Biomedicine

Allergies to pets: Nothing to sneeze at

Romance fizzled when *her* cats prompted *his* bleary-eyed sneezing and wheezing. *She* refused to give up the feline family members, and *he* refused to move in with the allergenic duo, producing yet another casualty of the animal allergy wars.

Up to 60 percent of all U.S. families own pets, while 20 percent of families include members with allergies or asthma aggravated by animals, producing a tension underestimated by many allergists, said specialists at a recent Washington, D.C., symposium sponsored by the National Institutes of Health.

For most animals, the specific proteins that initiate an allergic response in humans have yet to be pinpointed, though recent studies hint that the noxious agents are as prevalent in saliva or urine as they are in animal pelts, says Michael Schumacher of the University of Arizona Health Sciences Center in Tucson. Unlike many plant pollens that can be effective in reducing allergic sensitivity when injected in tiny, controlled doses, allergy shots against animals usually aren't very helpful, he says. What's a pet owner to do?

"While removing the animal from the home is traumatic, living with bronchial asthma is possibily even more traumatic," says Raymond Slaven of the St. Louis University School of Medicine, voicing a common view that avoidance is the best cure. But Aaron Katcher, a psychiatrist at the University of Pennsylvania, says such a policy is unrealistic. Instead, he suggests removal of the pet only after strategies such as meticulous house vacuuming, restriction of the animal to a limited area of the home, or medication with symptom-relieving drugs have been attempted.

"The goal should be to let the family keep the pet if the [health] cost is not too great," says Katcher, who likens the conflict to the dilemma that confronted allergists 30 years ago who tried to keep asthmatics from exercise that provoked their illness. In contrast, he says, doctors today recognize the health benefits of exercise and prescribe moderate amounts for wheezing patients, managing mild symptoms with drugs. "There is agreement now that some symptoms can be tolerated," he says. "Doctors need to recognize that the family-pet bond can be just as important."

Tonsil removal aids sorest throats

Swollen, red tonsils once served as a surgeon's call to arms. But the risks of anesthesia and post-operative complications plus questions of benefit have left doctors divided about the value of tonsillectomy. Now, in the first large U.S. study of the surgery's effectiveness, a team from the University of Pittsburgh School of Medicine says that for the 10 to 15 percent of patients whose sore throats are severe and recurrent, removal of the tonsils seems more effective than drugs.

Jack L. Paradise and colleagues restricted their 11-year study to 187 children "severely affected" by chronically sore throats. To be eligible, a child must have had at least seven episodes of throat infection with fever in the preceding year or at least three such episodes per year in the preceding three years. About half the children were randomly assigned to either drug treatment or surgery, while the other patients were slotted according to parental preference.

Results from both groups showed a drop in post-treatment throat infections that was significantly lower in surgery patients than in those treated with drugs, though the number and severity of infections in nonsurgical patients also fell.

"The almost uniformly favorable outcome in subjects who underwent surgery, combined with the variable outcome in those who did not, appears to justify but by no means to mandate the performance of tonsillectomy in children with comparable throat-infection experiences," report the scientists in the March 15 NEW ENGLAND JOURNAL OF MEDICINE. They have just begun a study of the benefits of surgery in children less severely afflicted.

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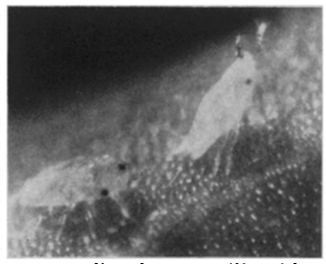
Blown away: Riders on the wind



At the first gusts of wind, the wingless insect — an iceplant scale — lifts its antennae and rotates its body to face downwind. It then rears up on its back legs until it is lifted into the air. Once up, the scale arches backwards and extends its legs and antennae. These aeronautic maneuvers, described in the March 9 SCIENCE, contradict the prevailing idea that scale infestations are spread only by accidental transport.

The iceplant scale is a significant economic threat in California where 6,000 acres of iceplants border the highways. Jan Washburn of the University of California at Berkeley and his brother Libe Washburn of the Scripps Institute of Oceanography in La Jolla, Calif., report that the iceplant scale solicits the wind with elaborate preflight and inflight behaviors. They observed under a microscope newly hatched scales, which are less than a fiftieth of an inch long. The scientists found that these maneuvers, as a response to airstreams up to 10 miles per hour, begin when the insects are one to five days old. Washburn and Washburn report that when the insect stands upright in an air current, it increases its chance of being propelled into the air by doubling its surface area, increasing the drag force and contacting faster air currents. The airborne posture reduces the speed at which the scale falls, and thus extends its total air time.

The researchers speculate that scales frequently hatch on plants already devastated by previous generations, and therefore their survival depends on reaching new feeding grounds. Immediately after hatching, the scale hunkers down, away from air currents, perhaps to allow time to search for food at the birth site before throwing its fate to the winds.

Springtime for pandas

Hope springs eternal at the National Zoo in Washington, D.C. This may be the year for a healthy panda cub. On the last official day of winter, Ling-Ling and Hsing-Hsing mated twice of their own accord. The morning rendezvous at 8:18 a.m., just after the pandas' breakfast, lasted almost one minute. A second get-together, at 1:08 p.m., lasted a full two minutes. Zoo officials say these natural matings rule out any need for artificial insemination this year. Last year a single natural mating, the first, produced a cub, but it died of pneumonia when only a few hours old.

Multiplying embryo transplant power

More calves per embryo is a goal of modern animal husbandry. Dividing embryos in two, and transferring the halves into two recipient cows, is a procedure already in use by some farmers and commercial cattle firms. Now animal scientists at Louisiana State University in Baton Rouge report birth of calves from quarters, rather than halves, of embryos. Although similar work has been done in a number of other laboratories, they say their procedure is the first to have commercial implications. They use as their starting material an embryo of the stage typically used in commercial embryo transplant, a 7-day-old embryo with 64 or more cells. No surgery is required either for the collection or the transplantation of the embryo. Of the four quarter-embryos transplanted, only two gave rise to calves in the recent experiment. "We have to look at this with more embryos to see if all four have the potential to maintain pregnancy," says Steve Voelkel, who worked with Robert A. Godke on this project. The first "quarter-calf" to result from this procedure was normal, healthy and weighed 104 pounds at birth. It was appropriately named Two Bits.