Letters

Encroachment in Glacier Park

Peugnet (Letters, 13 Oct.) supported the Glacier Peak Kennecott copper mine and contended that a 450-acre (182-hectare) open pit is a "mere flyspeck" in the 458,000-acre (185,000-hectare) Glacier Peak Wilderness Area. From the point of view of land area alone, or that of a jet passenger high above, this calculation is indeed true. It does not apply to a person on foot or one traveling in an auto. To illustrate, let me adopt the viewpoint of a mountaineer, because a mountaineer is well suited to cover and use as much of the area as possible; you might say he represents maximum usage. Whatever country he has difficulty penetrating is virtually impossible for the nonmountaineer. Furthermore, this allows me to speak from experience. The Suiattle River roughly divides the wilderness area into two parts. Along this river there exists a rustic though adequate road. The road serves its function well—it is not obnoxious because it is hidden along the river bank. Several campgrounds exist along this road. It terminates at an altitude of 1600 feet (488 meters) at the so-called "footbridge." From here excellent trails radiate north, east, and south and lead in short distances to the superb alpine meadows above. Beyond the valley to the north, beyond the trails, lies the rugged, glaciated mountain terrain that is known to climbers as the "Ptarmigan Traverse." This territory is so rugged that the first crossing was not made until 1938 and even today the rare parties that attempt the traverse struggle in these wild mountains for 10 days and emerge with memories to last a lifetime. This is some of the country that Sperry's account (1 Sept., p. 1021) referred to as "largely inaccessible" and so it is. To the south is the great barrier of Glacier Peak itself, 10,528 feet high, supporting eight glaciers on its flanks. From the footbridge it is 14 miles one way and 9000 vertical feet to the summit. Neither of these regions makes suitable family picnic grounds except for the hardy who love the adventure this wilderness offers. Further south lies the west central Cascades area, essentially roadless country of pristine beauty containing some of the last great mountain forests of our time. The point is that the Suiattle River valley and its companion Kennecott mine would form only a narrow "Yosemite Valley" in the Glacier Peak area. This is the grandly wooded valley which already contains an access road to the heart of the area and yet avoids the mountain barriers to the north and south; this is the valley which contains Miner's Ridge, Image Lake, and the Rivord Lakes ridge as outstanding examples of alpine grandeur; from this valley's edges the visitor can comfortably and safely view some of the wildest mountain terrain in America; and this valley at the most encompasses only 5000 practical recreational acres! Now would Puegnet still maintain that one acre out of every 10 for copper mining is a "mere flyspeck"? The Kennecott road and mine would not "open up" this vast wilderness at all but, due to their exposed position in the open meadows of Miner's Ridge, would greatly mar the loveliness of the only part of the Glacier Peak area accessible to a weekend tourist.

As for mine tailings, certainly a foregone conclusion that stream pollution and fish destruction would result cannot be definitely made, but other mines (the Holden copper mine for example, only 15 miles away, which laid sterile Railroad Creek), have caused pollution and it seems a very strong possibility in such a heavily rainwashed area that Kennecott's will be no favored exception. Furthermore, to pin strong hopes and arguments on a possible "beautiful" artificial lake resulting in an area of such outstanding natural beauty seems somewhat absurd. Lastly, let's not forget that the 20- to 25-year duration of the mine operation represents a generation of infringement on the peace and solitude of the Suiattle River valley, and another 25 years must elapse at least to erase the wound —effectively the lifetime of those who read this letter. Can we afford such an investment during which time our population and possibly our yearning for clean, untouched wilderness will double?

I agree with Peugnet that hindering the mine will slow our industrial expansion though I feel this slowdown would have few long-range effects, but also as a nation we no longer need fear our wilderness. We have fought hard for our land—tamed, combed, and curried an entire continent in only 200 years—and have earned the right and duty to protect the few wild sections that are left. Many of us today dimly realize that wildness, as untouched as possible, is rapidly becoming a far more valuable and rare national asset than more tons of copper, a 450-acre artificial lake, and a few more roads. It's alarming to realize also that the wilderness we own today is the last wilderness we shall ever again have. To me, wildness represents freedom, and freedom is our greatest strength.

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. . . Far more than 450 acres of the wilderness will be affected by the proposed operation. That figure is only the acreage of presently patented claims owned by Kennecott. There are approximately 3000 acres more in unpatented claims surrounding the site which will be utilized during the course of the operation. To this also must be added several hundred more acres for the millsite, tailing dump, settling pond, and townsite. Thus the area of wilderness land to be physically altered already approaches 4000 acres and not the "mere" 450 acres. The mine site is not in some isolated back corner of the Glacier Peak Wilderness. It is squarely in the center, 15 miles from any road, and astride the heavily used Cascade Crest Trail immediately adjacent to Image Lake, one of the most outstandingly beautiful places in the state of Washington, and one of the most popular and heavily used areas in the North Cascades. A 15-mile road must be built, together with transmission lines to service the operation. Since all this area will be inside the presently existing wilderness area, which was set aside for its value as solitude, one must calculate the effects of the

noise and dust from continued movement of trucks on the mining road and from blasting at the site for the next 20 years. The road would be cut through the virgin rain forest of the Suiattle River valley at the foot of the Glacier Peak itself. A conservative estimate of the area which will be affected by the sights and sounds of this operation for another generation is at least 22,000 acres. Our estimate is that this operation, with all its appurtenances, will upset and damage at least 26,000 acres of the wilderness during the course of the operation. When it is over, the scars will remain for centuries. The allegation has been made that nature will soon reclaim this area. Yet the Holden copper mine, 10 miles away, was abandoned 10 years ago, and the huge tailing piles are still there. Nothing is growing on them. And it seems likely that it will be hundreds of years before anything can. How long is long?

Peugnet implies that the area could be made accessible to the public by virtue of the mining road. Last year, over 10,000 people spent 45,000 man days visiting the Glacier Peak Wilderness, doubling its use in the last 4 years. It is already accessible and it is used to view an unmatched panorama of incredible beauty unmarred by any works of man. It is true that the nation needs minerals. But we are someday going to run short whether we mine every available site or not. The copper ore produced at this particular site would supply about 2 days' worth of U.S. consumption. This operation will tear out the heart of a great wilderness area forever. I think the most appropriate question to ask is whether we want to permit such an operation in such a place. Indeed, it might be said, "Never would so little be gained by so few at the expense of so many."

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Peugnet displays no understanding of the wilderness concept or of the relevant acts of Congress. According to federal law, the National Wilderness Areas are intended to remain in their original state, so as to perpetuate the "values of solitude, physical and mental challenge, scientific study, inspiration, and primitive recreation" (Wilderness Act, Title 36, Chapter II, Part 251—Land Uses). On mining claims validly established prior to inclusion of the land within the National Wilderness Preservation System, claimants are required by law to remove any "improvements" no longer needed for mining purposes, restore the original contour of the surface of the land, and promote its revegetation by natural means.

Peugnet's suggestion that Kennecott should leave a road open to the public and a "potentially beautiful lake" is not only incompatible with the wilderness concept but also against the law. . . . The suggestion that an artificial lake would improve Miner's Ridge is certain to outrage anyone who has visited the area. Equally outrageous is the suggestion that a road would be desirable. Tiny Image Lake, although it is 14 miles from the nearest road, is already so heavily used that the vegetation and terrain are in danger. The appearance of a public road, with parking lot, gasoline pumps, and other "improvements" would provide the *coup de grace* for another of our fragile wilderness areas.

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The 450-acre open pit that Kennecott proposes to gouge out of the top of Plummer Mountain may be "a mere flyspeck in the 458,000-acre Glacier Peak Wilderness Area," but it would be a festering eyesore visible from the entire Suiattle valley, an area a hundred times as large as the pit itself. The blasting could be heard over the rest of the wilderness area and clouds of dust would settle on a lake two miles away which is not just "potentially beautiful," but is already the most beautiful mountain lake in the United States.

Image Lake is a morning-glory pool with gently shelving white sand bottom around the edge and indigo-blue depths in the middle. It is set in a basin of alpine meadows spotted with clumps of fir trees and over the low side of the basin, 6 or 7 miles away and 4000 feet above, the white mass of Glacier Peak looms against the sky, the only one of the Cascade volcanoes which cannot be seen from a paved highway.

Apart from esthetic considerations, there are compelling practical objections to this "development." The possibility of water pollution is not just a matter of speculation; we can be guided by recent, nearby experience. Tailings from the Holden Mine on the

other side of Cloudy Pass did pollute streams and destroy fish. Even now, years after the operation was abandoned, a vast mound of inert, lifeless, brown dirt, loaded with sulfuric acid, fills half the valley of Railroad Creek, waiting for the spring floods from rain and melting snow to carry more of it down to Lake Chelan.

It may be "obvious that the excavation from which both ore and waste are derived could ultimately contain the tailings"; nevertheless, the concentration plant will be 1500 feet below the pit and it is unlikely that Kennecott will hoist the tailings back to their original level as a public service. They are likely to remain precariously perched on a steep mountainside where the spring runoff will have a much greater erosive effect than in the relatively level valley of Railroad Creek.

There are many other undeveloped ore deposits in the United States. One in the Twin Buttes area of Arizona between Tucson and Nogales is being prepared for mining by Anaconda Copper and they are currently running full-page advertisements (see the inside back cover of *Saturday Review*, 28 Oct.) to show how their strip operation is being camouflaged by plantings of indigenous shrubbery. In a flat cactus desert of Arizona this is hardly necessary; the pit is not an offensive contrast to the dry, bare landscape. I would like to invite Kennecott to publish a similar color photograph of Miner's Ridge and show by photomontage what their pit would look like.

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Liberties with Language

Richards' analysis (Letters, 20 Oct.) has enabled me to identify, retrospectively, an oddity I encountered some years ago in a manuscript. The text announced that, to allow for some variable or other, values in a table had been "adjustmented." This clearly represents the third term in the series: "to adjust; to make an adjustment; to adjustment." One hopes that no additional terms will make an appearance to be classificationed.

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Masquerade of Undirected Research

For almost a year Project Hindsight has been under discussion (18 Nov. 1966, p. 872; 2 Dec. 1966, p. 1123; 23 June, p. 1571; 29 Sept., p. 1512), and in all that time a point of fundamental importance has been ignored. "Undirected" research is *not* equivalent to pure or basic research.

Basic scientific research is concerned with new ideas, new concepts, new principles. It is not concerned with practical applications or development of things, but with the development of ideas fundamental to nature. For this reason it requires a very special scientific competence, even genius, as well as a highly developed sense of purpose and direction.

The hard fact is that the overwhelming majority of scientists are not capable of performing basic research to any significant extent, just as there are many well-trained musical arrangers but there are very few really good composers.

Unfortunately, few scientists are willing to admit to an incapability of accomplishing basic and fundamental research, particularly if they are in academic life. Hence there has arisen that form of self-deception in which the scientist reasons that if his work is "undirected"—not directed toward a specific goal—then it must be basic research. This may be one of the greatest *non sequiturs* of all time, but that does not prevent one afflicted with the delusion from fighting with astounding ferocity for funds for "undirected research." In a sense he is fighting to maintain status, face, and self-respect.

The main conclusion of Project Hindsight (and I support it) is that the usual scientist is more productive when he is given specific goals. To equate this to an attack on the value of basic research is ridiculous. The conclusion may be unpalatable to some, but still the evidence is there that a great deal of undirected research is mere timeserving and scientific busywork masquerading as basic research. The large body of scientists supported by public and corporate funds and allegedly engaged in basic research had best recognize this unhealthy situation and come to grips with it, rather than denounce those who have uncovered it.

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