

## NOTES ON AMPHIBIA IN THE TSITSIKAMA NATIONAL PARKS

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### *Introduction*

The Tsitsikama Coastal National Park, Republic of South Africa, is situated between 23°30'E and 24°15'E and along the 34°02'S latitude whereas the Tsitsikama Forest National Park is a small indigenous forest (478 ha) situated approximately 8 km to the north of the Coastal Park.

Geologically the area is dominated by the Table Mountain Series (Toerien 1976) and the soils, particularly those of the forest are usually very acid.

The vegetation of the area is mainly macchia and forest. The macchia is commonly termed "fynbos" or Cape flora and has a preponderance of Proteaceae and Ericaceae. The forest community is termed the Southern Cape Indigenous forest (Von Breitenbach 1974). In places the forest slopes are separated from the shore by a narrow strip of grassland. Some of the larger mountain streams cross this area directly, but much of the drainage from the slopes collects here in thickly vegetated vleis before seeping through to the sea. The rich floristic communities of Tsitsikama are supported by a high rainfall (above 1 000 mm p.a.) which is distributed throughout the year.

In these moist conditions frogs are abundant. Although some species had been recorded in the normal course of conservation activities, a preliminary survey was undertaken in November 1976 to try to determine the number and distribution of all species represented in the region.

### *Results*

A systematic list of species now known to occur in the Parks is shown in Table 1. The nomenclature is according to Poynton (1964).

Table 1  
*Systematic list of Amphibia recorded in the Tsitsikama National Park:*

Order Anura	
Suborder – Opisthocoela	
Family – Pipidae	Genus – <i>Xenopus</i> Wagler <i>X. laevis laevis</i> (Daudin)
Suborder – Procoela	
Family – Bufonidae	Genus – <i>Bufo</i> Laurenti <i>B. rangeri</i> Hewitt
Suborder – Diplasiochoela	
Family – Microhylidae	
Subfamily – Brevicipitinae	Genus – <i>Breviceps</i> Merrem <i>B. fuscus</i> Hewitt
Family – Ranidae	
Subfamily – Raninae	Genus – <i>Rana</i> Linnaeus <i>R. fasciata fasciata</i> Smith <i>R. fuscigula</i> Dum, and Bib. <i>R. grayi grayi</i> Smith
Subfamily – Phrynobatrachinae	Genus – <i>Cacosternum</i> Boulenger <i>C. nanum nanum</i> Boulenger
Subfamily – Hyperoliinae	Genus – <i>Kassina</i> Girard <i>K. weallei</i> Boulenger Genus – <i>Afrixalus</i> Laurent <i>A. brachcynemis knysnae</i> (Loveridge) Genus – <i>Hyperolius</i> Rapp <i>H. horstocki</i> (Schlegel) <i>H. viridiflavus verrucosus</i> Smith

The Tsitsikama Parks include a wide variety of habitats suitable for amphibian life. Ten types were identified within four major topographical regions and the species associated with each of these are shown in Table 2. Definitions of aquatic biotopes used by Noble (1974) have been adhered to where applicable.

Table 2

Amphibian habitat preferences observed in the Tsitsikama Parks

	COASTAL STRIP			FOREST			PLATEAU (Alt ± 200 m)			MAJOR RIVERS
	Splash zone	Vlei	Streams	Forest floor	Sparsely vegetated pans	Mountain streams	Pans	Sponge	Agricultural dams	Flood pans
<i>Xenopus l. laevis</i>		x	x		x	x	x		x	x
<i>Bufo rangeri</i>		x	x				x		x	x
<i>Breviiceps fuscus</i>				x						
<i>Rana g. grayi</i>	x	x	x		x	x	x	x		x
<i>Rana fuscigula</i>			x		x	x	x		x	x
<i>Rana f. fasciata</i>		x	x					x	x	
<i>Cacosternum n. nanum</i>		x	x		x		x	x	x	
<i>Kassina ueallesi</i>			x		x		x		x	
<i>Afrixalus brachynemus knysnae</i>							x			
<i>Hyperolius horstocki</i>							x			
<i>H. viridiflavus verrucosus</i>			x				x		x	

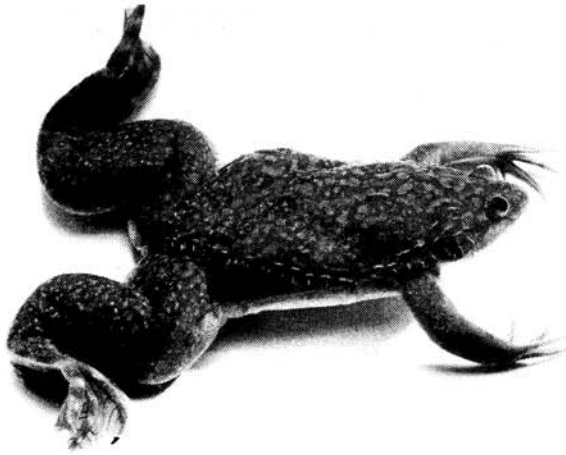


Fig. 1. *Xenopus laevis laevis* (Eng. Common Platanna, Afr. Gewone Platanna).

The species (Fig. 1) occurs in all vleis, streams, pans and dams in the region.

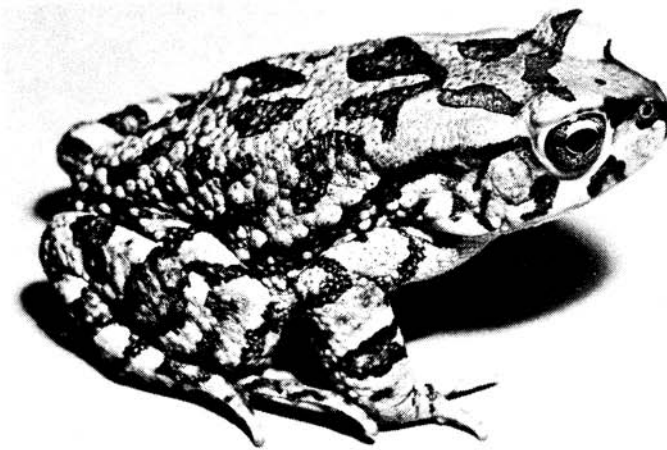


Fig. 2. *Bufo rangeri* (Eng. Raucous Toad, Afr. Lawaaierige skurwepadda).

This, the only species of toad recorded in the Parks (Fig. 2), is common and widespread. Small specimens of 10 mm–20 mm were observed in dry macchia along the Otter Trail during February. Interesting breeding sites were seepage vleis almost within the coastal splash zone. Other sites were floodwater pans alongside the Storms River and Groot River and at most of the agricultural dams.



Fig. 3. *Breviceps fuscus* (Eng. Tsitsikama Rainfrog, Afr. Tsitsikamase blaasop).

Although not abundant, this species (Fig. 3) is widespread through the forested areas. It has been heard calling near the Big Tree, Paul Sauerhoek, Storms River Mouth and along the Otter Trail. Specimens have been collected at Storms River Mouth and at the Lottering River estuary.



Fig. 4. *Rana grayi grayi* (Eng. Spotted Rana, Afr. Gespikkelde graspadde).

This species (Fig. 4) is very widely distributed in the two parks. Large breeding colonies were located at most bodies of water in both macchia and deep forest. Breeding also occurs in vleis on the coast and even within the splash zone. Tadpoles were collected from water which was distinctly saline to the taste.



Fig. 5. *Rana fuscigula* (Eng. Cape Rana, Afr. Kaapse graspadda).

Whilst this is a common species (Fig. 5) in most aquatic habitats, particularly forest streams and farm dams, it does not appear to make use of the seepage vleis adjacent to the sea. Very large specimens have been collected in the area, the largest being 113 mm (snout/vent) which because of its size was initially thought to be a bullfrog.

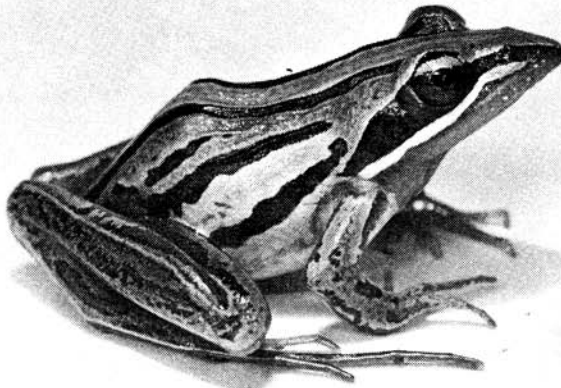


Fig. 6. *Rana fasciata fasciata* (Eng. Striped Rana, Afr. Langtoon-graspadda).

This species (Fig. 6) is common in areas of hygrophilous grassland around Storms River Mouth cottages and caravan park, the banks of agricultural dams and Covie stream. It is noticeably absent from forest areas and dense exotic plantations.

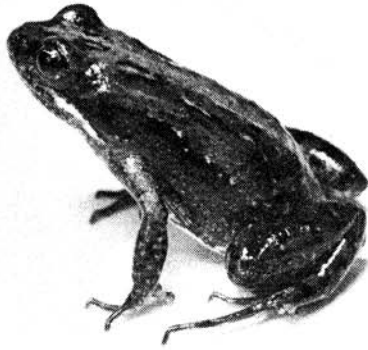


Fig. 7. *Cacosternum nanum nanum* (Eng. Eastern Dainty Frog, Afr. Oosterlike blikslanertjie).

Typical breeding localities for this species (Fig. 7) are swamp areas with dense aquatic vegetation. These include coastal vleis, roadside vleis, both in and away from forest, and the grassy verges of farm dams.



Fig. 8. *Kassina wallei* (Eng. Long-toed Running Frog, Afr. Langtoon-vleipadda).

The call site is generally in quite deep water in areas where vegetation can be used for support. The species (Fig. 8) is common in those pans and vleis where these conditions are found.

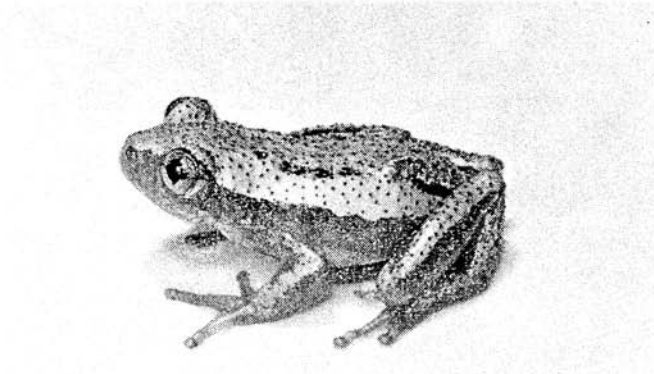


Fig. 9. *Afrixalus brachycnemis knysnae* (Eng. Knysna Spiny Reed Frog, Afr. Knysnase stekelrietpaddatjie).

This species (Fig. 9) was collected at only one locality, a shallow pan two km south of Covie village. Numbers of calling males and amplexant pairs were observed on water-lily pads. Males were generally smaller and more spinose than females. In captivity one amplexant pair laid 38 eggs, the albumen of which was exceptionally adhesive.

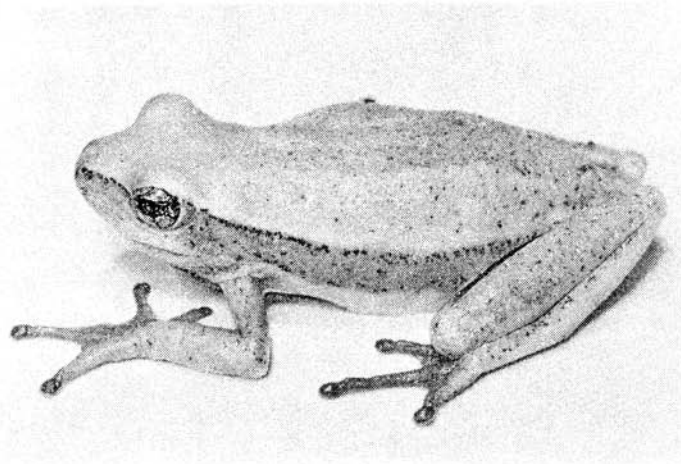


Fig. 10. *Hyperolius horstocki* (Eng. Arum Frog, Afr. Aronspadda).

Like *Afrixalus*, this species (Fig. 10) was only located at the pan near Covie. Males call from conspicuous positions one metre above ground level in macchia shrubs at the water's edge. Very few individuals were heard.



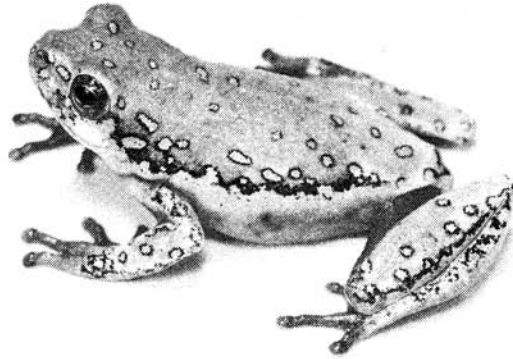


Fig. 11. *Hyperolius viridiflavus verrucosus* (Eng. Southern Painted Reed Frog, Afr. Transkeise gemarmerde rietpadda).

Large choruses of this species (Fig. 11) were found in thick *Phragmites* beds in swamp areas of farm dams at the eastern extremity of the Coastal Park. It was also encountered in much smaller numbers near the Storms River caravan park and at pans on the plateau near Covie. As far as we are aware, this is the most westerly record of the species.

#### REFERENCES

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