

## FROG EARLY DEVELOPMENT ON STAMPS

**Dr. Vic Eichler, BU1850**

Early development of anuran amphibians involves three distinct periods before they undergo the metamorphic changes that result in the four-limbed and sexually mature frogs and toads. These stages are represented by: (1) the eggs laid by the female and fertilized by the male, (2) the developing embryo within the egg membranes and often a surrounding jelly mass, and (3) the developing larvae preparing for the transition from the aquatic, vegetarian, gill-breathing tadpole swimming free with the aid of a tail to the carnivorous, lung-breathing, tailless froglet that will be more-or-less semi-terrestrial, depending on species.

The early development of frogs is an interesting subject because there are so many specific modifications that different species utilize not only in developmental pattern, but also in parental behavior of eggs and young. Many people would be surprised that an animal considered quite primitive would actually have parental behavior.

Almost all of the more than 1200 stamps listed in ATA Handbook 165 show illustrations of adult amphibians, but a handful actually show the earlier developmental stages listed above. This article will highlight stamps from several countries that show eggs, or various forms of tadpoles.

### Frog Eggs on Stamps

The protection afforded by male **Midwife Toads** of the genus *Alytes* has been well documented, and is illustrated on stamps from two countries: Spain (*Alytes obstetricans*) and Great Britain's Jersey Island (*Alytes muletensis*). In both of these species after the eggs are laid, the male gathers them up between his hind legs for protection, and to keep them moist by moving them to the water when they become too dry.



*Alytes obstetricans*  
Spain, 1975, Sc#1900



*Alytes muletensis*  
Jersey, 1997, Sc#806

These stamps from Liechtenstein and the Netherlands show frogs with eggs.

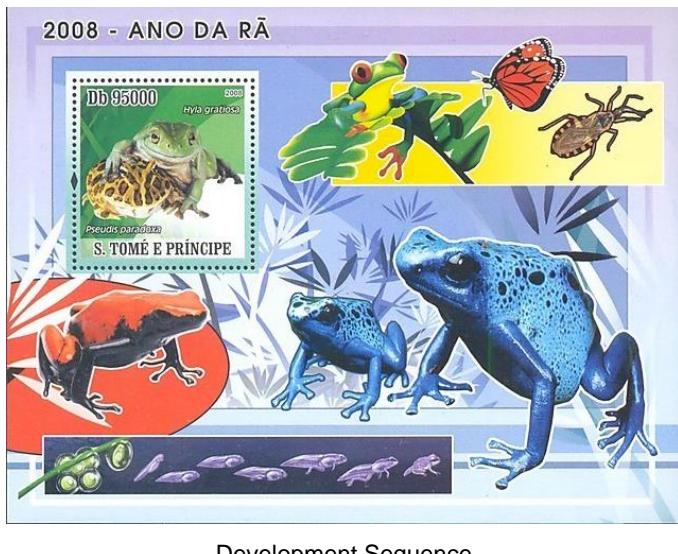


*Rana esculenta*  
Liechtenstein, 1974, Sc#538



Surrounded by eggs  
Netherlands, 1976, Sc#B520

A mass of eggs and several tadpoles are seen at lower left corner of this sheet from Tanzania that illustrates a large Goliath frog overlapping the stamp onto the selvage area.



Development Sequence  
St. Thomas & Prince, 2008, Sc#1822



*Conraua goliath*  
Tanzania, 1996, Sc#1460

Eggs and developmental sequence of tadpoles appear at bottom of this mini-sheet from St. Thomas & Prince.

## Tadpoles on Stamps

Very few countries illustrate the frog larval stages, commonly known as tadpoles, on their stamps, but they do have a prominent place on a joined series of stamps issued on 1 June 2013 by the People's Republic of China.



The stamps, issued in a sheet of 20 with five separate images (Sc#4114a-e) and in a booklet pane of five (Sc#4114f), show tadpoles swimming among other aquatic animals. The designs are from a drawing by the artist Qi Baishi (1864-1957).



Tadpoles with goldfish  
China P.R., 2013, Sc#4114b

Tadpoles adorn another painting by Qi Baishi titled "Mountain Stream Waterfall With Tadpoles" on a tall stamp issued by the People's Republic of China on 15 January 1980



Tadpoles in mountain spring  
China P.R., 1980, Sc#1560

Grenada Grenadines issued a special 150th anniversary sheet honoring Qi Baishi in 2014. Apparently this great Chinese artist was fond of frogs and tadpoles.



Tadpoles with frog  
Grenada Grenadines, 2014, unlisted

The central label of this 1992 miniature sheet from the People's Democratic Republic of Korea illustrates well the transitional stages from the small tadpole through the acquisition of the legs and loss of the tail.



Tadpole transition  
Korea (North), 1992, Sc#3142a