Amphibians of Germany

Herping for amphibians in Germany.

Text and photos by Gerlinde Höbel

A herping trip to the tropics — sure. But herping in Germany? That's not the first destination that comes to mind. Well, let me take you on a little expedition to my native country, and you'll see that it's well worth a trip.

We may not have many herps in Germany; in fact, there's only 20 amphibian species compared to the 190 in the United States. Some amphibians, like the plethodontid salamanders, which constitute a huge chunk of the U.S. herp list, are not found at all in Germany. Members of some groups like the treefrogs, true frogs, toads and spadefoot toads have representatives in both the German and North American herpetofauna. And there are some German herps, like the fire-bellied toads, that do not have any relatives in North America.

North American and German Salamanders and Newts
There are six species of tailed amphibians in Germany, four newts and two salamanders. All members of the family Salamandridae, the German newts are related to the newts found in the United States. The salamanders, however, are not. German salamanders also belong to Salamandridae, while similar-looking North American salamanders belong to the family Ambystomatidae.

Despite being both members of the same family, the natural history of German newts (genus Triturus) and North American newts (genus Notophthalmus) differs in some key characteristics. Both groups start their lives as aquatic eggs and gilled, aquatic larvae. After metamorphosis, both leave the water and start a two- to three-year period during which their lifestyle is entirely terrestrial. During this time, they become sexually mature adults. The land-dwelling, immature stages of North American newts are called efts.

Upon reaching sexual maturity, the life history of German and American newts begins to differ. Notophthalmus newts return to the water and begin their fully aquatic adult stage. Once back into the water, they generally stay there for the rest of their lives. German Triturus newts also return to an aquatic phase, but only during mating season. After the end of the season, they leave the water to spend the rest of the year as terrestrial animals. They also overwinter in terrestrial hiding places. Come next breeding season, they go back to theaquatic stage and so forth.

In Germany, newts start breeding in spring. As temperatures start to climb, they begin their migration toward the breeding ponds. Upon starting the aquatic phase, both sexes undergo modifications to better adapt them to their new habitat. The tail flattens laterally to serve as a swimming aid, and they often develop finlike flaps between the fingers and toes. Males in particular grow crests and develop special mating coloration that can be quite spectacular.

The courtship behavior of German Triturus newts also differs somewhat from that of North American newts. Triturus males perform mating dances in front of the females. During these dances, they show off their colors and crests. More importantly, they use tail movements to waft pheromones toward females. Clasping of the female, which is part of the courtship of some Notophthalmus newts, however, never occurs. Insemination via a spermatophore, which the male deposits on the bottom of the pond, is similar in both groups. The females of both groups also deposit their eggs by wrapping them individually into leaves of submerged plants.

Triturus Newts
The first newt to arrive at the ponds in spring is the smooth newt (Triturus vulgaris). This species grows to about 4 inches in length. Both males and females show different shades of brown on the back, while the belly is lighter in color and often shows some orange. Males have dark spots all over their body, while this pattern is much reduced in females. They tend to have small dots rather than spots, if at all.

Upon reaching the ponds, males develop a medium-sized, undulated crest on their back and tail, and flaps between their fingers and toes. The lower part of the tail develops a characteristic stripe of red and blue. Females do not change their appearance much during the mating season.

Less frequently encountered is the palmate newt (T. helveticus). This species is small, hardly reaching 3½ inches in total length. The color is similar to the smooth newt, but without the dark spots. Males only grow a small, smooth crest and are easily distinguishable from smooth newts by their filamentous tail tip. Palmate newt females lack this special feature and

are often very hard to tell apart from smooth newt females. Both species prefer small, densely vegetated ponds for reproduction.

The largest and most spectacular of the German newts is the warty newt (T. cristatus). They can reach a total length of up to 7 inches, but often stay quite a bit smaller. The belly is smooth with small black dots on an orange background. The dorsal coloration is dark brown, and the texture of the skin is very warty. What they may lack in coloration, however, they make up in body shape. During the breeding season, males grow huge crests that makes them look like little water dragons.

The prize for the most beautiful German newt, however, must go the alpine newt (T. alpestris). This is a medium-sized species, reaching a length of about 4½ inches. Males do not show off by developing huge crests, but by developing amazing colors. Even the females are quite pretty, with their bluish-mottled backs and orange bellies. During the terrestrial phase, the colors of the males darken and become quite similar to the coloration of the females.

Salamandra Salamanders
In contrast to the newts that need to spend some time in the water during the breeding season, German salamanders are quite independent from permanent bodies of water. Their ways of reproduction are quite different from those of North American ambystomatid salamanders, to which they bear only some superficial resemblance in body shape and coloration.

The black-and-yellow-spotted fire salamander (S. salamandra) is a large, stocky salamander that can reach up to 7 inches in length. They live in forested areas in moderate elevations. Mating takes place on land during the summer months. The following spring, after eight months of pregnancy, the female visits clean creeks and deposits several 1-inch long larvae into the water. These finish their development in the water and metamorphose into little salamanders in about four months. Fire salamanders get very old; captive animals are reported to have lived 50 years.

The jet-black alpine salamander (S. atra) reaches a length of 5 to 6 inches. As the name indicates, they inhabit mountainous regions. In this species, mating takes place on land as well, but there is no special mating season. Rather, mating occurs during the whole activity season, which can be quite short for high mountain populations.

Embryonic and larval development, as well as metamorphosis, take place within the female's body. Depending on altitude, the whole process can take two to three years to complete. As a rule, only two 1½-inch-long baby salamanders are born. During development, nourishment for the larvae is provided by yolk of unfertilized eggs and later by secretions of the female. This specialized reproductive mode is an adaptation to the harsh climatic conditions in their alpine habitat.

A Lone Treefrog
Hard to believe, but there is only one species of treefrog in Germany. The European green treefrog (Hyla arborea) is a small (1½ inches) but pretty species. Its size and coloration resembles the North American green treefrog (H. cinerea), but H. arborea has a black lateral stripe rather than a white one.

During early summer, the frogs gather in ponds where males form nightly choruses to call for females. While calling, males often sit on top of aquatic vegetation floating in the water. Once a pair has formed, the female deposits several hundred eggs in small clumps attached to aquatic vegetation. The frogs spend the rest of the year in trees and bushes, often far away from ponds.

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