

Bird Doctors: Fight for Flight

Mending bird bones: A biomedical engineer's dream, a veterinarian's nightmare

by Deedee Pendleton

Funding research for cancer is one thing. But paying people to patch up hurt birds is just asking too much, admits William Halliwell, a University of Missouri pathologist. An instructor in veterinary medicine, Halliwell has promoted a unique course called wild bird care, specifically geared at repairing and releasing injured birds. But he hasn't gotten too far with it.

Unlike Cornell University's extensive captive breeding program, Halliwell proposes intricate research projects on such delicate operations as bone transplants and wing amputations on pigeons, geese and birds of prey. His protégé, 24-year-old Greg Ivins, has spent almost two years of graduate work perfecting a graphite derivative tough enough to keep a bird sailing, yet light and porous, like natural bird bones. His chief complaint: not enough money.

Phil Ensley, a Salt Lake City veterinarian, agrees. "The number of birds actually rehabilitated is just a drop in the bucket," and finding the finances to support such a low-return project is a tough job.

So most of today's research on bird medicine is done in backyards, where bird lovers, usually amateurs, are doctoring injured wildlife by trial and error. But the idea of mending a bullet-shattered wing makes most pathologists shutter. Because of their pneumatic bone structure, part of a bird's breathing is cycled through its bones. But once a bone snaps, a suction forms, literally pulling bacteria into the wound every time the bird inhales. The resultant infected, gaping wound is almost impossible to repair, Halliwell says. Matching bone fragments, usually splintered and jagged, is equally inconceivable. Most veterinarians use an intra-medullary pin, but unless done exactly right, the operation will leave the bird aerodynamically off balance, and unable to control wing coordination in flight.

In using pyrolytic graphite "bones," Ivins had hoped bone cells would infiltrate the shattered bone ending, and form a bond with the porous graphite substitute, but filing the pyrolytic to sticks narrow enough for bone trans-

plant is difficult, and too often the graphite breaks even before it is implanted. All three healthy birds receiving Ivins's artificial bone recovered.

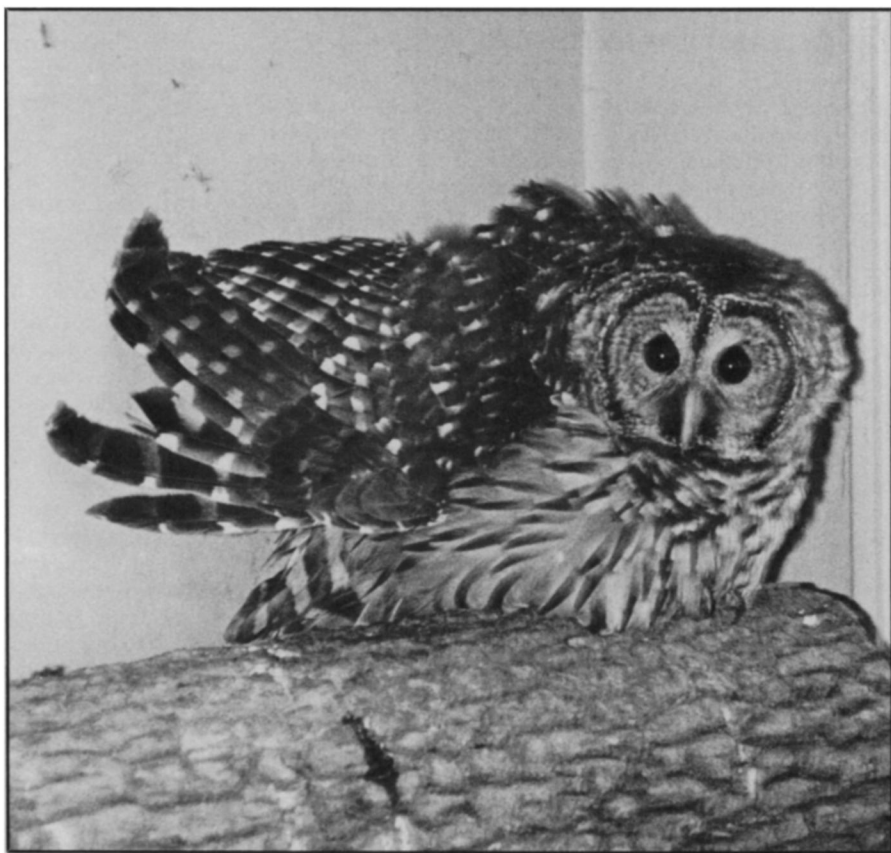
Mal Raff, a University of California astrophysicist, has more than 6,000 computer cards on bird blood samples and case histories collected and studied since 1971. The serum is submitted to a veterinary laboratory for examination for antibodies. In time, scientists hope to collect data on the levels of such antibodies helpful in diagnosing diseased birds. Raff's patients, as many as 400 a month, are almost exclusively passerine (perching) birds, attacked by domestic animals, shot or victims of power lines and pole traps.

But it's hard to call it research, most scientists will tell you, since few consistent data have been collected, few birds are available as experimental animals (pigeons are often used) and

more often than not local veterinarians do the repair work, then send the patient home with its rescuer. Little inter-communication about bird medicine is in circulation (although several books on the subject have been published), and the variety of both bird and injury changes by region and season. Keeping track of the bird once it's been released is almost impossible.

Many veterinarians and college professors promoting rehabilitation research are falconers. Most of them keep it under their hats, though, because they say the press has thrown so many rotten eggs at falconers lately they can't get Government grants or private donations to finance their work.

Antifalconers may have a point. A bird in the hand, researchers often admit, is hard to turn loose. James W. Foster at the Seattle Zoo is one ornithologist who admittedly tags and sad-



Found in an incinerator, this barred owl was fed for nine months before recovering.

dles his eagles and hawks with radio tracking devices so that, although free, the patient becomes an observation specimen for the researcher anxious to learn more about its flight habits and hunting success after rehabilitation. (Foster even has a graduate student feeding his free-flying convalescent eagles dead rabbits every day they appear with empty crops.)

About 30 percent of all rescued birds die. But what about the rest, those birds permanently crippled? Many of them are donated to zoos, given to privately owned bird sanctuaries or simply destroyed. Patrick Redig of the University of Minnesota says more and more rehabilitation experts are hoping to observe breeding patterns in captive birds; back yard hospitals and university sanctuaries are becoming private courtship grounds for crippled birds. An author on the subject, Rosemary Collett of Venice, Fla., has been particularly successful in encouraging breeding among her 30 or more disabled pelicans, but she contends it is because her birds are "patients, not pets," that they have reverted to instinct even while confined. But breeding success among crippled birds is extremely low, especially among falcons, because many of the courtship rituals involve aerial acrobatics and soaring. Artificial insemination, used excessively by falconers, is nothing new; but offspring born in aviaries, John Burkett, a British scientist explains,

aren't always predictable. In breeding owls he found youngsters far less belligerent, less cautious and lacking in good judgment. "It is obviously instinctive for them to feed, but they are taught to select their prey and hunt," something captive parents either can't or won't do. "These aviary birds definitely lack something their counterparts in the wild have," he concludes.

Many outsiders see the life-saving attempts on amputee and crippled birds as pointless. A bird that can't fly and won't breed might as well be dead, the argument goes. But Ensley disagrees. He considers permanently crippled, confined birds to be valuable experimental animals, although he doesn't label them as such. He says these birds will inevitably develop characteristic liver and tumor ailments wild birds often die from, and that by studying and treating the confined invalid, veterinarians can learn vital treatment information to be applied to emergency cases. "Therein lies the benefit" of saving even a deformed bird, he says. Collett, a hardy environmentalist, believes in using her handicapped patients to educate the public, so she chauffeurs her crippled birds to schools, hoping to convert slingshot enthusiasts into bird defenders.

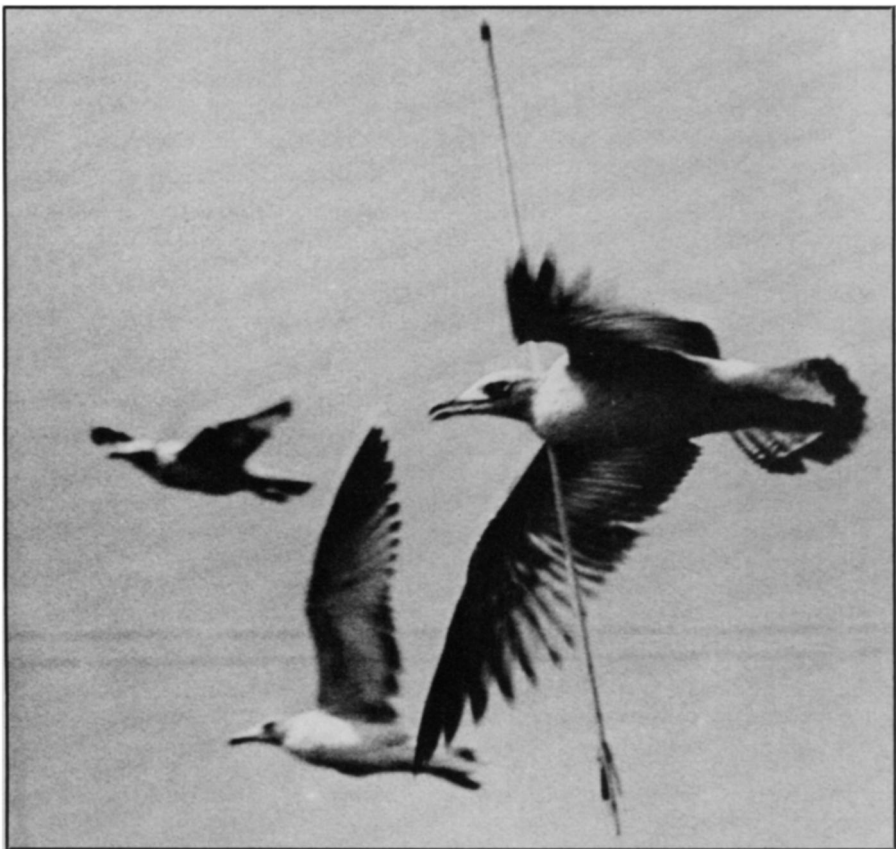
Most birds injured in the wild aren't rescued for about two weeks; it takes that long for infection and starvation to sufficiently weaken the bird so it can't run away from humans. In the

interim, the injured bird scavenges along shorelines, in city dumps or begs food at fish docks. Most people who have the presence of mind to pick up a hurt bird (many people are afraid of them), take it to a familiar veterinarian, who often does the work free. A few, such as Ensley, charge would-be rescuers for the medicine. Naturally, this quickly discourages samaritans, but it's part of his firm's policy.

Becoming increasingly common in treating injured birds is the pumping of nutrient-rich liquids into the bird's stomach, by-passing the digestive tract altogether. Generally the most effective anesthetics for birds, B. E. Mattingly of New Mexico says, are gases, but veterinarians often hesitate even to operate on birds because the level of trauma is so high.

Once the bird has received medical attention, what next? Ralph T. Heath, founder and manager of a 400-bird sanctuary in St. Petersburg, Fla., says veterinarians are usually only too glad to get rid of a bird once they've patched it up, because there just isn't a place in a doctor's office for a pelican or eagle. Unless the rescuer happens to have his own backyard hospital, the patient could cause even more trouble. In Sarasota, Fla., Melrose McMichel runs a 24-hour free ambulance service to shuttle birds rescued in Sarasota to bird refuges in either Venice or Bradenton, a 50-mile jaunt any way you look at it. But there aren't many services like McMichel's around. If the amateur is forced to take the bird home, and manages to keep it alive, helping it to learn to fly again may cause serious problems for the bird. Most novices know nothing about flying a bird, and if the patient is a raptor, finding a falconer to do the work may be the only recourse. Many people are reluctant to turn a raptor over to a falconer because they think once he rehabilitates a raptor, the falconer won't let the bird go.

A few bird devotees say publicity about rehabilitation projects only tends to give amateurs the idea raising hurt birds would be fun. Raff is one. He believes nonprofessionals should stay out of the field altogether, that only those trained in zoology or veterinary medicine have any business tampering with wildlife, and that unless those who are helping birds are at the same time gathering and simulating meaningful data, those birds injured in the wild are better left there. Raff, who deals mainly with passerines, is firmly convinced that rehabilitation is largely a futile venture, and that the frustration of watching so many birds die after treatment makes the job depressing and confining. And without either money or enthusiasm, bird rehabilitation research may never get off the ground. □



Shot but not killed, this gull will probably die a slow death by strangulation.