

1992 NYS ENVIRONMENTAL LEGISLATION

Michael Sperling

Back in December, I started reprinting descriptions of the bills that the Albany-based nonprofit and nonpartisan Environmental Planning Lobby used to individually rate our State Senators' and Assemblymen's performances in 1992. Eight bills were given three trees (see rating system below); all passed the Assembly, but only one passed the State Senate and became law. Eleven were given two trees; all passed the Assembly, but only two passed the Senate and became law. In our last installment, five one-tree bills were listed; all five passed the Assembly, but none passed our Senate. If you'd like to receive back issues of the *Skimmer*, please call or write.

For 1993, we still have the same balance of power in New York State's legislature and the same leadership (Democrat Saul Weprin as Assembly Speaker and Republican Ralph Marino as Senate Majority Leader), but there are signs that Marino may actually allow one of the most crucial pro-environment bills to reach the Senate floor this year — the environmental trust fund (now called the environmental assistance fund) that died in the Senate in 1991 and 1992.

Before we complete our 1992 recap, here's the rating system used by EPL:

3 Trees. Proposed legislation would be of significant assistance and benefit to help resolve a pressing problem facing New York's environment.

2 Trees. Proposed legislation would provide substantial benefit to New York's environment.

1 Tree. Proposed legislation would be beneficial to some aspect of New York's environment.

1 Stack. Proposed legislation would be detrimental to the cause of environmental protection in New York.

2 Stacks. Proposed legislation would do substantial harm to New York's environment.

3 Stacks. Proposed legislation would likely result in major or lasting harm to New York's environment.

Tug Hill Commission ▲. This bill extends the existence of the Tug Hill Commission for an additional three years. Since 1972, the Commission has served as a useful network and effective catalyst for regional planning and preservations in the Tug Hill region of Central New York. Other regions of the state continue to look to this Commission's work for innovative guidance in their own regional planning. A11985 (Hinchey) / S8414 (McHugh) passed both houses and was signed into law by the Governor.

Pesticide Reporting ▲. This bill requires state agencies, public authorities, and public benefit corporations to compile an annual report of pesticide use and establish pesticide and herbicide reduction policies. Although EPL recommends that this bill be amended to give more specific guidance to enable agencies to provide meaningful data, the measure recognizes the feasibility and benefits of reducing the state's use of highly toxic substances that are often unnecessary or easily replaced by safer alternatives. S1464-C (Daly) passed the Senate but did not have an Assembly sponsor.

Sewage Power Sources ▲. This measure requires large sewage disposal systems and those near marine and coastal waters to be equipped with emergency sources of power. In the event of an energy shortage, backup power source generators would prevent tons of raw sewage from spilling out of the disposal facilities and into the waters of the state. The Hudson River estuary, an important spawning area and habitat for many aquatic species, is especially threatened by raw sewage spills. A2830-A (DiNapoli) / S1828-A (Johnson) passed the Senate but was held in the Assembly Codes Committee.

Hazardous Substance Reporting ▲. This bill expands the annual inspection of roads and highways performed by the Department of Transportation to include reporting the existence of any known or suspected petroleum, hazardous substances, solid waste, or hazardous waste. The Department of Environmental Conservation (DEC) would then inspect and clean up these hazards which pose an imminent threat to the safety and health of travelers. A3429 (Hinchey) / S2288 (Johnson) passed the Senate but was held in the Assembly Ways and Means Committee.

Sewage Floatables ▲. DEC estimates that an average of 172 million gallons of raw sewage is released daily into New York's marine environment from sewer overflows. This sewage contains floatable material such as syringes and plastics, which contaminate New York's water, litter our beaches, and threaten the health of New York's citizens. This bill requires that all sewer treatment outfalls into marine or coastal waters be equipped with devices to remove all floatable material from the sewage discharged. S2316-A (Johnson) passed the Senate but did not have an Assembly sponsor.

Flow Control Package I. These three bills establish laws and regulations for Greene, Tompkins, and Sullivan counties to impose limitations on competition with regard to the collection, transportation, storage, and disposal of solid waste. These county laws would override any conflicting local law. EPL opposes all solid waste "flow control" measures that do not specifically mandate that all recyclable material actually be recycled and not permitted to be buried or incinerated. All too often, flow control measures that do not address recycling facilitate the construction of an incinerator, which requires a consistent stream of solid waste. This usually discourages meaningful recycling programs and may even lead to the importation of waste from other counties. A10151-A (Faso) / S7317-A (Cook), A10167-B (Luster) / S7348-B (Seward), and A10655-A (Coombe) / S7787 (Cook) passed both houses and were signed into law by the Governor.

Catskill Park Signs I. Much too often, the beauty and integrity of New York's scenic areas are compromised by overzealous billboards, signs, and other advertisements for the area's commercial interests. However, current regulation allows the Catskill and Adirondack Parks to preserve much of their beautiful vistas that keep tourists coming back again and again. This bill would undermine existing regulation and

ARCHAEOPTERYX — IS IT A BIRD? (Is it a Dinosaur? Superman? Should We Care?)

Betty Borowsky

In 1861, paleontologists found a well-preserved fossil in Bavaria. The fossil, about the size of a crow and believed to be about 140 million years old, was so well preserved that the teeth of the skull and the bones of the tail were extremely well defined. To the scientists' surprise and delight, in addition to these reptilian characteristics, the fossil also had wings and its body was covered with feathers. The fossil was named *Archaeopteryx* ("archae" for "old" and "pteryx" for "wing") and its combination of features suggested that it might be a link between the reptiles and the birds. Since the original discovery, other specimens of *Archaeopteryx* have been found and scientists have had a field day arguing about whether this species was in the direct evolutionary path that led to modern birds or was an offshoot.

The most recent controversy centers around a study by Alan Feduccia of the University of North Carolina, who concluded that "*Archaeopteryx* probably cannot tell us much about the early origins of feathers and flight in true protobirds because *Archaeopteryx* was, in the modern sense, a true bird." In other words, *Archaeopteryx* was not a link between the reptiles and the birds. The study received a lot of attention, with an article in the *New York Times* and a commentary in *Science*, the journal in which the study was published. Actually, the study and the attendant controversy reveal more about how science works than about the evolution of birds.

Science is based on common sense. One of science's most fundamental assumptions is that two things equal to the same thing are equal to each other. In biological systems, this means that if two things have the same structure, then they have the same function. For example, the wings of a penguin and the flippers of a seal look very much the same and, sure enough, they are used primarily to propel their owners through the water. Among the birds, relatively short, thick bills generally indicate that the birds are seedeaters, and so on. (Now, biological systems are complex, and sometimes this assumption turns out to be incorrect, but it generally holds and even when it isn't true, the assumption forms the basis of a testable hypothesis, which can lead to interesting new information).

Until this recent study, most researchers were of the opinion that birds had evolved from the dinosaurs. No one questions that birds evolved from reptiles, because modern birds have scales on their legs and lay eggs. Most paleontologists felt that the birds evolved from dinosaurs because, among other things, one group of dinosaurs, *Archaeopteryx*, and modern birds have wishbones, the fused shoulder bones that assist flight.

Dr. Feduccia measured the curvature of the claws of 30 species of birds: 10 ground dwellers, 10 perchers, and 10 trunk climbers (woodpeckers, etc.) to see whether the claw geometries of birds with different habits would be different.

(He omitted species that depend on their claws for other functions as well, such as raptors, who use the claws to capture prey.) He found that ground dwellers tend to have straighter claws than perchers or climbers. This is easily explained — while perching birds would benefit from curved claws to help them grasp branches, ground dwellers would be impeded by curved claws, which would force them to limp along the ground. (Now, we know that most perchers spend some time on the ground. They just can't move around very well there. Think of how some sparrows hop on the ground, or how awkward a pigeon looks as it careens from side to side when it's in a hurry. Typically, when a perching bird has to move fast, it takes off and flies away.)

Dr. Feduccia's next step was to measure the curvatures of the claws of *Archaeopteryx* to see whether they matched the ground dwellers or the others. He found that the claws of *Archaeopteryx*'s feet were like those of perching birds. Ergo, it must have been a perching bird.

Let's look at this study. There is no way we will ever be able to prove that *Archaeopteryx* actually perched; the species has been extinct for a long time. However, in the absence of any contradictory data, and based on common sense, it is reasonable to conclude that Dr. Feduccia is right and that this species was a percher.

What about the global conclusion that *Archaeopteryx* was a true bird? Dr. Feduccia described other features of this fossil that suggest it was a bird. It had true feathers. Further, the microstructure of the feathers looked like that of modern, flying birds, not like the feathers of flightless species. *Archaeopteryx* had a wishbone indistinguishable from that of modern birds; the large rear toe was fully reversed, as in modern perching birds, but different from any known dinosaur. In addition, its bones were hollow, an adaptation that reduces an animal's weight to make it easier to fly. All these things suggest that this species was closer to the birds than to the dinosaurs. However, *Archaeopteryx* also had teeth and a long, bony tail (although covered with feathers), and lacked the typical keeled sternum of birds. This bone is where the large flight muscles attach and is necessary to permit true, vigorous flight.

Even Dr. Feduccia said that the bird probably could not fly as well as modern birds. So was it a bird, was it a dinosaur, or was it a link? Well, should we really care?

Now this was a really neat study (and I wish I had thought of it), but in truth the revelation that *Archaeopteryx* perched does not force us to reject the possibility that it was in the main path — it merely shows that the animal spent more time in trees than on the ground. It is entirely possible that there were dinosaurs that spent time in trees, too, but we haven't found their fossils yet.

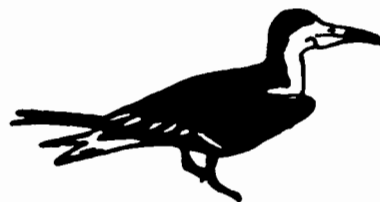
We will need more fossils to tell us more about the links between the reptiles and/or the dinosaurs and the birds, and the nature of things is that we may never get them. In the meantime, in the interest of truth, let's not conclude more from an experiment than the facts warrant.

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