

Otto and Friedo Berninghausen

Whose tadpole is it?



The waterproof field guide to Central European Amphibians

Frogs, toads, newts and salamanders in 250 pictures

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Frogs, toads, newts and salamanders in 250 pictures*

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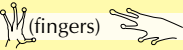



*Amphibians are protected animals. For that reason they need to be identified on the spot where they are found and **without causing any damage** to the animals. The present field guide makes this possible, even for tadpoles. Each section in the step-by-step identification keys contains only one or two easily recognizable features. In rare cases, e.g. when dealing with young Green Frogs which initially have dark temporal patches or distinguishing between Moor Frog and Agile Frog or between female Smooth Newt and Palmate Newt, a further look at the photos and descriptions is necessary to identify the amphibians correctly. As very early tadpoles (under 10 mm) of some species have still got external gills they can be taken for newt larvae. For reliable identification let larvae grow for a few more days (>10 mm).*

Explanation of symbols used: D = dorsal, back, V = ventral, underside, ♂ = male, ♀ = female, ' = sexually mature. Total length of larvae stated in text approximately +/- 20%. Pictures lifesize unless indicated by circles.

Anura (tailless amphibians) = frogs and toads · **Caudata** (tailed amphibians) = newts and salamanders.

Larvae = young stages, breathing through gills (e.g. tadpoles) · **Metamorphosed animals** = amphibians breathing through lungs.

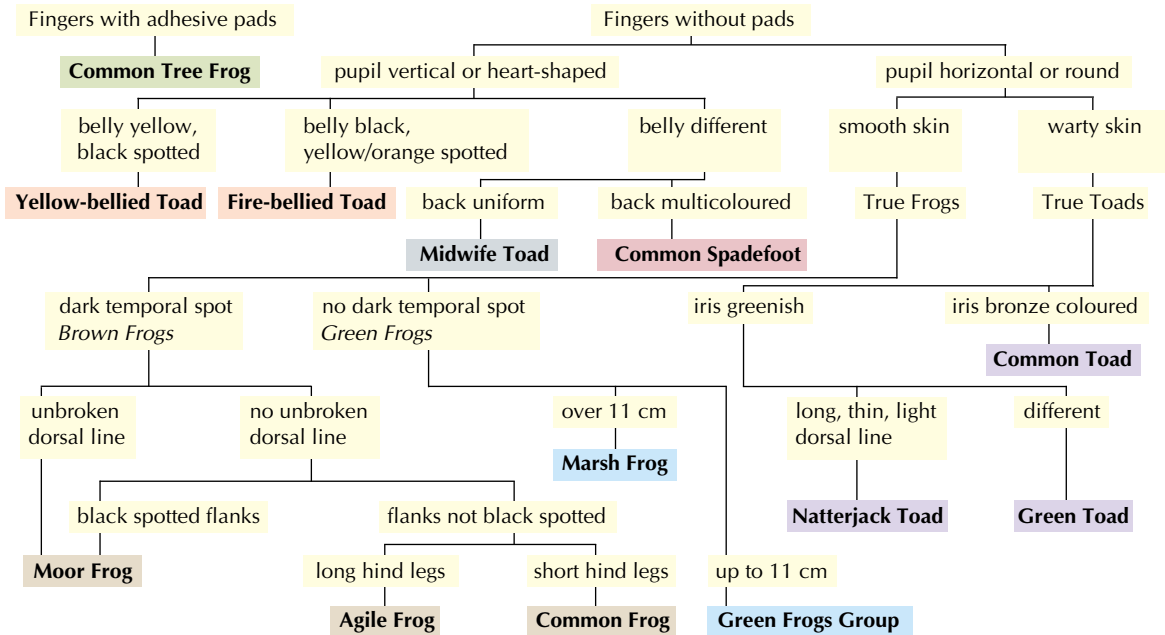
Key to Amphibians

A 1	without tail	<i>Anura</i>	→ B	
A 2	with tail	<i>Caudata</i>	→ M	
B 1	Finger and toe tips with round pads  (fingers) (toes)		Common Tree Frog	page 25
B 2	Different		→ C	
C 1	Pupil horizontal elliptic or circular 		→ D	
C 2	Pupil vertical, slit-shaped or heart-shaped 		→ K	
D 1	Back warty with prominent elongated parotoid glands behind the eyes	<i>True Toads</i>	→ E	
D 2	Back smooth without conspicuous parotoid glands	<i>True Frogs</i>	→ G	
E 1	Iris bronze coloured		Common Toad	page 17
E 2	Iris greenish mottled		→ F	
F 1	Long, light, nearly continuous, thin vertebral line		Natterjack Toad	page 19
F 2	Different		Green Toad	page 21
G 1	Dark spot on temple behind the eyes (temporal spot)	<i>Brown Frogs</i> (e.g. photo p.27)	→ H	
G 2	Without such a dark spot (applies not to juvenils, see page 2)	<i>Green Frogs</i>	→ J	
H 1	Light broad stripe on the back starting at the snout		Moor Frog	Seite 29
H 2	Different		→ I	
I 1	Black spotted flanks, large spades (photos p.29)		Moor Frog	page 29
I 2	When checking leg length (see drawing) the heel extends beyond the snout 		Agile Frog	page 31
I 3	Different from 1 and 2, belly nearly always - mostly reddish - marbled		Common Frog	page 27
J 1	Body length over 11 cm		Marsh Frog	page 34
J 2	Body length up to 11 cm		Green Frogs Group	page 33+34

Key to Amphibians

K 1	Belly bright yellow with black spots		Yellow-bellied Toad	page 13
K 2	Belly black with bright orange-red to yellow spots		Fire-bellied Toad	page 11
K 3	Belly different		→ L	
L 1	Back uniform grey		Midwife Toad	page 15
L 2	Back clearly two- or multicoloured, spotted or marbled		Common Spadefoot	page 23
M1	Skin shiny as patent leather, tail round	<i>Salamanders</i>	→ R	
M2	Skin not like this, tail different	<i>Newts</i>	→ N	
N 1	Belly uniform orange-red, reaching to the flank		Alpine Newt	page 35
N 2	Underside of head evenly white granulated		Great Crested Newt	page 38
N 3	Neither belly nor underside of head red (Smooth or Palmate Newt)		→ O	
O 1	Cloaca thickly swollen with dark centre: male (photos p.36+37)		→ P	
O 2	Cloaca small, yellowish, with grey slit: female (photos p.36+37)		→ Q	
P 1	Lower tail fin yellowish unspotted, line of black dots above		Palmate Newt ♂	page 37
P 2	Lower tail fin alternately red and black spotted		Smooth Newt ♂	page 36
Q 1	Underside of hind foot with two – mostly light – small lumps (photo p.37), throat always and belly usually unspotted		Palmate Newt ♀	page 37
Q 2	Hardly ever such light lumps; belly mostly, throat often spotted		Smooth Newt ♀	page 36
R 1	Uniform black		Alpine Salamander	page 39
R 2	Black with yellow spots or stripes		Fire Salamander	page 41

Diagram of Anurans



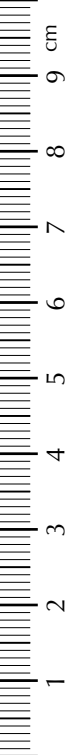
Common Tree Frog *Hyla arborea*



LARVAE:

Total length up to about 42 mm. Upper crest extends far onto the trunk. Seen from above the tiny tadpoles look shaped like a black cello case. From 8-10 cm body length some Tree Frog larvae become oval, then recognizable by the obviously spherical, unspotted golden belly. Tree Frog tadpoles like to float at the water surface. Seen in the front they have two small vertical lines on the snout. Very easy prey to predators.

METAMORPHOSED ANIMALS:
Size / about 3-4.5 cm. Adhesive pads on tips of toes and fingers. Back smooth and shiny, bright uniform green. Newly metamorphosed frogs are sometimes olive-green and frequently, depending on the weather situation, shining golden. In two-year old and older individuals however less variation in colouring. Sexual differences: ♂♂ have a brownish, wrinkly throat, ♀♀ have

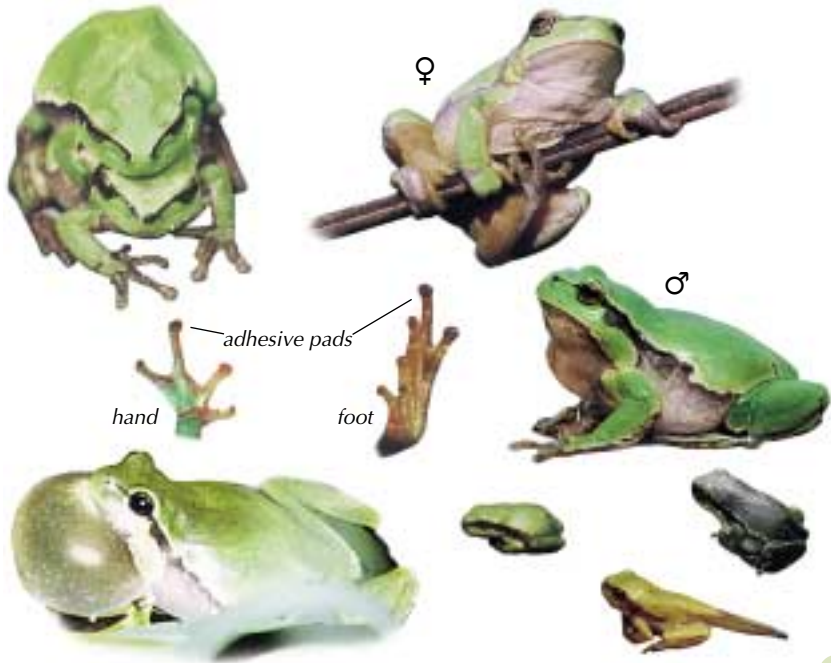


Common Tree Frog *Hyla arborea*

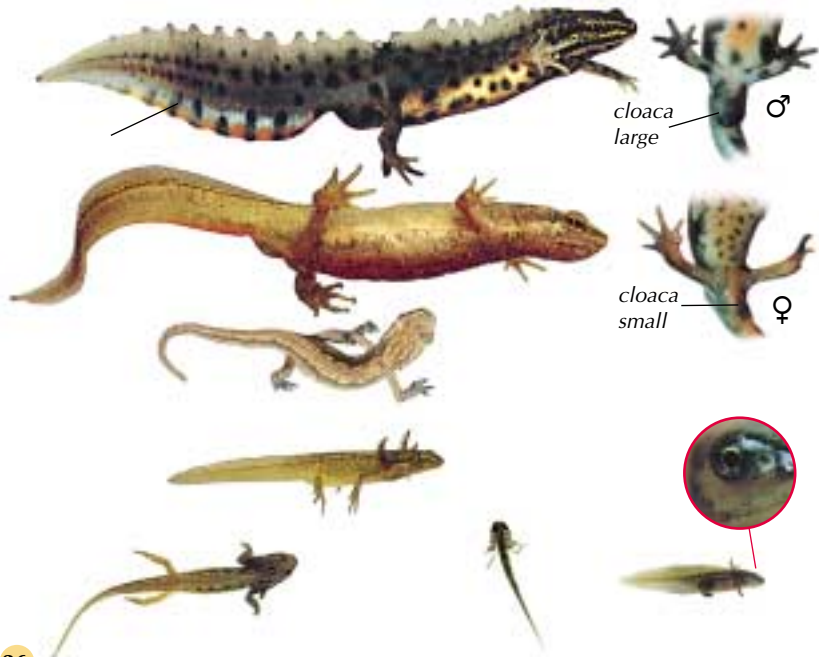
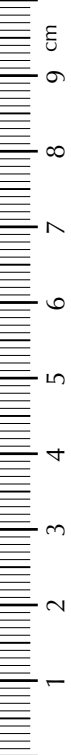
a lighter, smooth throat.

Mating: From April to June. At warm days calling activity starts at dusk and ends usually after midnight. The rhythmic "app....app....app" is very loud and heard over quite a distance. In summer and autumn sitting high above the ground on leaves or branches in daytime. From there often the hoarse croaking summer call is produced, mostly on warm, sultry days.

Distribution: Widespread but scattered over most parts of Europe with the exception of Italy, Great Britain and Ireland, Scandinavia (only in the extreme south). Normally living below 800 m.



Smooth Newt *Triturus vulgaris*



LARVAE:

Total length up to about 37 mm. Distinction from Palmate Newt is impossible on the spot.

METAMORPHOSED ANIMALS:

Size / about 6.5-11 cm. Belly spotted. Some ♀♀ have a nearly unspotted belly; ♂♂ have swollen cloaca, lower tail fin red and black spotted.

Mating: March to May. Terrestrial after breeding. Terrestrial ♂♂ without continuous dorsal crest. ♀♀ occasionally have a light dorsal stripe.

Distribution: Abundant in many parts of Europe between Central France and Central Scandinavia, including, Italy and the Balkans. The most widespread newt in the Britain and Ireland. Rare above 1000 m.

German	Hungarian	Italian	Polish	Spanish	Swedish
Rotbauchunke	Vöröshasú unka	Ululone ventrerosso	Kumak niziny	Sapo de vientre de fuego	Klockgroda
Gelbbauchunke	Sárgahasú unka	Ululone variegato	Kumak górski	-----	Gulbukig klockgroda
Geburtshelferkröte	Dajkabéka	Alite ostetrico	Pełówka babienica	Sapo partero común	Barnmorskegroda
Erdkröte	Barna varangy	Rospo comune	Ropucha szara	Sapo común	Vanlig padda
Kreuzkröte	Nádi varangy	Rospo calamita	Ropucha paskówka	Sapo corredor	Strandpadda
Wechselkröte	Zöld varangy	Rospo verde	Ropucha zielona	Sapo verde	Grönfläckig padda
Knoblauchkröte	Barna ásóbéka	Pelobate bruno	Grzebiuszka ziemna	Sapo de espuelas pardo	Lökgroda
Laubfrosch	Zöld levelibéka	Raganella comune	Rzekotka drzewna	Ranita de San Antonio	Lövgroda
Grasfrosch	Gyepi béka	Rana temporaria	Żaba trawna	Rana bermeja	Vanlig groda
Moorfrosch	Mocsári béka	Rana arvensis	Żaba moczarowa	Rana campestre	Åkergroda
Springfrosch	Erdei béka	Rana dalmatina	Żaba dalmatyńska	Rana ágil	Långbensgroda
Kleiner Wasserfrosch	Olasz erdei béka	Rana di Lessona	Żaba jeziorkowa	-----	Dammgroda
Teichfrosch	Kecskebéka	Rana esculenta	Żaba wodna	Rana verde comestible	Ätlig groda
Seefrosch	Tavi béka	Rana ridibonda	Żaba śmieszka	Rana verde común	Sjögroda
Bergmolch	Alpesi götte	Tritone alpestre	Traszka górská	Tritón alpino	Bergvattensalamander
Teichmolch	Pettyes götte	Tritone punteggiato	Traszka zwyczajna	-----	Mindre vattensalamander
Fadenmolch	Talpas götte	Tritone palmato	Traszka helwecka	Tritón palmeado	Trådsalamander
Kammolch	Tarajos götte	Tritone crestato	Traszka grzebieniasta	Tritón crestado	Större vattensalamander
Alpensalamander	Alpesi szalamandra	Salamandra alpina	Salamandra czarna	Salamandra alpina	Alpsalamander
Feuersalamander	Foltos szalamandra	Salamandra pezzata	Salamandra plamista	Salamandra común	Eldsalamander

Although adult Amphibians live generally well hidden and shy, their larvae occur in large numbers and are quite easy to catch. However, it used to be very difficult to identify the larvae, especially many kinds of tadpoles. Berninghausen's new and simple method now makes it possible even for the inexperienced to determine the species on the spot within minutes. Moreover this handy system is extended also to the grown up animals. This field guide contains further information on the distribution of the Central European Amphibians, mating times, calls and the appearance of the spawn. The names of the 20 species dealt with are given in eleven European Languages.

www.whose-tadpole.net