

## MEET THE PLOTOPTERIDS

by John Kricher, Mansfield

Imagine an ocean-going, flightless anHINGA in excess of two meters long, with penguin-like paddles for wings, and the head of a gannet. Incredible as it may seem, such a magnificent monstrosity apparently existed some 25 million years ago, inhabiting the northern Pacific Ocean. In the depauperate world of fossil birds, recent analyses of a group of partial skeletons collected from rocks in Japan and Washington have revealed the existence of a "new" family of seabirds, the plotopterids.

Minute study of the delicate geometry of the fossil bones, all of which were collected from marine sedimentary rocks, revealed clearly that the extinct avians were members of the order Pelicaniformes and, within that group, were most closely allied with the anHINGAs, none of which are marine. However, these fossil anHINGAs were distinct enough from their modern cousins to justify their placement in a family of their own: thus the designation of plotopterids. To make matters more complex, the four or five species of plotopterids thus far discovered all looked like penguins! Characteristic of each was the total modification of the wings into paddle-like flippers extremely similar in structure to those found in penguins and the extinct great auk, an alcid. Such a case is an example of convergent evolution; three distantly related groups (penguins, auks, and anHINGAs) have evolved representatives with nearly identical specializations, due presumably to their having experienced identical selection pressures from their marine environments. The plotopterids in the north Pacific assumed the ecological niches occupied by the larger species of penguins in the Antarctic. Oddly, the plotopterid skull was highly gannet-like, and the face of the bird would have looked much more like a gannet or booby than a penguin.

Obviously, no one knows why the plotopterids became extinct. An intriguing speculation is that these large flightless birds, at least one species of which exceeded two meters (nearly seven feet!) in length, were out-competed by seals and porpoises, whose size and ecologies would have been highly similar. The next time you're on a west-coast sea trip passing time watching the porpoises, you might take a moment to praise the evolutionary victors and mourn the loss of what may have been the earth's largest seabirds.

### REFERENCE

- Olson, S. L. and Y. Hasegawa. 1979. Fossil Counterparts of Great Penguins from the North Pacific. Science, 206: 688-689.



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