaken; in some cases it is expected that the worker's laboratory project will be applicable to his degree requirements.

Unlike other Civil Service programs, which use academic records as the primary basis of selection, the new recruiting system requires the applicant to take two tests. The first examines for knowledge of the subject matter of either chemistry, physics, or mathematics, or a combination of the first two. The second test examines for skill at mathematical formulation, an ability that has been found to have a high correlation with creative research potential.

Wide Range of Colleges

A remarkably wide range of colleges was represented by the first group of applicants for the commission's test given last February. More than 150 institutions were listed as the last school attended; 73 colleges had educated the 105 applicants who passed. The major universities of the country had only a limited representation on the list, which was composed to a considerable extent of small colleges such as Alverno, Loras, Wofford, and Canisius. Albert Maslow of the commission's test development section has speculated that this preponderance of smaller

institutions might have been caused by two things, among others; the fact that the large colleges and universities have large and effective senior placement services, and the fact that the small colleges are probably less often visited by industrial and governmental recruiting teams. The small college man, in other words, has to go out and look for a job, and the commission's program, with its high salaries, was apparently quite attractive.

Success of Test

Working with preliminary data, the Civil Service Commission's testing experts feel that the tests, collectively called the Research Scientist Examination, show promise of considerable success. Although the final evaluation can only be made after the successful applicants have been working for a number of years, other information now available indicates that two major aims have been accomplished. The first is that the test drew persons from the age group that the designers had in mind. The great majority of the applicants were 22 or younger, and were in their last year of college or their first year of postgraduate work. A questionnaire, which was given with the tests, shows that the majority of the applicants, particularly those taking the physics subject matter, want to do postgraduate work. Success of the test is also indicated by the fact that among 35 percent of those that received high scores in the examination reported themselves to have been in the top quarter of their college class. Similarly, 44 percent of those who did well in the test had received Phi Beta Kappa citations, had graduated with honors, or had received other recognition for scholarship. Those with lower class standing and those with no scholarship citations did not do as well. In the view of the commission's experts, these findings suggest that the subject-matter tests gave an accurate measure of the applicant's knowledge of his field. The mathematical formulation test is another case. Only time will tell if it successfully identified those with creative research potential in this group as it has in past groups.

Commission personnel also feel that the combined tests effectively compensate for the differing standards at various schools. This problem, difficult with just two different institutions, was compounded by the great number of parent institutions listed by the applicants.

Also, the tests showed that a small number of people who were in the lower half of their class did very well on the examination. In the physics examination, for example, three of the 16 persons who received the highest scores were in the third or fourth quarter of their class. For these reasons, and because of the heavy response to its new program the commission believes that it will be able to

provide the 11 laboratories 200 research workers who will have high potential for creative research.

"GeoScience Abstracts"

GeoScience Abstracts is the new monthly abstract journal that has been started by the American Geological Institute to replace *Geological Abstracts*, which had been published by the Geological Society of America for the member societies of the AGI since 1953. The launching of the reorganized and expanded journal has been made possible through a grant from the National Science Foundation.

At the outset, *GeoScience Abstracts* will work toward complete coverage of North American geological literature; abstracts translated from the Russian abstract journal, *Referativnyi Zhurnal*, will also be included as the translations are processed by the AGI Translation Committee.

The new journal will feature organization of abstracts into 15 subject sections, and the objective is to cover geology, solid earth geophysics, and related areas of science. An effort will also be made to provide effective coverage of geologic maps.

The cooperation of all regular geology-geophysics and other scientific journals is being sought, as is the aid of all appropriate government agencies in Canada, Mexico, and the United States. Colleges and universities that publish research results are being invited to contribute. The success of *GeoScience Abstracts* will depend upon the cooperation of the profession. For subscription information, write to the AGI, 2101 Constitution Ave., NW, Washington 25, D.C.

Public-School Enrollment

Public-school enrollment in this country was approximately 1,843,000 over the normal classroom capacity of the public elementary and secondary schools as the current school year began, compared with an excess enrollment of 1,943,000 in the fall of 1957. This was shown in reports from the states in the Office of Education's fifth annual survey of public-school enrollment, teachers, and school housing (Office of Education Circular No. 551).

The number of public-school pupils in excess of public-school classroom capacity was 5.4 percent of the total enrollment in the fall of 1958, compared with 5.9 percent in the fall of 1957. Twenty-four states reported that the number of pupils in excess of public-school capacity had been reduced as school opened last fall, while 18 other

states and the District of Columbia reported an increase in excess enrollment. One state reported no change, and for five states comparisons were not possible.

The states reported a need for 140,500 additional instruction rooms, compared with 142,300 a year ago. Of the 140,500 rooms needed at the beginning of the current school year, 65,300 rooms were needed to accommodate the 1,843,000 pupils enrolled in excess of normal capacity and 75,200 to replace facilities considered obsolete or otherwise unsatisfactory.

Enrollment in the public schools increased 1,148,000 over the previous year. The states reported about 33,936,000 pupils enrolled in the fall of 1958, an increase of 3.5 percent over the previous fall.

The number of classroom teachers rose from about 1,253,000 in the fall of 1957 to about 1,300,000 in the fall of 1958, an increase of 47,000 or 3.8 percent. Overall, the pupil-teacher ratio was 26.1 in the fall of 1958, compared with 26.2 in the fall of 1957. The proportion of teachers with less than standard certificates declined from 7.3 to 7.1 percent.

Kitt Peak Observatory

Astronomers may now submit requests for use of the facilities at Kitt Peak National Observatory. Observing can probably begin about January 1960. Observing time can also be assigned to a limited number of graduate students. Subject to the availability of funds, travel expenses and subsistence will be granted to students.

The 36-inch and the 16-inch telescopes at the observatory will be equipped for ultraviolet-blue photometry with refrigerated photomultipliers. A classification spectrograph will be added to the large telescope shortly after January 1960. A ratio spectrometer is currently available on the small telescope, and a similar unit will soon be added to the large one.

Requests for further information and applications should be sent to the Director, Kitt Peak National Observatory, 1033 North Park Ave., Tucson, Ariz.

Federal Council for Science and Technology Established

On 13 March President Eisenhower signed the executive order that brought the recommended Federal Council for Science and Technology into being. The new council, which will have James R. Killian as chairman, has the responsibility of promoting coordinated policy planning for the many federal agencies

engaged in scientific and technological work. The recommendation for the establishment of the group was made last December by the President's Science Advisory Committee.

The council will be composed of eight members representing the following departments and agencies: Departments of Defense, Interior, Agriculture, Commerce, and Health, Education, and Welfare; the National Science Foundation; the National Aeronautics and Space Administration and the Atomic Energy Commission. In addition, the executive order authorizes the Secretary of State and the director of the Bureau of the Budget to send observers to the council meetings.

In its last section, the order states: "The council shall be advisory to the President and to the heads of federal agencies represented on the council; accordingly, this order shall not be construed as subjecting any agency, officer, or function to control by the council."

Associated Colleges of the Midwest

The Ford Foundation has granted \$525,000 to help ten private Midwest colleges launch a broad cooperative plan to improve their educational and financial problems. The grant went to Cornell College, Mount Vernon, Ia., which is the fiscal agent for the group, known as the Associated Colleges of the Midwest (ACM). The grant will cover the basic operating costs of the organization for 5 years. The group will raise matching funds to be used for special projects and later operations.

Besides Cornell College, the other colleges are Beloit (Beloit, Wis.), Carleton (Northfield, Minn.), Coe (Cedar Rapids, Ia.), Grinnell (Grinnell, Ia.), Knox (Galesburg, Ill.), Lawrence (Appleton, Wis.), Monmouth (Monmouth, Ill.), Ripon (Ripon, Wis.), and St. Olaf (Northfield, Minn.). Together, they enroll 10,000 students and have about 700 faculty members.

The aim of the ACM members is to achieve steady improvement in the quality of their educational programs through strengthening and making the best use of their available resources. The assumption is that they can accomplish some things collectively that they cannot do as well singlehandedly. Although ACM will conduct joint studies and experiments and certain joint operations, each member college will retain full independence of control over its own affairs.

The studies may cover such topics as trends in academic courses, the relation of size to costs, alternatives to the conventional academic year, utilization of facilities, the effects of varying class