



amphibians. They do not appear to have been transitional forms.

There is a fossil fish, however, from those ancient times that could qualify as the ancestor of amphibians. It is called the *eusthenopteron*. Its fins resemble the leg-like paddle fins of the *coelacanth*. Further, the bone pattern of its fins is similar to that found in the legs and feet of amphibians and the other land vertebrates. Its skull also has the crucial feature lacking in lungfish and the *coelacanth*s. There appears to be a passage linking the roof of the mouth to the nostrils. The *eusthenopteron*, a lobe-finned fish, was very much like an amphibian. It appears to have been preadapted to life on the land. It may have colonized the land and given rise to the first group of amphibians, the *labyrinthodonts* (see figure 9.4).

FIGURE 9.4.

A possible transitional form from fish to amphibian.

Today, the amphibians are best represented by frogs and salamanders. The lifestyle of the amphibian itself may be thought of as transitional between water and land. A frog cannot leave the water for long periods or its skin will dry out. It must return to water to lay its eggs because the eggs will hatch only in an aquatic environment.

The development of the tadpole is fascinating to watch; first wiggling about the water with its long whip-like tail; then growing limbs with feet; and, finally, crawling out of the water to croak to the world. The fossil record, a modern comparison of skeletal structure (*morphological similarity*), and direct observation of individual growth and development designate the amphibian as a transitional form that bridges the gap between water and land.



FIGURE 9.5.

The final stages in growth from a tadpole to frog. Amphibians represent transitional forms between those that live on water and those that live on land.