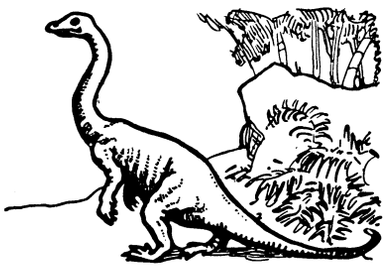
EVOLUTION

NATURE RAMBLINGS

by Frank Thone



Meek Inherit The Earth

➤ BIG THINGS can evolve out of little ones, but not little things out of big ones.

The whole course of evolutionary history is littered with examples of developmental lines of animals and plants that started small, grew big, then huge, and then—died. Faced with changed and adverse conditions, they apparently could not contract the scale of their operations to weather the storm. They could only go into involuntary bankruptcy and pass out of the picture.

It was so with the dinosaurs. The earliest reptiles, in the age that succeeded the lush days of the coal era, were moderate-sized beasts. The biggest of them did not outrank modern crocodiles or the giant tortoises of the Galapagos. In succeeding geologic periods, one reptilian line, the dinosaurs, began to take on size; first as big as a horse, finally as big as a house. Then came one of the world's periods of major geologic change—a revolution—and down went the dinosaurs. The reptiles that survived and now possess their modest share of the earth were the less ambitious, less grandiose orders—lizards, tortoises and turtles, crocodilians, and the later-appearing snakes.

The same is true of the giant plants that lived in the coal age. They were, some of them, relatives of the common horsetail rushes that now grow along railway embankments and in moist sandy soil. They aspired to great heights, developed into things as big as the giant cacti of our Southwest. But when geologic hard times came they couldn't "take it," and so passed out, leaving their share of the picture to their poor relations, the smaller horsetails, that somehow managed to struggle through not only those hard times but all that followed, and are still with us.

The same story could be told about a dozen families of mammals, that appeared on the scene much later. Elephants will do as a type example. The earliest ancestral elephants we know anything about were animals not much bigger than a pig, without the great trunk and tusk development that came later. They grew and grew in succeeding geologic periods, until just prior to and during the last great glacial epoch they reached their climax in beasts more than a dozen feet high at the shoulders, with tremendous curved tusks. But they all went, with the exception of the two surviving species in Asia and Africa. And these, even without the deadly interference of man, must surely have followed their forefathers before many more thousands of years.

The meek always inherit the earth—and when they cease to be meek they presently lose it again.

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GEOLOGY

Earth's Record in Rock

➤ GO TO the bottom of the sea. Punch a hole a hundred feet deep. You can then bring up to the surface a core of rock and mud that will record the whole long history of the earth, two billion years or so of geologic time.

Dr. Maurice Ewing, Columbia University geologist and oceanographer, who has this summer probed the floor of the Atlantic, told the National Academy of Sciences meeting in Berkeley, Calif., that this is a possibility.

The longest core yet captured by Dr. Ewing is 37 feet from the floor of the Atlantic, but Swedish scientists have one that is 60 feet long. Dr. Ewing predicted that a hundred foot sample, less than formerly believed to represent the sediments since the beginning of earthly time, can be obtained in the near future. Microscopic fossils in the earth cores give valuable new clues to our picture of the earth.

Dr. Ewing also stated that the depth of granite bedrock, lying under the ocean mud, can be determined by the explosion of depth charges under the surface. The refraction, or echo, that follows the explosion can be used to determine the depth and nature of the bedrock. Such measurements, in the mid-Atlantic, have shown a granite layer 40,000 feet thick, under which lies basalt rock.

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