The benefits of potential therapies for later-stage Alzheimer's are questioned: "[D]o the drugs simply extend the total period of decline without reducing the overall personal and social burdens the disease imposes?" It is observed that to properly judge the effectiveness of the biological control of invading species, the trade-offs associated with alternatives such as chemical control agents, or doing nothing, need to be carefully evaluated. Highlights of an online discussion on evolution and creationism in science education in the United States are presented. And, the "vogue word/bandwagon phenomenon" inspires a model poem.

Weighing the Benefits of New Alzheimer's Treatments

The results of a clinical trial of the drug memantine raise ethical and policy issues unmentioned in "Drug shows promise for advanced disease" (News of the Week, 21 Jul., p. 375). Decline in cognitive and behavioral functioning was slower in trial participants with moderately severe Alzheimer's disease receiving memantine than in those receiving placebo.

The benefits produced by this and other potential therapies for later-stage Alzheimer's must be carefully evaluated. Do patients receiving investigational drugs exhibit less personal distress or improved well-being during their last months? Is their care over time easier and less costly? Or do the drugs simply extend the total period of decline without reducing the overall personal and social burdens the disease imposes?

These are hard questions with controversial moral dimensions. But they must be addressed if research is to offer meaningful help to patients and families coping with the effects of this terrible illness.

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Biological Control of Invading Species

We agree with Donald R. Strong and Robert W. Pemberton (*Science*'s Compass, Policy Forum, "Ecology: Biological control of invading species—risk and reform," 16 June, p. 1969) (*1*) that invasive species pose major problems to managed and natural ecosystems in the United States. The fact that more than 50,000 species of nonnative plants, animals, and microbes have invaded the United States, where they cause more than $137 billion per year in damages, highlights a major ecological and conservation problem (*2*).

Strong and Pemberton (*1*) recommend that policies for the introduction of biological control agents be strengthened to prevent future ecological problems, and we generally support their recommendations. The weevil *Rhinocyllus conicus,* introduced for the biological control of exotic thistles, is a problem because it also attacks native thistle species (*1, 3*). This indicates that a more thorough screening of biocontrol agents for the exotic thistles and concern for feeding on native thistles should have preceded the release of the weevil.

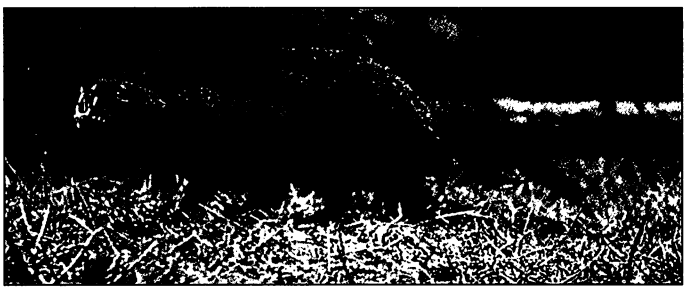
However, Strong and Pemberton do not make the essential ecological assessment of alternative strategies and trade-offs. This would involve comparing the effectiveness of the weevil for the control of exotic thistles with doing nothing and/or spraying with an herbicide for exotic thistle control. Both alternatives may result in significant ecological and conservation problems for the natural ecosystems.

In the United States, nonindigenous weeds, including exotic thistles, are spreading and invading approximately 700,000 hectare of wildlife habitat each year (*4*). Sometimes, one nonnative plant species competitively overruns an entire ecosystem. For example, in California, the exotic yellow-star thistle (*Centaurea solstitalis*) now dominates more than 4 million hectares of northern California grassland, resulting in major changes in biodiversity and species populations (*5*). Similarly, European cheatgrass (*Bromus tectorum*) is dramatically changing the vegetation and fauna of many natural ecosystems (*2*). These examples confirm the need for the protection and conservation of natural ecosystems.

Not to be ignored are many native organisms that are major pests to U.S. crops. Approximately 60% of the major arthropod pests of U.S. crops are native species that moved from feeding on native vegetation to feeding on introduced crops (about 98% of U.S. crops are introduced species) (*2*). For example, the Colorado potato beetle (*Leptinotarsa decemlineata*) moved from feeding on native vegetation to feeding on the introduced potato.

Native pests as well as exotic pests can be controlled by employing biocontrol methods, which have been successfully utilized against major pests with minimal risk (*6*). Indeed, biological controls of some insect and weed pests employing invertebrates and microbes have proven highly effective and have helped reduce pesticide use and the serious environmental problems associated with pesticides (*7*).

As Strong and Pemberton (*1*) emphasize, we must be cautious in introducing biological control agents to ensure that the introductions improve the target ecosystems. The trade-off of biocontrol introductions or doing nothing must be carefully assessed. Biological controls, when carefully implemented, should continue to play a valuable role in future pest control.



The Indian mongoose, introduced for the biological control of rats in Puerto Rico and Hawaii, has become a pest itself, typical of many vertebrate species used for biocontrol.

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References and Notes

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Educators Have Hard Choices; Nationally, Not Just in Kansas

Editors' Note: We have received many dEbates responses (see www.sciencemag.org/cgi/content/full/288/5467/813) to Eugenie C. Scotts's Science and Society Essay on