The discovery of a virus that causes mouse pox in commercial mouse serum prompts a reader to ask, "whether governmental oversight [of biologics testing] is sufficient." A writer points out that, while hurricane forecasts have become more accurate, the length of coastline warned per storm has increased. Openness is encouraged in public-private collaborations. It is pointed out that brain regions other than the nucleus accumbens have been linked to drug addiction. Scientists are urged to bring their knowledge to the courtroom. A clue to the origins of the Japanese population is offered. And the energy expenditure of a fidgeter is examined.

Threat to U.S. Mouse Colonies

We recently identified commercial mouse serum as the source of introduction of ectromelia virus, the causative agent of mousepox, a rare and devastating murine virus, into our institution. The serum was not intended to be used in vivo; however, media supplemented with the serum was inadvertently used to feed cells that were subsequently inoculated into mice. Fortunately, we were able to contain and eliminate the virus before it spread throughout our institutional colonies.

We have determined that the contaminated serum, which was obtained late last year, originated in China. The serum was imported as a batch of at least 43 liters and was filtered (0.2 μ) by the distributor. The serum has been distributed to major suppliers throughout the United States and has or may be sold as is or further processed to obtain a variety of serum-derived products.

The identification of the serum source, the size of the lot from which it originated, and the distribution throughout the country by many vendors raises concerns about the potential risk to our domestic mouse colonies. Further, as tens of thousands of mice are needed to generate this quantity of serum, and considering the lack of testing of imported material for mousepox and other agents of potential concern, the likelihood is that serum contaminated with mousepox may continue to be distributed.

The last major mousepox outbreak in the United States occurred in the late 1970s and early 1980s at the U.S. National Institutes of Health and a number of academic institutions. Tens of thousands of mice had to be destroyed at a cost of millions of dollars and lost research. If an outbreak of this magnitude occurs again, the impact could be considerably more devastating, as many of the gene-targeted murine models produced and used are maintained at a single institution and are irreplaceable.

This incident serves as a reminder of the importance of testing all biologics, including tumors and cell lines, of rodent origin or that have been passaged in rodents, for contamination with adventitious agents. It also raises the question of whether governmental oversight of this process is sufficient to protect a critical resource.

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Hurricane Forecasting

Richard A. Kerr's article about hurricane forecasts (News of the Week, 23 Apr., p. 563) captures the excitement of a science in the midst of discoveries with potential large societal significance. But the article misses some important context. At the same time that hurricane forecasts have become more accurate, the actual length of coastline warned per storm by the U.S. National Hurricane Center (NHC) has increased from less than 300 nautical miles (nm) in the late 1960s to about 400 nm over the past 10 years. According to the authors of a recent paper (1) that documented the increase in miles-of-coast warned, Jerry Jarrell (current NHC director) and Mark DeMaria, "the increase is somewhat surprising, because, since 1970 . . . official NHC track forecasts have been decreasing at about 1% per year" (1). They speculate that the improvement in track forecasts has instead translated into longer lead time, which has increased from about 18 hours to 24 hours, from the time the first warning is issued to the time that the storm's center crosses the coast. But there are other possible explanations as well, including (i) the desire of emergency managers (and elected officials) to base evacuation decisions on the NHC warnings, and thus request warnings be extended to cover their communities; (ii) a desire throughout the evacuation decision process to avoid the error of a strike on an unwarned population (thus, the forecast improvement could have translated into lower risk); and (iii) the fact that more and more people inhabit the coast, meaning that evacuation times are much longer, making necessary longer lead times and greater lengths of coastline warned. Unfortunately, in spite of the existence of these hypotheses, it has not been convincingly demonstrated why the coastline-warned-per-storm has increased during a period of decreasing forecast errors. Given the large costs involved with overwarning, both in unnecessary preparations and in potential public response, it would seem to be in the best interests of forecasters, policy officials, and the general public to obtain a greater understanding of the use of hurricane forecasts. As Kerr describes in his article, the hurricane research community is well positioned to
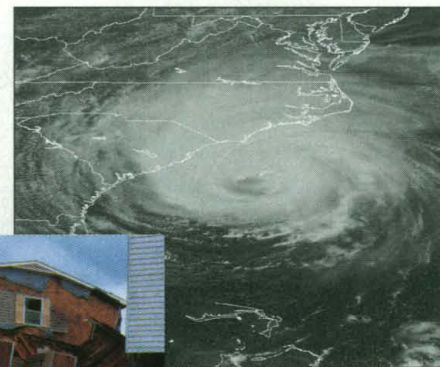
Hurricanes like 1996's Fran (above; damage, left) are being more accurately predicted, but are costly overwarnings occurring?

make dramatic advances in the science of forecasting, but for those forecasts to be of greatest use to decision-makers, and thus of greatest benefit to society, we must at the same time advance our understanding of the use of hurricane forecasts in the decision-making process.

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