Letters

Fire Control of Chaparral

Henry Hellmers' letter on fighting fire with fire (21 Nov.) points out the fallacy of working against the ecosystem. Since fire is a natural part of this environment, he proposes the use of fire to reduce the hazard in the chaparral-covered land. While I agree with Hellmers' basic proposal, I feel he is too general in its application and ignores or minimizes the problems involved and the possible harmful side effects. Some of these problems are:

1) Extremely steep slopes. Much of the mountain chaparral land lies on slopes above the angle of repose of loose material. Any disturbance of the vegetation holding it in place leads to mass wasting that moves material off the hillsides and into the stream channels. Workers in range management concluded 20 years ago that the vegetation should not be disturbed on slopes steeper than 50 percent.

2) Fuel volumes in a pure chaparral type do not build up enough in 9 years to permit a reburn. In fact, it is common practice among fire fighters in brush-covered areas to "herd" the fire toward old burns since the fires will go out or die down greatly in burns up to 10 years old. A longer rotation to permit fuel volume to increase poses extreme difficulties in controlling the fire. The only areas on which burning might safely be done are those where a stand of grass has become established either naturally or by the seeding efforts for watershed stabilization. And this herbaceous fuel disappears in about 3 years under the brush regrowth.

3) Some of the soil types in the Southern California chaparral react extremely unfavorably under fire. They become water repellent, greatly inhibiting infiltration, and increasing surface runoff and subsequent erosion. Workers on the San Dimas Experimental Forest have dubbed them "monster soils."

If we combine these limiting factors with Hellmers' approach of working with the environmental factors, we arrive at an entirely different treatment. Advantage could be taken of the large accidental fires which occur despite the efforts of the fire control agencies. Prescribed burning could be conducted on the areas where grass either came in naturally or resulted from an emergency revegetation seeding. Fires would be in grass, avoiding the hazard of trying to burn standing brush. The steep slopes would be left alone.

If this treatment were applied to areas where grass has adapted to the soil, greater success might be achieved than with the present Forest Service fuel break program where first consideration is given to fire control tactics and access for fire crews. There is also a possibility of natural conversion of the vegetation type. Burcham, for instance, suggested that many vegetation types are determined by the period of fire (*1*). Chaparral has survived under an average fire interval of about 30 years. Changing the frequency or period of burning may also change the vegetation type.

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Reference

1. L. T. Burcham, *Proc. Soc. Amer. Forest. 1959* (Society of American Foresters, Washington, D.C., 1959), pp. 180–185.

Reporting on Feminism

It surprises and saddens me that *Science* is willing to publish an article such as Luther J. Carter's "New feminism: Potent force in birth-control policy" (27 Feb., p. 1234). After reading it, I began to wonder how a report on a sociological meeting concerned with a less controversial subject would sound if, like Carter's, it contained descriptions of the physical appearance of the participants (with emphasis on deviations from the norm in dress and manner), statements about which stereotypes their personalities fitted, and reports on what they said in moments of exasperation. The workshop reported on by Carter obviously involved as participants some people who are unhappy and concerned because they feel that certain basic human rights have been denied them. This makes the bad manners and poor taste more serious. Far more disturbing than the lack of courtesy is the casual lack of humanity displayed here. A report like Carter's cheapens the image of *Science* and of scientists.

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Dialogue: Schizophrenia

In defense of his proposition that "the evidence must surely compel acknowledgment of a *genetic* [italics mine] contribution to schizophrenia" Heston does not provide much relevant evidence ("The genetics of schizophrenic and schizoid disease," 16 Jan., p. 249). The alternative to genetic causation is environment, and since maternal environment before birth is not controlled, Heston's own study on foster children has only succeeded in showing that the postnatal effects sometimes advanced as causes of schizophrenia are probably not the only cause. A genetic cause must be due to a difference in the subject's genes, not those of his mother or father. To my mind, data, good data, concerning monozygotic versus dizygotic twin incidence remain our best basis for inference.

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Carran raises an important point that can be settled quickly. In extensive family studies, notably those of Kallmann (*1*) and Böök (*2*), the proportion of schizophrenic children born to normal females and fathered by schizophrenic males was nearly the same as the proportion of schizophrenic children born to schizophrenic females and fathered by normal males. This evidence makes the uterine environment hypothesis difficult to defend.

I disagree with Carran's assertion that "the alternative to genetic causation is environment. . . ." It should be clear by now this either-or choice is not a feature of the real world. Gene environment interactions are essential in the