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Did Dinosaurs fly?

Part 2.

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IN PART 1 (published in our March 2024 *Creation Extra*), we concluded that there are no truly feathered dinosaurs. We explained that there are real *birds* in the fossil record (with flight feathers, etc.) and that some dinosaur fossils display fuzzy, hair-like structures. We explained that collagen, a tough structural protein, degrades into various forms as skin decays. Decayed collagen fibers can superficially resemble the fibrous structures of feathers. Unfortunately, many evolutionists misidentify decayed dinosaur skin collagen as feathers. They then proceed to conflate this skin collagen with bird feathers, concluding that birds are dinosaurs. The evidence, however, is at best equivocal. No fully fledged [pun intended], feathered dinosaurs have been discovered.

We now want to focus on another way to distinguish between birds and dinosaurs. We want to approach the topic systematically, looking at a combination of unique biological traits that are only found in birds. Specifically, we will compare the way birds, mammals, and reptiles breathe.

Lungs

Birds have a unique respiratory system that differs from mammals and reptiles (including dinosaurs). Reptiles and mammals have lungs that operate like bellows. Reptiles in particular, have diaphragmaticus muscles as well as intercostal and other muscles that cause the lungs to expand and contract. Unlike birds, reptiles have flexible lungs and depend on the diaphragmaticus and other muscles to inflate and deflate the lungs. For most reptiles and mammals, air goes into the lungs in one direction and exits in the reverse direction. This is known as tidal breathing.

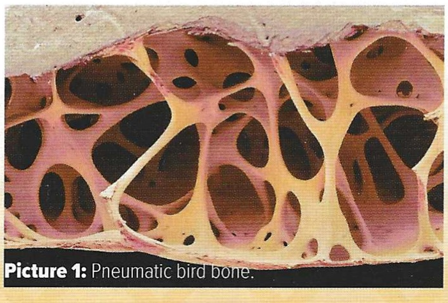
Alligators, monitor lizards, and iguanas are unusual among reptiles as they have a mostly unidirectional airflow in their lungs. The respiratory configuration, however, is *reptilian* and very different from the respiratory system of birds. In monitor lizards, the air first moves to the bottom of the lung and then flows through the entire lung toward the nares. The main branchial tube in the lung branches off into many smaller tubes to distribute air into multiple small chambers that make up the lung. These chamber walls also have holes, allowing air to flow from chamber to chamber as air flows towards the top of the lung. In this way, oxygen flows all the way through the lungs when the monitor lizard inhales. Aerodynamic valving causes a bias of airflow in one main direction.

In the evolutionary classification scheme, alligators and birds/dinosaurs are called archosaurs, but iguanas are a subgroup of the squamates (which includes snakes and many other reptiles). The reptiles with one-way lungs are from different branches of the 'evolutionary' tree. This presents another hiccup for evolutionists, who must now explain the common ancestry of reptiles with radically different lung morphologies. How does a two-way lung evolve gradually into a unidirectional respiratory system through slow, gradual processes? And to do this multiple times?!

Crocodilians add another layer of complexity in that their liver is firmly attached to the breathing apparatus. The large diaphragmaticus muscle also connects the pelvic area to the liver. Since the liver is connected to the lungs, they all move together when the creature inhales and exhales, as if it were a huge 'hepatic piston' that pushes the lungs back and forth.

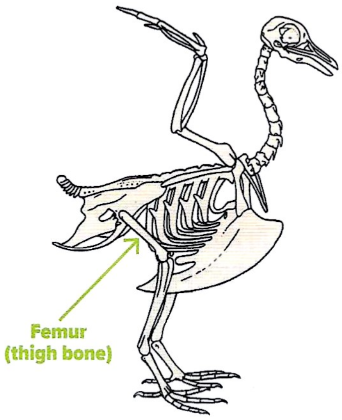
The way birds breathe is different still. Their lungs do not expand and contract like bellows but are inflexible and rigid. To breathe, birds have multiple air sacs inside their body (usually seven to nine major ones) that function like air pumps. These pumps expand and contract to circulate the air *in one direction* through their rigid lungs. The air movement can be likened to how runners only go in one direction around a track. This unique method of breathing gives birds extremely efficient lungs (e.g., no dead space, as in human lungs), which also ties in with their high metabolic rate.

It also takes two breaths to process each packet of air in bird lungs. When breathing in, a packet of air is first moved to the lower air sacs. When exhaling from the upper air sacs, the air packet is pushed into the lungs. When the bird inhales again, the air packet is pushed out of the lungs and into the upper air sacs. When it exhales a second time, the air is finally pushed out



Picture 1: Pneumatic bird bone.

See: *Titans* p. 241, Figure 9. Image: SEM Stock Photo | Adobe Stock



Picture 2: Fixed thigh bone (femur) inside the body.

See: *Titans*, p. 240 Figure 7. **Image:** BIODIDAC, CC BY-SA 2.5

the nares. Despite the semi-unidirectional air flow in some reptilian lungs, the way a bird breathes is entirely different from anything else.

Most evolutionists believe that birds are dinosaurs, but how does a bi-directional, bellows-like reptilian lung evolve into a unidirectional, fixed, double-breath avian lung without requiring a drastic reconfiguring of the entire respiratory system simultaneously?

Pneumatized bones

Besides the air sacs that 'pump' air around their body, birds have additional air passages that do not expand and contract. These are contained in 'pneumatized' (air-filled) bones. These hollow bones are connected to the air sacs (pumps) and lungs. But they are not just air passages. Pneumatized bones also help by removing the excess heat that is generated during flight.

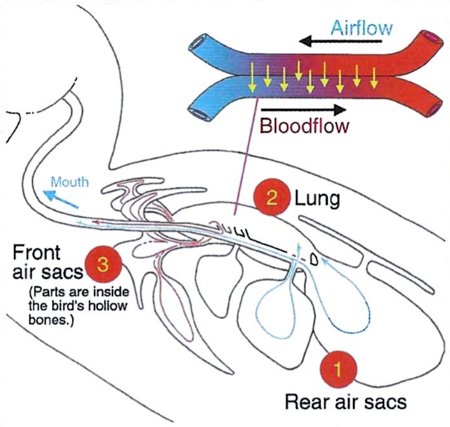
Femur

The next time you buy a chicken from the grocery shop, take a quick look at its anatomy. You might notice at first glance that the 'knee' of a bird appears to bend backward. That is because what you are looking at is its ankle. A bird's knee is situated higher up the body. A bird often has what we call an 'internal' thigh. Its femur is often partially buried inside its body. This is why you must cut into the chicken's body to fully extract the thigh. The rigid, horizontally placed thigh is held in place with strong ligaments and muscles. The femur is positioned to support the abdominal air sacs.

The femur is also pneumatized. In other words, a bird's thigh is vital for breathing. If a bird swings its thigh like the way dinosaurs did or mammals do, it will likely tear its entire respiratory system apart.

A very different bauplan

Birds have a very different bauplan (a generalized structural body plan



Picture 3: Inside the bird lung.

held in common among members of a group) from dinosaurs and other reptiles. Three unique biological systems set birds apart from dinosaurs and reptiles in their breathing system alone: 1) the unidirectional airflow with rigid lungs; 2) the air sacs that function as air pumps and that require two breathing cycles to process each packet of air; and 3) the internal, pneumatized thigh.

In other words, birds have multiple, unique, interconnected biological systems that set them apart from reptiles in general and dinosaurs specifically. Apart from an *apriori* acceptance of evolutionary presuppositions, claiming that 'birds are dinosaurs' does not make sense.

UPCOMING EVENTS

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