

Nature Note



Aquarium of Niagara Falls

Lungfish

The strange, air-breathing lungfish had ancestors from which possibly all land animals with backbone evolved—amphibians, reptiles, birds, and mammals, including man.

The ancient species of lungfish lived in the Mesozoic age about 220 million years ago, and had two characteristics that permitted it, over a long period of time, to crawl from its sea habitat onto land and survive: paired fins and a lung formation by which it could breathe air, not water. From fossil remains, scientists found the paired fins were attached to a fleshy, scale-covered base with supporting bones. These bones were so arranged that they could have supported a limb instead of a fin. With an air bladder arrangement, the fish could breathe oxygen from the air, supplementing the oxygen it usually received from water through the gills.

Only five species of lungfish exist today, all inhabiting tropical fresh waters. Three species live in Africa, one in South America, and one in Australia. A living specimen of the Australian lungfish has recently been added to the Aquarium of Niagara Falls, N.Y.

As the waters of its native streams and lakes dry up, the lungfish sinks into the mud and prepares for a deep sleep. As the land becomes drier, the lungfish fills its lung sac with air through an air-hole in the mud.

The mud hardens all around the creature, finally encasing it as if in stone. The body processes slow down in this dry condition, called estivation, which is something like a summer hibernation. Some African lungfish can remain alive like this for four years. When the rains return, the mud softens and the fish is roused from its deep sleep.

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