Amietophrynus gutturalis (Power, 1927)

kingdom Animalia
phylum Chordata
class Amphibia
order Anura
family Bufonidae Gray, 1825
genus ***Amietophrynus***
Frost, Grant, Faivovich, Bain, Haas, Haddad, de Sá, Channing, Wilkinson, Donnellan, Raxworthy, Campbell, Blotto, Moler, Drewes, Nussbaum, Lynch, Green, and Wheeler, 2006

Original Published Description:

Power, J. H. (1927).On the herpetological fauna of the Lobatsi-Linokana area.. Transactions of the Royal Society of South Africa. 14, 405-422.

Overview

Distribution

A. gutturalis occurs from the Taita Hills and other highland areas of East Africa all the way south to Durban in South Africa and West to Angola (Text from Measey et al. 2009, © SANBI).

Author(s): Zimkus, Breda

Rights holder(s): Zimkus, Breda

Etymology

This species is commonly encountered by the people of the Taita Hills of Kenya, which explains its Kitaita name 'kiwandu' meaning the people's frog (Measey et al. 2009, © SANBI).

Author(s): Zimkus, Breda

Rights holder(s): Zimkus, Breda

Description

Diagnostic Description

This is a large toad. Individual markings can be highly variable. The dorsum is yellow-brown with irregular darker brown blotches, and red patches on the back of the thigh. A light middorsal stripe is often present. Between the eyes, a pale cross is formed by two sets of dark patches. The forearm is edged with a row of conspicuous white tubercles. The parotid glands are large and distinct. Toes are webbed only very slightly at the base. The ventral surface is pale and granular, and the throat of the male is darkly pigmented. Males in breeding condition have distinct dark nuptial pads (Text from Harper et al., 2010).

Author(s): Zimkus, Breda; Travis, Bergmann

Rights holder(s): Zimkus, Breda; Travis, Bergmann

Size

Males range from 64 - 90mm and females 62 - 120 mm in snout-vent length (Harper et al., 2010).

Author(s): Zimkus, Breda

Rights holder(s): Zimkus, Breda

Comparisons

B. gutturalis and ***B. rangeri*** have been known to hybridize. The hybrid frog's call range in between that of the parents and are the main indicator of a hybrid. It has been recourded that the hybridization with ***B. rangeri*** has been increasing, it has been suggested that the increase is due to modern agricultural practices (Text from Minter et al., 2004, © SI/MAB Biodiversity Program).

The lowland areas (Tsavo plains) surrounding the Taita Hills of Kenya have two similarly sized toads ***Amietophrynus garmani*** and ***A. xeros***. ***Amietophrynus gutturalis*** can be distinguished by the prominent cross on its head between the eyes. In Sagalla Hill this species co-occurs with ***A. garmani*** but this species has an unmarked face (Text from Measey et al. 2009, © SANBI).

A. maculatus and ***A. xeros*** can also have a light cross or stripe between the eyes. The parotid glands are distinctly elevated in ***A. gutturalis*** but are level with the head in ***A. maculatus***. ***A. maculatus*** also lacks the red infusions on the thigh that are present in ***A. gutturalis***. ***A. xeros*** often has red markings on the thigh and vent as in ***A. gutturalis***, but lacks distinct dark dorsal markings (Text Harper et al., 2010).

Author(s): Zimkus, Breda; Travis, Bergmann

Rights holder(s): Zimkus, Breda; Travis, Bergmann

Ecology

Habitat and Ecology

A. gutturalis inhabits various vegetation types in the Savanna, Grassland and Thicket biomes at altitudes ranging from sea-level to about 1800 m (Text from Minter et al., 2004, © SI/MAB Biodiversity Program).

It is commonly found around homes, in shambas, plantations as well as on forests edges. This toad can be found in areas from the base at Mwatate to the heights of Vuria (Text from Measey et al. 2009, © SANBI).

This species is found in savannas, grasslands and agricultural areas at elevations ranging from 0 to 1900 m. It is tolerant to disturbed habitats and can be found in towns and cities (Harper et al., 2010).

Author(s): Zimkus, Breda; Travis, Bergmann

Rights holder(s): Zimkus, Breda; Travis, Bergmann

Associations

A. gutturalis prey include a wide range of insects, spiders and centipedes. In captivity, even lizards and other frogs have been recorded as prey items (Rose 1962). Adults are preyed on by the Black-necked Spitting Cobra ***Naja nigricollis***, Common Night Adder ***Causus rhombeatus***, Western Green Snake ***Philothamnus angolensis***, Serrated Hinged Terrapin ***Pelusios sinuatus***, and African Civet ***Viverra civetta*** (Channing 2001). The tadpoles are eaten by aquatic birds, fish and the Common Platanna ***Xenopus laevis***(Text from Minter et al., 2004, © SI/MAB Biodiversity Program).

One of the most spectacular sights is watching these animals come to lights at night to catch insects which are attracted there. On nights when termites fl y this frog can be found gorging itself. Adults will eat just about anything that moves and will fit into their mouths, although most of their diet consists of insects, slugs and snails. On shambas they are a most welcome guest as they eat pests common on many crops (Text from Measey et al. 2009, © SANBI).

In addition to the usual invertebrate prey, adult ***B. gutturalis*** are able to consume lizards and even frogs as large as ***Leptopelis spp.*** (Text from Harper et al., 2010).

Author(s): Zimkus, Breda; Travis, Bergmann; du Preez,L.H., Weldon, C., Cuningham, M., Turner, A.

Rights holder(s): Zimkus, Breda; Travis, Bergmann; du Preez,L.H., Weldon, C., Cuningham, M., Turner, A.

Life History

Reproduction

Breeding takes place in small permanent water bodies, in area where there are no permanent water bodies the breeding will begin with the first heavy rains. Wagner (1986) found that after breeding 25 000 eggs are laid in two gelatinous strings, often times wrapped around aquatic vegetation (Text from Minter et al., 2004, © SI/MAB Biodiversity Program).

Males call from inside breeding habitats, both permanent and temporary pools. Females are attracted to the calls and when approaching the chorus they are quickly grasped by males. Many males may try to grasp one female forming large balls of animals. Eggs are laid in long strings (bead-like) that have many thousands of eggs (Text from Measey et al. 2009, © SANBI).

Males call while floating in bodies of water, including garden pools. The call is a loud extended snore repeated at three second intervals. Males call alternately with one another or with males of different species. Clutches are laid by amplectant pairs throughout the year, but especially during peak rainy periods. Small black eggs are laid in two parallel strings containing a total of 15,000 to 25,000 small black eggs. Small dark tadpoles with bright specks emerge after 2 - 3 days and reach metamorphosis after 75 days (Text from Harper et al., 2010).

Author(s): Zimkus, Breda; Travis, Bergmann; du Preez,L.H., Weldon, C., Cuningham, M., Turner, A.

(cc) BY-NC

Rights holder(s): Zimkus, Breda; Travis, Bergmann; du Preez,L.H., Weldon, C., Cuningham, M., Turner, A.

Advertisement Call

Calling takes place from concealed sites during September to November. This species shows site fidelity, returning year after year. When calling takes place large choruses form, that can last for several weeks (Text from Minter et al., 2004, © SI/MAB Biodiversity Program).

Males call throughout the year, but are especially loud after the fi rst rains in October and November. Their call is like a sawing noise 'rrrrrrr rrrrrrr' long distances (Text from Measey et al. 2009, © SANBI).

Author(s): Travis, Bergmann; du Preez,L.H., Weldon, C., Cuningham, M., Turner, A.

(cc) BY-NC

Rights holder(s): Travis, Bergmann; du Preez,L.H., Weldon, C., Cuningham, M., Turner, A.

Metamorphosis

Metamorphosis is complete after 5-6 weeks. Once front legs have developed the toadlets leave the water until their tails are absorbed (Text from Minter et al., 2004, © SI/MAB Biodiversity Program).

Author(s): Bergmann, Travis

(cc) BY-NC

Rights holder(s): Bergmann, Travis

Tadpole morphology

The tadpoles hatch after a week and mass together as small, very black, forms. They have toxins which make them unpalatable to birds and mammals but are eaten by clawed frogs and aquatic insects. After two months, small metamorphs begin to leave the water and move into the surrounding habitat. These can be so numerous that they carpet the ground in some areas and it is difficult to avoid stepping on them. Many fall prey to predators and their numbers reduce sharply over the following months as they disperse into the environment. At this small size they can be confused with ***Arthroleptis xenodactyloides*** and ***Phrynobatrachus scheffleri*** (Text from Measey et al. 2009, © SANBI).

Author(s): Travis, Bergmann

(cc) BY-NC

Rights holder(s): Travis, Bergmann

Behaviour

Activity and Special Behaviors

This is a very common and familiar species which can be found in smallholdings, around and even in houses. These toads often congregate around lights in the evenings to pick up insects which are attracted to them. When attacked by predators ***B. gutturalis*** exudes a toxin from the parotid glands which contains epinephrine and can be fatal to small mammals. Despite this defense, adults may still be preyed upon (Text from Harper et al., 2010).

Author(s): Zimkus, Breda

Rights holder(s): Zimkus, Breda

Conservation

IUCN Red List Category and Justification of Conservation Status

A. gutturalis is relatively secure as it is widely distributed, locally abundant and highly adaptable to human settlement (Text from Minter et al., 2004, © SI/MAB Biodiversity Program).

Author(s): du Preez,L.H., Weldon, C., Cuningham, M., Turner, A.

Rights holder(s): du Preez,L.H., Weldon, C., Cuningham, M., Turner, A.

Taxonomy

Bufo spinosus Bocage, 1868 (synonym)
Bufo regularis gutturalis Power, 1927 (synonym)
Bufo regularis gutteralis - Loveridge, 1929 (synonym)
Bufo regularis ngamiensis FitzSimons, 1932 (synonym)
Bufo ngamiensis - Poynton, 1964 (synonym)
Bufo gutturalis - Tandy and Keith, 1972 (synonym)
Amietophrynus gutturalis
- Frost, Grant, Faivovich, Bain, Haas, Haddad, de Sá, Channing, Wilkinson, Donnellan, Raxworthy, Campbell, Blotto, Moler, Drewes, Nussbaum, Lynch, Green, and Wheeler, 2006 (synonym)

Common Names

Marbled Toad (English), Common Toad (English), Common African Toad (English), Guttural Toad (English), Square-marked Toad (English), Leopard Toad (English), Greater Cross-marked Toad (English), Lobatsi Toad (English), Flat-backed Toad (English)

References

[Anonymous] (2004).Atlas and Red Data Book of the Frogs of South Africa, Lesotho and Swaziland. (MinterL., BurgerM., HarrisonJ., BraackH H., BishopP J., KloepferD., Ed.).SI/MAB Series. 9, Washington, D.C.: Smithsonian Institution.

Channing, A., & Howell K. (2006).Amphibians of East Africa. Comstock books in herpetology. 418 p., [24] p. of plates. Ithaca: Comstock Pub. Associates/Cornell University Press.

Harper, E. B., Measey G. J., Patrick D. A., Menegon M., & Vonesh J. R. (2010).Field Guide to Amphibians of the Eastern Arc Mountains and Coastal Forests of Tanzania and Kenya. 320. Nairobi, Kenya: Camerapix Publishers International.

Measey, G. J., Malonza P. K., & Muchai V. (2009).Amphibians of the Taita Hills / Am?bia wa milima ya Taita. SANBI Biodiversity Series 12.

Poynton, J. C. (1991).Amphibians of southeastern Tanzania, with special reference to Stephopaedes and Mertensophryne (Bufonidae).

Bulletin of the Museum of Comparative Zoology. 152(8), 451-473.

Rose, W. (1962).The Reptiles and Amphibians of Southern Africa. (Rev E., Ed.).

Wager, V. A. (1986).Frogs of South Africa. Craighall, South Africa: Delta Books.

(cc) BY-NC

Amietophrynus gutturalis from Pemba Island, Tanzania
Photographer: Mahler, Luke and Zimkus, Breda **Submitted by:** Zimkus, Breda **Rights holder:**

(cc) BY-NC

Amietophrynus gutturalis from Pemba Island, Tanzania
Photographer: Mahler, Luke and Zimkus, Breda **Submitted by:** Zimkus, Breda **Rights holder:**

(cc) BY-NC

Amietophrynus gutturalis from Pemba Island, Tanzania
Photographer: Mahler, Luke and Zimkus, Breda **Submitted by:** Zimkus, Breda **Rights holder:**

(cc) BY-NC

Amietophrynus gutturalis from Pemba Island, Tanzania
Photographer: Mahler, Luke and Zimkus, Breda **Submitted by:** Zimkus, Breda **Rights holder:**

(cc) BY-NC

Amietophrynus gutturalis

Photographer: Measey, G.J. **Submitted by:** Bergmann, Travis **Rights holder:** Harper, et al. (2010; Field guide to the amphibians of the Eastern Arc Mountains and Coastal Forests of Tanzania and Kenya)