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OVERSHOOT: THE ECOLOGICAL BASIS OF REVOLUTIONARY CHANGE

By WM. E. CATTON, JR.

Urbana: University of Illinois Press. 1980. Pp. 298. \$16.50.

Professor Catton's subtitle, "The Ecological Basis of Revolutionary Change," reiterates a theme developed by Shepard and McKinley, Editors, in *Subversive Science* (Houghton Mifflin, 1969). If, by some legerdemain, the treatment of land and other resources could be made to fit what we know of the inorganic and organic world, our ways and values would have to be changed profoundly. That such an adjustment to reality is far more likely to result from harsh experience than from foresight is made clear by Catton.

The logic of his message is compressed on the front cover of the dust jacket. Any space occupied by living organisms has a definite carrying capacity. This can be and has been exceeded in a passing "Age of Exuberance" by borrowing from the future, or drawing on "Ghost Acreage" elsewhere. Such growth beyond carrying capacity has been encouraged by a belief that resources are unlimited and when this is questioned, by a faith that technology can come to the rescue. The ultimate penalty of die-off, repeated throughout history, has been deferred for us by drawdown on fossil energy, and soil, timber, and mineral depletion.

Catton knows both ecology and history. Discussing population pressure and density, he brings out the surprising judgment that the two are not synonymous. Pressure is probably greatest where high technology prevails; this supports Brown et al, *The Next Hundred Years* (Viking, 1957) who point out that the most stable cultures have been the agrarian.

Page 235 is especially notable. On it, we are reminded that "even 40 percent reduction of energy use would merely buy us 17 years' postponement of ultimate consequences." Further, "Depletion . . . will . . . irresistibly compel return to a simpler life. Will we accept it with any grace? Or will we kick and scream our way into it, imagining that we could always have everything we want if only those government people weren't forbidding it?"

This page also offers comfort to those who, like this reviewer, recall the days before the automobile and airplane and who can testify that a simpler mode of living need not depress the quality of life. There is also a wad to be chewed by those who would solve economic ills by freeing supply and demand from interference by the critics of

free enterprise. Actually, it is the home camp that fosters "the widespread, deliberate badgering of people into wanting more, more, more" by "an industry dedicated to augmenting human frustration" (p. 235). At the expense, we may add, of carrying capacity and postponement of the day of reckoning.

Increasing rapidly in numbers are those who realize that, as the present is a product of the past, we are today shaping the future. From many different backgrounds, they do not like what they see. To the artist, ugliness and disorder are symptoms of something wrong. Others, including prudent industrialists, are concerned about future supplies of raw materials. Geologists are aware that the reserves of mineral fuels and metals have their limits. Demographers see clearly that human numbers can easily become too great for their own good, while historians have recorded what happens when they do.

Physicists and chemists respect the unbending rules of experience that govern the interplay of energy and materials. Unless these scientists become captive to the endless challenge to their ingenuity, they should be among the first to realize that such rules express the limits, i.e., identify the limiting factors, to human activity.

Biologists, as they dig deeper into the profound mystery of life with ever more exquisite techniques, run the risks of loss of perspective. Yet, it must be said that as a group, they remain aware of the inescapable bond, expressed in form and function, between life and environment. They also share with geologists an appreciation of the antiquity of the planet Earth and of the time and change that have fitted it for an animal such as man, and he for it. (See, esp., Albritton, *The Abyss of Time*. Freeman, Cooper & Co., 1980; and Eiseley, *The Immense Journey* (1957)).

Since the author of *Overshoot* is a sociologist, it is only fair to acknowledge that his field has had its hands full with problems *inside* of communities. This can easily lead to greater concern for those now alive than for future generations. To Professor Catton we are indebted for his attention to the legacy we are creating and for his reminder that the Yale sociologist, William Graham Spencer (1840-1910), had emphasized the dependence of democratic institutions on favorable ecological circumstances. This interest in those yet unborn should go far to offset the criticism of Sumner as a "social Darwinist" for his frank acknowledgment of human differences and relative fitness for social and economic roles.

A restudy of Sumner may well reveal more of honest surgical realism than lack of sympathy and understanding. Meanwhile, there are increasing signs of an essentially humane and benevolent toughness. (See reviews of Hardin et al, 20 *Nat. Res. J.* 947 (1980) and 19 *Nat.*

Res. J. 753 (1979).) It is to this school of concern minus sentimentality that *Overshoot* is a welcome addition.

In commending this valuable book to the wide readership it deserves, I hesitate to offer suggestions. However, I do hope that future editions may add a few words on the problem of changing our culture pattern and, for the technologist, a reminder of the basic thermodynamic problems that threaten our present course.

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