

The Lucky Ones

Of all the early birds, only one lineage survived **By Susan Milius**

The asteroid strike (or was it the roiling volcanoes?) that triggered dino doomsday 66 million years ago also brought an avian apocalypse. Birds had evolved by then, but only some had what it took to survive.

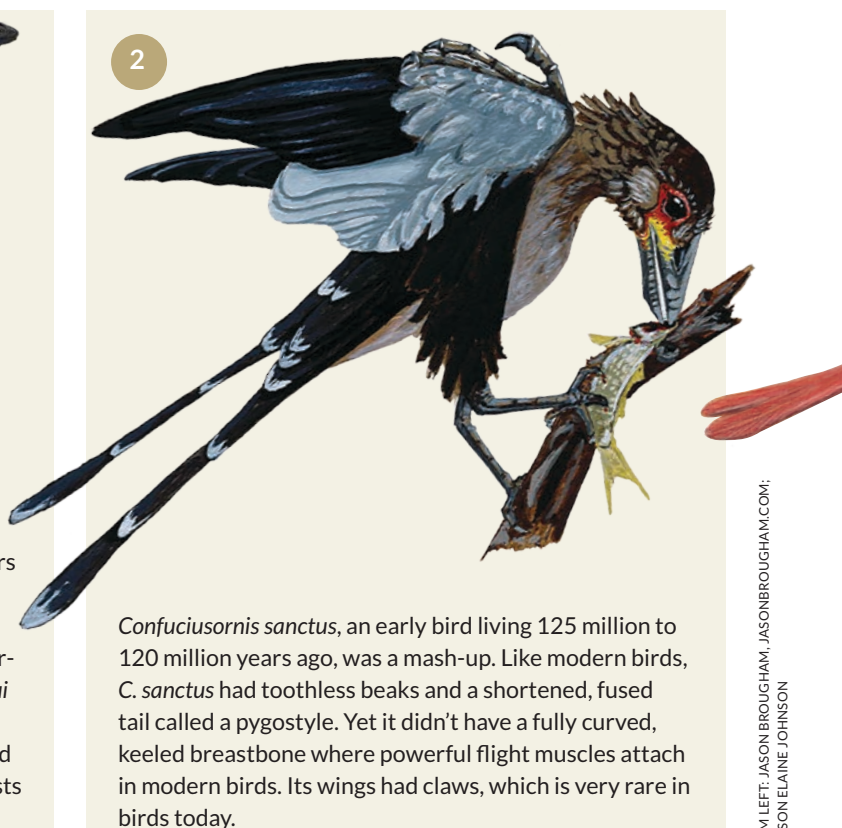
Biologists now generally accept birds as a kind of dinosaur, just as people are a kind of mammal. Much of what we think of as birdlike traits — bipedal stance, feathers, wishbones and so on — are actually dinosaur traits that popped up here and there in the vast doomed branches of the dino family tree. In the diagram at right, based on one from paleontologist Stephen Brusatte of the University of Edinburgh and colleagues, anatomical icons give a rough idea of when some of these innovations emerged.

One branch of the dinosaur tree gradually turned arguably

avian (in the Avialae/Aves group) by about 165 million to 150 million years ago. That left plenty of time for bona fide birds to diversify before the great die-off.

The bird pioneers included the once widespread and abundant Enantiornithes, or “opposite birds.” Compared with modern birds, their ball-and-socket shoulder joints were “backwards,” with ball rather than socket on the scapula.

These ancient alt birds may have gone down in the big extinction that left only fish, amphibians, mammals and a few reptile lineages (including birds) among vertebrates. There’s not a lot of information to go on. “The fossil record of birds is pretty bad,” Brusatte says. “But I think those lineages that go up to the red horizontal line of doom in my figure are ones that died in the impact chaos.” ■



FROM LEFT: JASON BROUGHAM, JASONBROUGHAM.COM;
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