The Mount Wrangell Observatory

DURING the summer of 1953, an observing station was established on the summit of Mount Wrangell, Alaska. Mount Wrangell is located at almost exactly 62° North latitude and 144° West longitude, in the Wrangell range in southeastern Alaska. Its altitude is 14,006 ft. The observing station is located in a saddle about 200 ft below the summit. The Richardson Highway passes by the foot of the mountain. The settlement of Copper Center on this highway has proved a convenient base for trips to the top. The airline distance from the top to Copper Center is 43 miles. By road, the distance from Copper Center to Fairbanks is 270 miles; to Anchorage, 200; to Valdez, 100; and to the extensive CAA landing strip at Gulkana, about 15 miles.

Access to the summit is by air. During the summer, small airplanes with ski-wheel combination landing gear have proved practical. The plane takes off on wheels and, while the ship is in flight, the ski is lowered for landing in the snow on the summit. During the winter, skis alone would presumably suffice. The flight up from Copper Center takes approximately 1 hr; the return is made in about half an hour. The altitude of the Copper Center airstrip is approximately 1100 ft. To this time, some 3 dozen landings and take-offs on the summit have been completed. Some flights have been made with loads of 300 lbs. Thus, in addition to the pilot, a fairly heavy man and some equipment can be carried up in each flight.

The station consists of 2 Jamesway huts, one of which constitutes the living hut and the other houses the generators and serves for storage and for apparatus. A gasoline-driven generator rated at 5 kw is available, delivering 28 v dc, or 110 v 60 cycles ac if the rotary converter is run. This generator suffices for most experimental needs. A smaller generator supplies the electric light so that the domestic circuit and the experimental circuit are independent. Two standby generators are also present. For cooking, a two-burner gasoline stove is used, and ample food supplies are on hand. Several radio receivers are on the mountain, as well as transmitters for walkie-talkie communication with Copper Center and aircraft emergency communication with the CAA monitoring station. The possibility of direct radio communication with Fairbanks, not quite in a line-of-sight location, is being explored.

During the summer of 1953, it was found that weather permitted flights to and from the mountain on the average of 5 days/wk. The daily temperature of the air at the summit was about 5 to 25° F. The intense solar radiation on sunny days allows one to wear light clothing with comfort. The winter temperature regime is not yet determined, but it is planned to measure this during the next 6 months.

The pioneer work on the station was initiated in April, 1952, when Dr. Terris Moore, President of the University of Alaska, and the author flew over the various peaks in the Wrangell and Alaska ranges and selected Mount Wrangell as the most suitable. Since it was not known whether landings and take-offs at 14,000 ft would be successful, it was felt desirable to have a ground party on the summit before the first landing was attempted. Consequently, a party of 5 men (Charles Wilson, Phillip Bettler, and Robert Goodwin of Alaska, and Arthur Beiser and Hugo Neuburg of New York University) were flown to a glacier at an altitude of 8500 ft. From this point they ascended the mountain on foot. When they reached the summit, Dr. Moore made the 1st experimental landing alone and the 2nd landing with the author as passenger.

Although this station was originally established as a cosmic ray observatory, it is hoped that it may prove useful to other branches of science. Many other fields of research occasionally have need of high altitudes, northern latitudes, and low temperatures. Any institution or scientist interested in making use of the station is invited to write to Dr. Terris Moore, President, The University of Alaska, College of Alaska.

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Science and Public Relations

WHAT is science? It is a method, an attitude, and a tradition. Its method comprises the techniques of answering questions objectively, with recourse to facts. Its attitude is a respect for objective fact, and its tradition derives from the myriad investigators who have shared these attitudes and techniques, and applied them to the understanding and mastery of nature.

The scientific fraternity has become a palpable reality: scientists share in a common outlook and a common undertaking. And since scientific results have an unparalleled validity and usefulness, the impression that science makes on the man-in-the-street is deep. It is only natural that the nonscientist should have distinctive conceptions of science, and well-defined attitudes toward scientists and their work.

The character of these lay attitudes is of the most intimate concern to the scientist. His working environment is his society, and this is in the main shaped for him by lay opinion and power. Witness the strong and direct influence of public concerns on the rate and direction of scientific research. It is a matter of simple self-interest—to say nothing of human obligation—that scientists should promote public understanding of their methods and goals, and sympathy towards them. Science needs outstandingly good public relations. In an age in which organized social pressure is the most potent political force, science cannot afford the risks of isolation or misunderstanding. The many signs that something is amiss here reveal a great potential danger. We have selected several rather obvious phenomena in illustration. Though apparently unrelated, they have a portentous aggregate effect.

To begin with, there is the phenomenon of inordi-

nate public respect for things seemingly scientific. When directed toward some indiscriminate endorsement by a person of eminent scientific reputation, such respect often results only in lessening the value of scientific utterances in public esteem. A realization of limitations is in order, as is a resistance to the temptation to present as fact what is in reality personal opinion. Scintillant research in the field of atomic energy does not of itself qualify a person to speak authoritatively on other important topics of the day.

At the opposite pole from unquestioning respect for spurious claims in the name of science is extreme and unreasoned contempt. This is present in the popular conception of the "mad scientist," and in various anti-movements: antivivisection, antievolution, and such. Prominent among the sources of this contempt for science are such much ballyhooed pseudoscientific works as those on colliding worlds or dianoetic mind-theories.

More serious is the situation in science education. Surely we should have persons with extensive scientific experience, rather than good intentions alone, teaching the fundamentals of science. But in the one place where citizens can rub shoulders with the votaries of science, in classroom and laboratory, the approach is the least flexible and the most unimaginative. There is something suspect in the persistent aversion that college freshmen have to the required one year of a natural science.

Science has not used its public relations facilities wisely. Recently, several film shorts, purportedly showing rapid advances being made in the use of radioisotopes, atomic fuels, and the like, have been released with the official sanction of the AEC. Intended to increase public knowledge and consciousness, they leave only a confused remembrance of figures in long white coats twirling dials, peering at test tubes, and performing much such conventional Mumbo Jumbo. It takes very little of this type of official documentation to establish in the public mind that these are the same men in white coats who appear grasping microscopes in the mouthwash ads.

A recent indication of the deteriorating position of science is the dismissal of highly placed scientists within the national government. Though there is still controversy, one thing is clear. Politicians can be swayed by persistent press-agentry and lobbying to disregard the objective and competent research of reputable government bureaus. Men are dismissed not for reasons evidenced as valid by the facts, but for political expediency.

These examples of the growing isolation of science are mere straws in the wind, but they show its direction. Several possible causes of this situation come to mind. Science is a changing, growing thing, and we have as yet no proper perspective on the influence of modern scientific achievement on the commonplaces of everyday life. Also at fault is an intellectual withdrawal on the part of many scientists who abandon the effort to make themselves and their work accessible to outsiders. Probably the largest contributing agent has, however, been the increasingly necessary specialization of science. Originally, the theory and supporting facts of biological evolution were presented in a single volume. Today, one hundred volumes cannot do justice to the facts, much less the speculations.

How, then, can the scientist hope to reach the common man? There is no straightforward once and for all cure. Steps can be taken to improve the situation, common sense steps involving actions that must be done repeatedly, with patience and persistence.

The scientist as an individual can do much. He is a citizen, taxpayer, and voter, all of which entail rights he can put to use. He can be publicist. He can, as an employee, avoid employment under conditions that his professional conscience does not allow him to regard as honorable. And he can participate in activities which enable him to improve through personal contact his neighbors' opinions of his chosen profession. Science can devise no ersatz for personal respect.

Going beyond this, one powerful means for the much-needed improvement in public understanding is the association of scientists. Organizations can best utilize the power of effectively coordinated information, and have greater power to combat the pressures brought to bear by special interest groups. Perhaps the best way to achieve the desired result would be the formation of a single, nonprofit, non-Government institute, without partisan political affiliations, whose sole aim would be the improvement of the public relations of science. It should employ the tools of modern public relations without succumbing to its methods or aims. Among its functions would be the dissemination of information of public interest, the debunking of pseudoscientific claims, the detection of frauds and hoaxes, and the exposure of irrational fads. It could help, also, in familiarizing people with the need for basic research and pure science. It could become a force in counteracting anti-intellectualism and unreason.

One possible danger is clear. An organization such as we advocate is from the first subject to the dire temptation to fight fire with fire. It can readily deteriorate from its intended status as a disinterested organ of public enlightenment and welfare into just another group for special pleading. Its destiny is in the hands of its members—the scientists themselves. They have only to realize that vigilance is the price of safety.

Doubtless many scientists dislike the idea of personal action. The laboratory and the study are, after all, the scientists' proper sphere of activity. We have no delusions that our recommendations are pleasant: they are necessary. If the scientist is to be a prophet with honor, it can be only by dint of concerted and sustained effort.

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