"the time scale of decades [not centuries] is really enough for animals to evolve," notes David Reznick, an evolutionary biologist at the University of California, Riverside. "The idea that the [divergence] could be that rapid is really remarkable," adds Ben Sheldon, an evolutionary biologist at Oxford University, United Kingdom.

By adjusting rapidly to their new habitats, the finches "reduced mortality substantially in their young," enabling them to outcompete native species, adds Craig Benkman, an evolutionary ecologist at New Mexico State University in Las Cruces. The enhanced survival that resulted "could easily have been sufficient to make a difference between [this species] spreading or not," explains William Sutherland, an evolutionary biologist at the University of East Anglia, United Kingdom—and spread they did.

The house finch, *Carpodacus mexicanus*, calls California and deserts in the U.S. Southwest home, but in the early 20th century these birds were also marketed as pets along the East Coast. When sales were outlawed in 1939, pet store owners in New York released their house finch stocks, not realizing how successful these birds would be in that environment. Now, just 60 years later, "it's one of the most numerous urban bird" in much of the eastern United States, says Badyaev, who wanted to know how the birds could adapt so quickly to diverse environments.

From New York, the finches headed south, reaching Alabama about 25 years ago; California birds moved into Montana at about the same time. Immediately, differences in climate began to affect the two populations. Badyaev and Auburn colleague Geoffrey Hill tagged thousands of birds at each site and followed their offspring from hatching through adulthood. Over several years, they also looked at how many birds survived winters and how many offspring the tagged nesting pairs produced.

"Males and females grow differently both within and between populations," Badyaev found. In Alabama, males grow faster than females and have wider bills and longer tails, whereas in Montana, females grow faster and are bigger overall.

These diverse features result from differential growth patterns in the young, says Badyaev. And those growth patterns indicate that selection for particular adult traits has influenced development, he adds. In addition to climate influences, he suspects that lifestyle differences between the sexes in either state contributed to the differences between males and females and, subsequently, the two populations.

Badyaev then looked into what mechanism might be responsible for altering the growth patterns at each locale. Researchers have long known that female birds can control the sex of their offspring. And others have shown that in some bird species, the order in which eggs are laid and subsequently hatch influences the size of the resulting adults, with the first hatchlings tending to grow to be the biggest of the bunch. Badyaev found both factors at work in the finches. Alabaman females lay males first; the final egg laid is female. The opposite is true in Montana. Thus in Alabama, males get a jump on their nest mates and grow bigger, whereas in Montana, females have the growth advantage.

"Quite a lovely result," says Sheldon, who, like Reznick, is impressed that Badyaev carried out experiments to confirm his field observations. By switching eggs in one nest with eggs in others, Badyaev and his colleagues reaffirmed, for example, that the order in which the eggs were laid was most important in determining the relative size of the chicks—more so than, say, competition among nest mates. Overall, by biasing the sex of the eggs and laying them in a particular order, the mother increased chick survival by 10% to 20% over chicks from eggs laid in no particular order, they report. Thus adaptation along different trajectories helped make these finches successful in both states.

–ELIZABETH PENNISI

ENDANGERED SPECIES

Fur Flies Over Charges Of Misconduct

Amid cries of "malfeasance of the highest order," two federal agencies have launched investigations into the actions of seven federal and state biologists 2 years ago. The Washington state legislature and the U.S. Congress are also poised to hold hearings. The concern? That the biologists deliberately tried to skew the results of a federal survey of the threatened Canada lynx in national forests. The biologists, most of whom have not been identified, have denied the accusations, according to *The Washington Times*, which broke the story on 17 December.

The survey of 16 states and 57 national forests, which started in 1999, is designed to guide land management plans by determining where lynx reside. To search for the elusive animal, scientists collect hair left on rubbing posts and then send the samples to a lab for DNA analysis. The survey, coordinated by the Forest Service with help from the U.S. Fish and Wildlife Service and state agencies, has controversial implications: Efforts to protect the lynx could limit timber salvage operations—lynx make their dens in fallen trees—or conceivably prevent expansion of snowmobile areas.

In fall 2000, a Forest Service employee reportedly told superiors about irregularities in the survey protocol. The following February, the service hired an independent investigator. Four months later, according to *The Seattle Times*, the investigator concluded that although the biologists had deviated from the protocol, they were not trying to skew the results. "The integrity of the overall lynx sampling effort is being maintained," wrote the Forest Service in a 13 December memo requested by Congress.

But some in Congress are not convinced. Not only have Representatives James Hansen (R–UT), chair of the House Resources Committee and an advocate of land rights, and Scott McInnis (R–CO) scheduled a hearing for next month, but they have asked the General Accounting Office, the investigative arm of Congress, to probe the incident.

The Forest Service isn't commenting on the incident or its earlier investigation, citing the inspector general's probe, other than to say that the three Forest Service employees are no longer participating in the survey.

But according to Tim Waters, a spokesperson for the Washington Department of Fish and Wildlife (WDFW), part of the flap involves two WDFW biologists who participated in the survey. They sent in fur from a captive lynx and a stuffed bobcat as control samples. Jeff Bernatowicz, one of the WDFW biologists, told *Science* he wanted to check whether the lab could correctly identify lynx hair. There was reason for concern, he says, because another lab's analysis from an earlier survey had erroneously indicated that lynx were present in Oregon. But, Waters points out, controls weren't called for in the protocol, nor did the biologists notify other survey researchers about their actions.

If that's the case, lynx scientists say, the biologists' actions

Lynx lair. Critics charge that a study of lynx habitat was skewed, but scientists say they were just testing the lab.

CREDIT: JEFF LEPORE/PHOTO RESEARCHERS

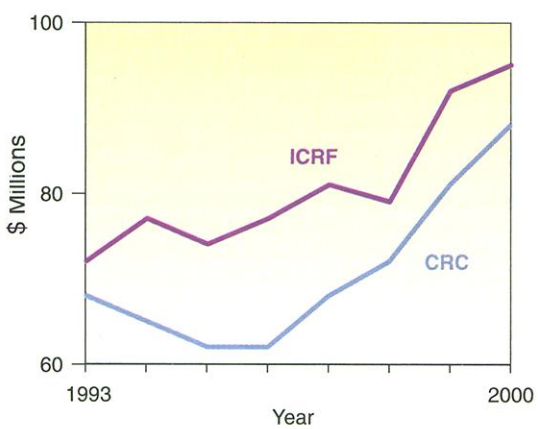
are not to be condoned but are hardly a major offense. "I don't think it's such a big deal," says Richard Reading, director of conservation biology at the Denver Zoological Foundation and co-chair of Colorado's Lynx and Wolverine Advisory Team. "They only needed to inform their superiors."

Yet that misstep may have cost the broader effort its credibility. As Forest Service Chief Dale Bosworth conceded in a statement, the scientists' actions "have called into question the scientific integrity of the interagency survey." **–ERIK STOKSTAD**

CANCER RESEARCH

Will Bigger Mean Better For U.K. Charity?

HERTFORDSHIRE, U.K.—After a long and sometimes tense courtship, the United Kingdom's two major cancer charities are ready to unite next month to form a giant funding agency similar to the U.S. National Cancer Institute (NCI). Cancer Research UK, which will be the world's biggest nongovernmental cancer research organization and the United Kingdom's largest fund-raiser, is expected to spark new collaborations at the often-frustrating nexus of basic and clinical research: turning promising test tube findings into experimental therapies.



Substantial dowries. Research funds have grown steadily for the U.K.'s two largest cancer charities.

British cancer researchers are hoping that the recipe for happiness within Cancer Research UK, as in many successful marriages, will be the complementary strengths of the partners. The Imperial Cancer Research Fund (ICRF) is a basic research powerhouse that mostly supports in-house labs, whereas the Cancer Research Campaign (CRC) focuses on prevention, treatment, and diagnostic research through extramural grants and at a handful of clinical units it underwrites.

Andrew Miller, interim chief executive for Cancer Research UK, says it didn't make sense for the two giants to compete for donations rather than collaborating. The charities had raised the bulk of their funds by vying for legacies and other private donations as well as corporate sponsorships. Both also run national networks of shops that sell goods such as secondhand clothing, bric-a-brac, and books. ICRF's 450 stores, staffed by an army of retirees, raise about $9 million a year—often in direct competition with CRC's 270 secondhand shops. "If someone came from outer space and examined this," says Miller, referring to the competition between the charities, "they would think it was a very daft situation."

An alien visitor next month may not find a land of milk and honey: Cancer Research UK's $189 million budget in 2002, although a third larger than the government's total spending this year on cancer research, is more than an order of magnitude smaller than NCI's budget. Still, an outsider would detect considerable enthusiasm for the new entity. The merger "is a very positive step," says Nick Lemoine of ICRF's molecular oncology unit at Imperial College in London. In the months since the merger plans were announced (*Science*, 26 January 2001, p. 575), Lemoine has had ample time to contemplate working more closely with CRC colleagues on gene therapy and other projects. And as a bittersweet bonus for their efforts, the 3000 scientists at Cancer Research UK can anticipate an extra $20 million or so after the elimination of 130 managerial and support jobs. Miller says the liberated funding will allow the organization to hire more researchers and boost grants in 2003.

One lingering concern in the current CRC-supported labs is that ICRF's core strengths will guide the research agenda—especially because ICRF director-general Paul Nurse, a 2001 Nobel laureate in physiology or medicine, will be Cancer Research UK's scientific chief. Nurse could not be reached for comment. Miller, however, has pledged that most research areas will be retained and that funding committees will consist of CRC and ICRF researchers in equal measure. In addition, the combined charity will remain part of a nascent coordinating body, the U.K. National Cancer Research Institute. Pressure at Cancer Research UK will come from having to do more, not less: Scientists at both ends of the research spectrum will be encouraged to team up on "translational" projects, in which the fruits of fundamental research are used to create experimental therapies.

Observers expect that Cancer Research UK will have an easier time wooing donors than the two charities had as swinging singles. "There were concerns early on that one

CREDITS: (TOP TO BOTTOM) CRC/ICRF; DIANE CLARIDGE/AP

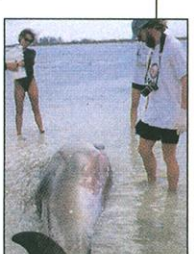
ScienceScope

Research Injection Work on infectious diseases got a boost last month with the opening of a new vaccine center at the University of Texas Medical Branch (UTMB) in Galveston. Scientists there plan to develop vaccines for a range of pathogens—from bioterror threats to sexually transmitted diseases—and ponder policy issues, such as the growing public resistance to vaccination.

The center was kick-started by a $3.75 million grant from the John Sealy Memorial Endowment, a charity that gives exclusively to UTMB. It will be directed by herpes vaccine researcher Lawrence Stanberry, who says he has lured Martin Myers, director of the U.S. National Vaccine Program Office, to be the resident policy wonk.

The new center will allow UTMB—already noted for infectious disease research (*Science*, 28 April 2000, p. 598)—"to make some very important contributions" to vaccine development, predicts John La Montagne, deputy director of the National Institute of Allergy and Infectious Diseases in Bethesda, Maryland.

Victims of Sound The U.S. Navy has concluded that a sonar training exercise caused a mass whale stranding in the Bahamas in March 2000 that killed several rare beaked whales (*Science*, 26 January 2001, p. 576). In a report released 20 December 2001, the Navy and the National Marine Fisheries Service conclude that the strandings were caused by an "unusual combination" of factors, including sea-bottom contours and water conditions that may have channeled and magnified sonar pings. The researchers could not pinpoint exactly how the sound energy injured the whales, but the acoustic assault appears to have left some dazed and confused, causing them to swim ashore. The Navy says that it will try to avoid using sonar in similar situations during training runs. But Naomi Rose, a marine mammal expert with the Humane Society of the United States in Gaithersburg, Maryland, says the report is "carefully worded" so that it does not give ammunition to critics of SURTASS LFA, a new, lower frequency sonar system the Navy plans to deploy.



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