

Feathers Still Fly in Row over Fossil Bird

Scientists at Britain's Natural History Museum claim new evidence proves that their fossil of Archaeopteryx is genuine. Two prominent astronomers continue to insist that it is a fake

THE whiff of scandal has been drawing the crowds to the natural history branch of the British Museum this summer, where a fossil described by the museum as "perhaps the most important and valuable in existence" has been put on public display for the first time in 21 years to refute charges that it is a fake.

The fossil in question is generally claimed by paleontologists to be the 150-million-year-old remains of an *Archaeopteryx lithographica*, the first known bird. It was discovered in a German limestone quarry in the middle of the 19th century, and immediately purchased by the museum's then director, Richard Owen, on the grounds that the faint impressions of wing skeletons surrounding the bones indicated that it was the "missing link" between reptiles and birds.

Two years ago, this widely accepted conclusion was challenged by two prominent—if controversial—British scientists, the astronomer Sir Fred Hoyle and N. C. Wickramasinghe, a mathematician and astronomer at University College, Cardiff. Using photographic evidence to support claims initially put forward by Israeli physicist Lee Spetner, they argued that a 19th-century forger had cleverly used a mixture of paste and limestone fragments to add the impression of wings to a genuine dinosaur fossil, possibly to increase its sale value to the museum.

The staff of the museum have reacted heatedly to the charges, which included the implication that they had since been responsible for covering up the forgery. In a detailed rebuttal published in *Science* last year, they cited a list of reasons—including a precise matching of the hairline cracks on the feathered areas of the two slabs between which the fossil was sandwiched—why they believed the fossil to be genuine (*Science*, 2 May 1986, p. 622).

Hoyle and Wickramasinghe, however, have remained on the attack. Earlier this year they received considerable publicity in the British media when they held a press conference to repeat their charges, accusing the museum of further complicity by refusing to provide some specified samples of the

rock for spectroscopic analysis.

The matching of the hairline cracks, they said, could have been produced by the same process that produces fissures in plaster applied to a wall that is already cracked (the museum argues that the presence of calcite crystals in the cracks reveals that they cannot be of recent origin).

Now the museum has responded at two further levels. The first has been a public exhibition, mounted under the title "The Feathers Fly," which summarizes in popular form both the charges being made by Hoyle and Wickramasinghe and the detailed response of the museum's scientific experts to each of the individual claims.

The second has been the release of some new ultraviolet photographs of the *Archaeopteryx* fossil. According to the museum staff, any organic glue mixed with the limestone cement used to make the feather impressions would have shown up under the ultraviolet source. Cocks indicated that he would have been delighted, in a way, if it had turned out to be a forgery, as the

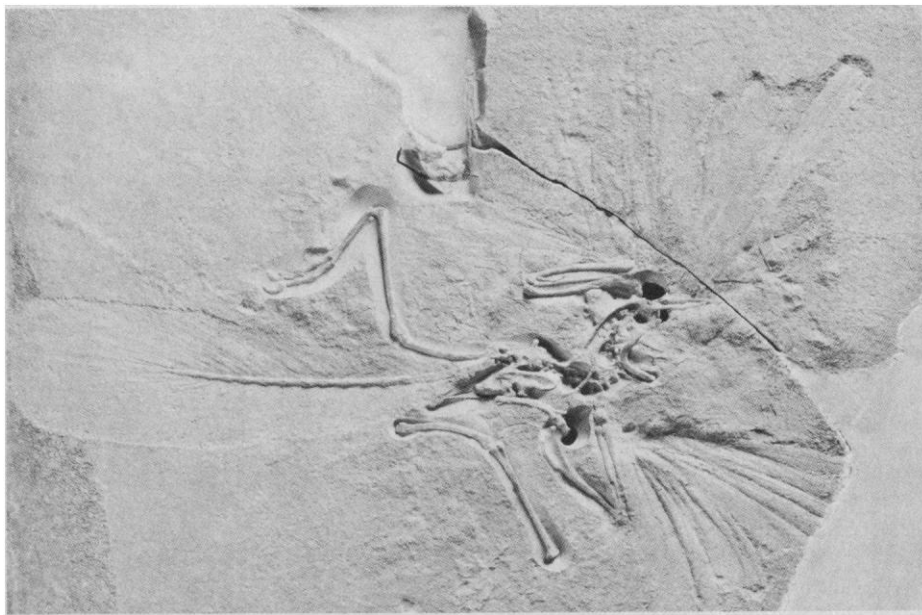
museum's staff had been the first to demonstrate in the case of the Piltown man. The fact that, in contrast to the fossil bones, the areas surrounding the feathers did not fluoresce demonstrates conclusively, they argue, that no organic glue could have been used, and therefore—since inorganic glues were unknown at the time—that the impressions could not have been made in the way suggested.

"We had to go further than our *Science* article because of the press conference given by Hoyle and Wickramasinghe, where they claimed to have refuted the arguments that we made," says Robin Cocks, the museum's curator of paleontology. "One year ago we thought that they would go away; we just got tired of pussy-footing around."

Cocks says that, although other paleontological evidence suggests that the *Archaeopteryx* fossils, of which five other specimens have since been identified, was "the right fossil in the right place at the right time," from a scientific point of view the museum would be "delighted" if it was shown to be a forgery.

"Indeed, there are plenty of young Turks in the paleontology community who would be only too delighted to put the boot in; but at present there is not one vertebrate paleontologist who supports the claims being made by Hoyle and Wickramasinghe," he says.

The two astronomers continue to reject the museum's protests of innocence; they maintain their conviction that both the London fossil and a second one discovered in the same location 16 years later, which is



Archaeopteryx lithographica. *Clever forgery or a 147-million-year-old fossil of the earliest known bird?*

currently in a museum in Berlin, are forgeries. They play down, for example, the significance of the latest experiments that the museum claims are conclusive.

"We have looked into the whole question of the behavior of material under ultraviolet light and have found that although most organic substances do indeed glow under such light, not all of them do," says Wickramasinghe. "We therefore feel that it could have been possible to devise organic glues that do not fluoresce, so the weakness of the fluorescence effect does not prove very much, and the new evidence is therefore not as decisive as the museum is claiming."

Wickramasinghe rejects the claim that he and Hoyle are keen to show that the *Archaeopteryx* is a fake partly because it would provide support for their own broader—and equally controversial—ideas that life originated in space and subsequently arrived on the earth in a meteorite shower about 65 million years ago. "We have absolutely no vested interest in showing the fossil to be a forgery, since our own theory of life from space would not fall if the fossil was shown to be genuine," he says.

He is also strongly critical of the museum's refusal to provide its critics with a small sample for analysis of the limestone from immediately beneath the fossil (an earlier sample, whose analysis has recently been completed by Spetner in Israel, came from a different part of the rock slab in which the fossil was found). "The whole authenticity issue could be resolved with a mere pinhead of the material," Wickramasinghe says.

Cocks at the Natural History Museum maintains that the astronomers have yet to produce sufficient "proof" of their hypothesis that would justify providing them with the new sample they are now requesting. "If you were in charge of the crown jewels, would you start prizing out emeralds and handing them to anyone who claimed that they were fake?" he says.

Feelings among the museum's scientific staff continue to run high about the charges that have been made because of both their nature and the time spent trying to refute them. Many are also upset about the personal language in which what they describe as the "outrageous allegations" have been expressed.

"We feel a little sad that two scientists as eminent as Fred Hoyle and Wickramasinghe have to back up their arguments by accusing other scientists of being dishonest," says Angela Milner, curator of fossil birds.

Indeed, some members of the scientific staff are uneasy about the evenhandedness of the public exhibition, where the evidence for and against the physicists' charges is given equal space, leaving the conclusion open for

visitors to decide. "If we had been doing the exhibition, it would have been more open and shut," says Cocks.

But the museum authorities have been able to have the last word. The exhibition organizers had produced for sale two sets of buttons, one declaring "*Archaeopteryx* is a fake" and the other that "*Archaeopteryx* is genuine." In the end, however, only one of

the buttons, however, is available at the museum shop; the prospect of thousands of school children circulating London with official-looking badges declaring one of the museum's prize possessions to be a forgery seems to have been something that even the most open-minded of museum administrators found difficult to accept. ■

DAVID DICKSON

Koryagin Skeptical on *Glasnost*

Like other Soviet dissidents now living in the West, psychiatrist Anatoly Koryagin, speaking recently at the AAAS, warned Americans not to be taken in by the promises of *glasnost* unless Soviet leadership makes a lot more changes than have so far occurred.

Koryagin, who is now living in Zurich, was released after 6 years in prison and allowed to emigrate early this year. He said that although more than 100 political prisoners have been released from psychiatric hospitals and camps, more than 100 remain in the hospitals and far more in prison camps. Speaking through an interpreter, Koryagin said that if the government were serious, those remaining would be released immediately and would be "rehabilitated" as happened under Khrushchev after Stalin's death. As things now stand, he said, people released from hospitals and camps still suffer from radical diminishment of their human rights because they have not been publicly exonerated. "The government continues to look on us as particularly pernicious criminals," he said.

Asked what determines whether a person is sent to a mental hospital or a camp, Koryagin said that depends on a variety of factors, including an individual's prior psychiatric history and the degree to which he is well known. He said that doctors may try to aggravate existing symptoms for the purpose of making a diagnosis. Also, there is a special Soviet classification of schizophrenia that will fit just about anyone.

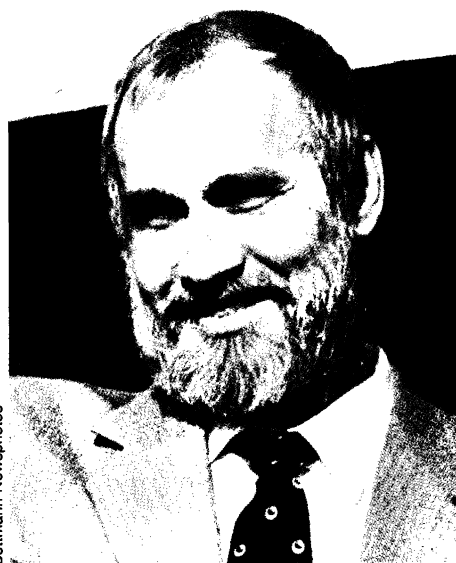
Koryagin said there is no group of psychiatrists in the Soviet Union to protect the ethical practice of psychiatry. He said the KGB knows how to select those who will play along with their aims, and it will avoid assigning the "good" ones. Those who protest the misuse of psychiatry, like himself, get "repressed."

He said Soviet treatment of political prisoners compares unfavorably with South Africa, noting that when Nelson Mandela was sick in prison his wife was allowed to visit him. He said that, although families have visitation rights by law in the Soviet Union, this is never allowed. "Only the U.S.S.R. is capable of such a thing." He said international organizations concerned about Soviet abuse of psychiatry should make a priority of demanding permission to visit those in mental hospitals.

Koryagin takes a dim view of efforts by private American groups to establish ties with Soviet organizations, since the latter are always government-sponsored. He was particularly contemptuous of the American Bar Association's efforts to link up with Soviet lawyers, since the latter are "criminals."

Like other dissidents, Koryagin stressed that persistent, unrelenting badgering by foreigners is the only way to get the Soviets to change their ways. He said that little is gained by trying to pursue human rights concerns in the context of formal exchanges because they will be ignored. The best tactic for scientists, he said, is to develop networks of contacts through relationships with individual Soviet scientists. ■

CONSTANCE HOLDEN



Anatoly Koryagin. Psychiatrist imprisoned 6 years for protesting abuses.

Bettmann Newsphotos