Letters

Montana's Crusading Scientists

In Nelson's article concerning the role of the St. Louis Committee on Environmental Information (25 Aug., p. 903), Margaret Mead is reported to have suggested that there is no need for joint groups of scientists and citizens in small communities (because those scientists are already involved in other community organizations). However, the history of the Western Montana Scientists' Committee for Public Information would seem to argue otherwise. WMSCPI grew out of the concern of a small group of local scientists over radioactive fallout from nuclear testing. At that time, their expressions of concern were labeled "agitation," and these men were subjected to personal and political attacks by the public and the press. The Missoula group has never numbered more than 15 and, until recently, its budget has come directly from its members' pockets. Furthermore, rather than being able to exert influence through organizations in the community, the views of the members of WMSCPI have generally been opposed by these organizations. For example, despite the fact that Missoula has a higher concentration of tars in its atmosphere than Chicago, Pittsburgh, or New York City, influential organizations fought desperately to postpone effective air-pollution control and maintain the *status quo*.

In the past few years, WMSCPI members have worked successfully for the passage of state laws to restore land after strip mining, to prevent unnecessary alteration of stream courses, to block the downward reclassification of major streams and lakes, and to set stringent ambient air-quality standards. They have testified in the first intrastate air-pollution hearings which led to the temporary closing of a phosphate plant whose fluoride emissions had destroyed vegetation and crippled animals. They have campaigned to halt dumping of raw sewage and mining wastes into the Clark Fork of the Columbia River. They have continually condemned the practice, recently abandoned by the Forest Service, of aerial spraying with nonspecific antibiotics under the white pine blister rust-control program. They have fought to preserve wilderness areas. Perhaps, most notably, they have helped to change the climate of opinion in this area with respect to man's previously unquestioned right to pollute his environment and that of his neighbor. . . .

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New Source for MS-222

Van Bergeijk's "thunderstruck" colleagues (Letters, 27 Oct.) will be happy to learn that MS-222-Sandoz is available from Fisher Scientific Company. It is listed as 9671 ethyl *m*-aminobenzoate methanesulfonate and is assured to be of highest purity.

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We suggest tricaine (ethyl-*m*-aminobenzoate methanesulfonic acid), obtainable from the Sigma Chemical Company, among others, for use on frogs and salamanders at doses similar to those previously used with MS-222. We have had entirely comparable results thus far. As in the case of MS-222, tricaine is not particularly effective as an anesthetic when made up in distilled water or isotonic sodium chloride, but has maximum potency in "spring water" or isotonic potassium chloride.

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Persistence Transfer

The following is a brief account of some preliminary experiments we have made that appear to demonstrate the transfer of certain innate characteristics from one oscilloscope to another. More specifically, our object was to see whether a Tektronix 502 oscilloscope could be converted to a storage-scope with indefinite persistence. While this could, of course, be achieved by altering the tube and modifying the electrical circuits by conventional techniques, it nevertheless seemed worthwhile to test whether transfer of persistence could be effected by an extract made from a storage oscilloscope. Accordingly, a Tetronix Storage scope (RM 564) was allowed to run until there was no doubt about (i) the persistence of traces on the tube face; (ii) the effectiveness of the erasure mechanism; (iii) the stability of the image with respect to X- and Y-axes. The machine was then pounded with a Sears Roebuck ball peen hammer (Cat. No. 28B4652) on a Fisher Lab bench (Cat. No. B148) covered by a ½-inch stainless steel plate. The hammering was continued until all the electronic components and the tube were reduced to sufficiently small pieces to pass through a filter made of 007-mesh nylon stocking (seamless). In several experiments (2) the chassis was also ground up on a benchtop grinder (Sears No. 5634), but this procedure was not followed routinely, as it did not seem to affect the results materially and was both time-consuming and tedious. The storage oscilloscope fragments (S.O.F.) were next washed for 24 hours in CCl_4 in a cold room, dried at 70°C for 12 hours and stored in stoppered jars (Fisher Cat. No. 6139). For the actual experiment, S.O.F. was sprinkled over the chassis of a Tetronix 502 oscilloscope. The persistence of the after-glow was used as an index for evaluating the effects of this procedure. The complete results are shown in Table 1. In 9 out of 33 experiments there was no change in the persistence, in 6 there was a decrease in persistence, but in 18 there was an increase which was highly significant ($< .001$, t-test). Control experiments in which nonstorage oscilloscopes were extracted showed no change. While the average increase in persistence was not large—3.2 msec—it nevertheless suggested that some change had been wrought in the recipient oscilloscope by the S.O.F. Another point of interest was that such affected oscilloscopes required