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Eradicating Ignorance

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BioScience

Organisms from Molecules to the Environment

American Institute of Biological Sciences

Eradicating Ignorance

Sometimes scientists despair at the challenge of expanding the public's understanding of science. Progress, however, is tangible, and one telling example last summer revolved around arthropods. In July, at the request of the US Department of Agriculture's Animal and Plant Health Inspection Service (USDA APHIS), the National Research Council (NRC), the operating arm of the National Academies, convened a committee charged with evaluating APHIS's response to two petitions filed by groups of citizens in California. The petitions opposed the agency's decision to classify the light brown apple moth (LBAM; *Epiphyas postvittana*), a species native to Australia, as a quarantine-significant pest.

The moth's presence in California was confirmed in 2007. In view of its reportedly broad host range—it infests numerous fruit crops, ornamentals, vegetables, and other economically important plants—APHIS classified the LBAM as "actionable" and "quarantine significant," and immediately initiated a program of quarantine and eradication. Petitioners contended that the LBAM is not demonstrably a pest of economic importance and is already too widespread to be eradicated, and thus should be declassified. They were unhappy with areawide spraying, even of pheromones, and argued for alternative management approaches. APHIS asked the NRC to provide a critical assessment of the science used to reach and defend its action.

Just as the NRC committee (which I chaired) was preparing its report, *Making Catfish Bait out of Government Boys: The Fight against Cattle Ticks and the Transformation of the Yeoman South* (University of Georgia Press, 2009) was published. The book's author, Claire Strom, described another federal arthropod eradication campaign launched a century earlier. In 1906, the USDA's Bureau of Animal Industry (BAI) implemented a program to eradicate the southern cattle tick from the United States in an effort to control babesiosis (Texas fever), a devastating protozoan disease of cattle vectored by the ticks. Then, as now, some citizens resented the program and questioned its feasibility. Although petitions were filed, these were mostly ignored. Some disgruntled citizens took another approach, dynamiting vats of cattle dip and, in the piney woods of Georgia, blowing away a 19-year-old BAI inspector with a shotgun blast.

Despite the violence, the program continued, and complete eradication (save for a small population in Florida) was proclaimed in 1943. The fate of the LBAM eradication effort is still undecided. However, the committee's report (*www.nap.edu/catalog.php?record_id=12762*) recommended that APHIS provide a more robust scientific basis for its actions and articulate its justification more effectively.

Today's citizens still have access to firearms, but they also have unprecedented access to scientific information. It is to everyone's benefit that sound science be seen as the more persuasive tool, and the scientific community must ensure that information accessible to the public is also comprehensible. Effective communication is paramount in determining the outcome of any scientific dispute. As the Year of Public Understanding of Science draws to a close, the need for a well-informed, scientifically literate public has not diminished; let's hope that this is just the beginning of the Century of Public Understanding of Science.

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