And, in the process, keep your cool. With one of Sargent-Welch’s Thermostatic Water Baths.

Water bath. Too common a name to describe these, which are truly high-precision, extremely sensitive thermostatic devices for exacting laboratory work.

Example: Our top-of-the line water bath (shown here). More versatile, more convenient than anything else. It uses a thermistor for temperature sensing. Which instantaneously informs the Sargent-Welch Thermonitor® Controller of temperature variations. And without going into technical details about the Thermonitor, it gives fully proportional control for temperatures within ±0.01°C of the set point and permits direct dialing of temperature.

Now about the stirrer—more properly the turbine—which keeps things moving in this super-bath. The turbine provides radial and vertical circulation with maximum flow past the heaters. Another reason for that ±0.01°C precision. And, of course, there’s a full-visibility Pyrex container. All of this priced at $685.

Other Sargent-Welch water baths satisfy other needs. There’s one with the same type of turbine we’ve described, but equipped with an adjustable mercury regulator. This bath, with controller, is also accurate to ±0.01°C. Price: $485.

Like a low-cost bath with an accuracy of ±0.1°C? Sargent-Welch has one. You set the temperature on an adjustable thermometer. Price: $285.

And there’s an economy ($185) model with an accuracy of ±0.25°C. Also available separately are water-bath controls, complete with heater, thermoregulator, and stirrer.

Ask your Sargent-Welch representative for full information on water baths and accessories. Or write to us.
Rape of Alaska Can Be Rational

Carter's essay "North Slope: Oil rush" (3 Oct., p. 85) was a most rational and well-balanced discussion of the complex problems that we are facing now in Alaska, a fine example of enlightened scientific journalism. There is also one relevant problem, however, which was brought out effectively in Fahnstock's letter in the same issue. This is the fundamental problem of conservation and exploitation that can be stated, less delicately: "When rape is inevitable, relax and enjoy it." Certainly, if not this decade, then the next will see the mass exploitation of Arctic petroleum and minerals. We, as a society, must have large quantities of raw materials. Whether the extraction is done by private enterprise or by state corporations is quite immaterial. "Rape" in this sense is inevitable in the foreseeable future. Conservationists' pleas for total protection are laudable but fundamentally irrational. With radionuclides, pesticides, and other atmospheric pollutants, we have already saturated the entire environment of the earth; in other words, rape has already occurred.

Instead of attempting to prohibit exploration and exploitation, we must devise ways to accomplish these goals without totally destroying the environment. The Alaskan interior provides some interesting lessons. During the gold rush era, just before World War I, most of the interior (between the Alaska and Brooks Ranges) was prospected intensively for minerals. In the course of exploration, accidental or intentional fires cleared the major part of the Taiga forest from the area. Later, exploitation of the placer gold was by dredging, which completely chewed up the alluvium of the river valleys and left nothing but coarse gravel tailings behind. It is instructive to take a low, slow airplane flight around the Fairbanks area now. The Taiga itself in the area is almost completely restored. The flood plain forest here is an alteration of scrub-dominated "moss pasture" and tangled black spruce forest, an ecology adjusted to periodic fires, just like the vegetation of the California coast ranges. As it happens, the musk-oxen are the largest Arctic herbivore, and as domestic animals have proven to be quite docile and even friendly. The domestication project has been emphasized as a device to provide an economic base for Eskimo villagers, but musk-ox herding is also a sensible technique for exploiting the Arctic barrens without destroying their original character. As it happens, the musk-oxen now being reintroduced in Alaska (they had been extinguished by aboriginal hunting a century ago) are filling an empty ecologic niche. The other large herbivore of the tundra, caribou, is a moss-sedge feeder while the musk-ox prefers grasses and willows. The musk-ox project is an example of well-reasoned resource management and development. As well, it is specifically adjusted to the Arctic environment.

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Perhaps Arctic Alaska, because it is being opened at a time of national awareness of pollution and conservation problems, can serve as a laboratory for the development of techniques and a philosophy of rational exploitation without ruination.

F. F. Wright
Institute of Marine Sciences,
University of Alaska, College 99701

Reno: Appraisal of DRI

The short article “Trouble at Nevada research center” (29 Aug., p. 880) errs in that it presents an incomplete picture of the research climate at Nevada. The Desert Research Institute at Reno, from which Wendell A. Mordy was asked to resign last spring, is only one branch of the University of Nevada system which also includes the Reno campus, the Las Vegas campus, and the computing center. The article gives the impression that the difficulties and the resignation of Mordy were due to a conflict between two strong-willed men over monetary policies, that research at the university was the loser, and that the university chancellor was the villain.

Actually, the trouble goes much deeper. At the time DRI was authorized in 1960, several academic departments of the university at Reno were beginning to develop Ph.D. programs. It was understood that DRI would encourage research within the academic departments of the university, help build up research competence and potential by attracting outstanding personnel, and help procure research grants and contracts, along with some administrative duties.

DRI started to do some of these things, but before long began to spend all its efforts on building up its own research projects, sometimes in direct competition with established programs. Eventually it split off from the university at Reno and became an entity in itself as a separate branch of the university system. (The conflict over the administration of the computing center arose at that time.) One of its original purposes—that of stimulating research within academic departments—was either discontinued or at least cut to a minimum. Administration of grants and contracts was turned back to the university.

As a result, Mordy’s relationships with faculty members on the Reno campus left much to be desired. Many of us feel that very few of the academic departments have benefited appreciably, except in an indirect manner, by the existence of the DRI. Some have even suffered. We feel that so much more could have been done to benefit research throughout the university system if the administration of the DRI had been different, and we are not convinced that the resignation of Mordy will have an adverse effect on established research on the Reno or Las Vegas campuses.

Philip C. Bettlcr, George Barnes
Hugh N. Mozingo, Vernon E. Scheid
Ralph A. Young
University of Nevada, Reno 89507

Postage Meter Technology

In his letter Feeny (3 Oct.), exhorts his fellow scientists to use commemorative postage stamps on their letters. In this way, he reasons, one adds sparkle to his mail and, possibly, vitality to his publications. Aside from these gains, there may also be an educational benefit arguing for the use of postage stamps rather than metered mail.

When your secretary mails a half-ounce airmail letter for you to a colleague located say, at the University College of Dar es Salaam in Tanzania, she must affix 25 cents postage to the envelope. Given a postage meter this is done quite simply by engaging the lever for 25 cents. However, using postage stamps it becomes necessary to affix four 6-cent stamps and a 1-cent stamp, two 10’s and a 5, or some other combination totaling 25 cents. This operation requires that she reinforce her skill in arithmetic, a proficiency which might well become vestigial by continuously relying upon the postage meter. For this reason alone—the educational value of reinforcing basic quantitative skills—we should encourage the use of ordinary postage stamps and resist mulslishly the stealthy inroads of postage meter technology!

Robert Perloff
Graduate School of Business,
University of Pittsburgh,
Pittsburgh, Pennsylvania 15213

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