

**BUFO PARDALIS (ANURA:
BUFONIDAE): MATING CALL AND
CALLING BEHAVIOUR**

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The mating calls of many members of the 'regularis group' of toads (*sensu* Poynton 1964) are well known and have been examined spectrographically (Tandy & Keith 1972; Passmore 1972). Two members of the 'regularis group' are confined to Southern Africa (Poynton 1964) and the calls of one of these species, *Bufo pardalis* Hewitt, were not analysed by Tandy & Keith (1972). Furthermore there is some confusion in the literature regarding the mating call of this species. For these reasons this mating call is here clarified.

The mating call of *B. pardalis* was first described by Ranger (in Hewitt 1935) as 'a loud snore - a drawn out sound'. Poynton (1964) notes that the 'snore' is similar to that of *B. regularis* Reuss. The call has also been described as 'ghurr ghurr' by Hewitt (1937). Wager (1965) notes: 'They are said to make a short, soft, grunt, audible only at a few feet, "ugh-ugh-ugh", drawn out like a snore'. This description probably stems from Hewitt's (1937) reference to a call produced when the toad is not breeding. This faint sound is presumably a release call, and is certainly not the mating call which is clearly audible for up to 2 000 m on still nights.

Mating-call recordings of *B. pardalis* were made at the farm 'Glennifer', Kei Road, Cape Province, South Africa, on 14 and 15 August 1971. The calls of 17 individuals were recorded on a Nagra III portable tape recorder at a tape speed of 38cm/sec, using a Beyer 165 microphone. Calls were analysed on a sound spectrograph (Kay model R sonagraph). Results of the call analyses are listed in Table 1.

TABLE 1

Call Duration		Call Pulse Rate		Pulses/Call	
\bar{x} (sec.)	Range (sec.)	\bar{x} (/sec.)	Range (/sec.)	\bar{x}	Range
1,41	1,06-1,61	21,71	18,0-25,2	30	24-35

The dominant frequency range is 0,75-1,3 kHz. The chief characteristics of the call of this species are the long call duration and the slow pulse rate. The call is similar to that of *B. regularis* Reuss and very different from the calls of the other members of the 'regularis group' in South Africa (Passmore 1972). Although the pulse rates of *B. pardalis* and *B. regularis* are similar (Passmore 1972), the call duration and frequency structure clearly differentiate them.

B. pardalis usually calls from a floating position, with only the snout protruding above the surface of the water (Hewitt 1935, 1937; Poynton 1964; pers. obs.), and is the only member of the 'regularis group' which commonly does so. It floats on the water with the hind limbs outstretched and repeatedly expands the vocal sac. This results in the anterior end of the body being lifted out of the water due to the buoyancy of the sac. Males frequently swim to another part of the pond after having produced a series of calls. This calling behaviour is very similar to that of *B. carens* Smith. Although *B. pardalis* usually calls from a floating position, in a chorus of 12 males, two were found calling from cavities beneath rocks at the edge of the water. Calling while sitting on banks of pools has also been observed on a few occasions (Ranger personal communication). Choruses are most intense at night, but have been noted on a number of occasions to continue throughout the day.

The call of this species is interesting in that it is produced from a floating position, unlike the calls of other members of the 'regularis group'. Martin (1972) notes that *B. pardalis* diverges most from other members of the group on the

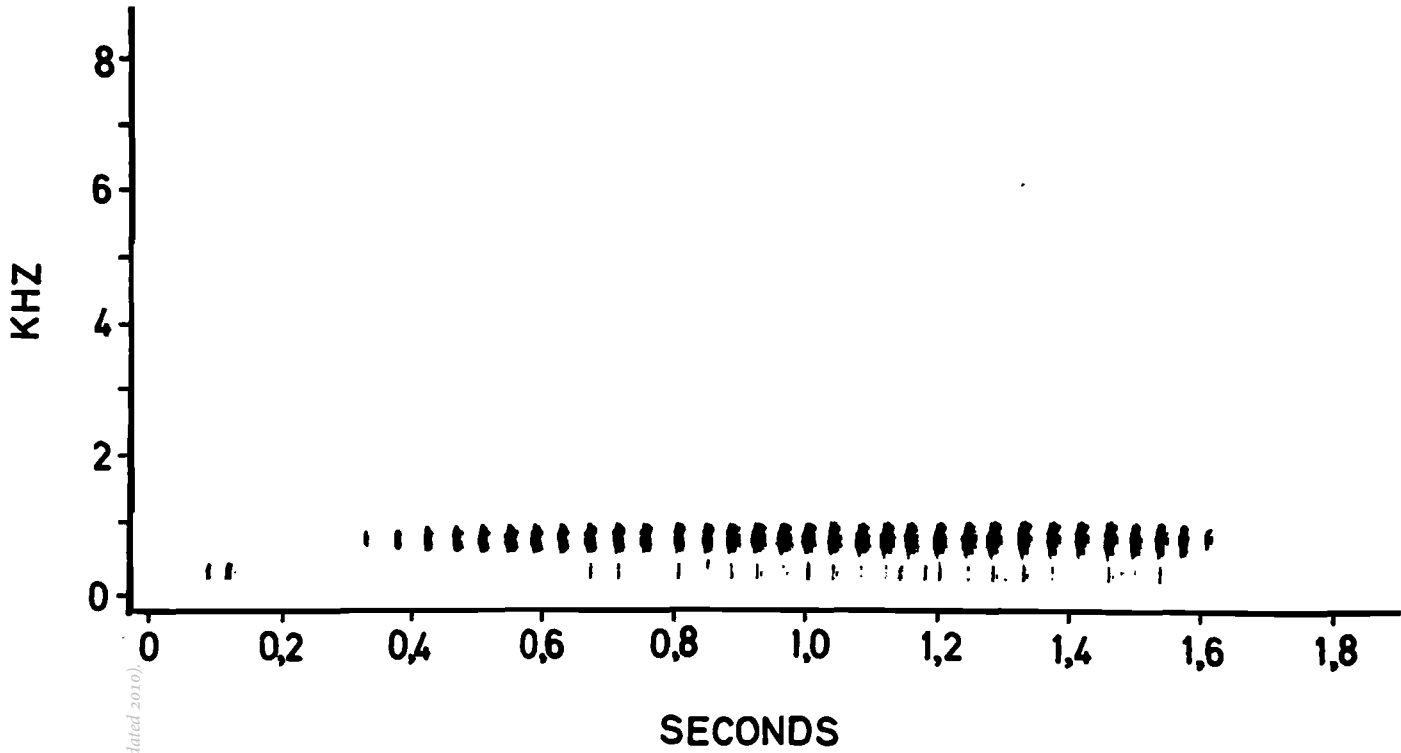


FIGURE 1

Sonagram of the mating call of *Bufo pardalis* recorded at Kei Road, Cape, 15 August 1971, 11h00, air temperature 15,0°C. (Wide band portrayal - 300 Hz filter).

basis of osteological characters. Tandy & Keith (1972) place this species in the *B. latifrons* complex on the basis of morphological features. Although the mating call is basically similar to that of other members of the 'regularis group', its behaviour while calling is certainly very different and may perhaps support its exclusion from the 'regularis group'.

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HEWITT, J. 1935. Some new forms of batrachians

PANOPEA GLYCYMERIS (MOLLUSCA, PELECYPODA) IN THE SOUTH AFRICAN FAUNAL PROVINCE

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Panopea glycymeris (Born) (Family Hiatellidae) is a large bivalve mollusc with an interesting history. In life, the two valves of the shell gape anteriorly and posteriorly to allow the body of the animal and especially the siphons to protrude. The animal lies buried in sand or mud to a depth of one to two metres, with the posterior end uppermost, in a depth of water varying from low water of springs to several metres. The species is known to live from the Mediterranean and Atlantic coast of Portugal to North-west and West Africa as far as Baia dos Tigres in Angola

(Kensley 1974). From its range, this is obviously a warm-temperate species, and is also known as a Pleistocene fossil from Port Elizabeth, Klein Brak River, and Velddrif in the Cape. Tankard (1975) dealing with thermally anomalous Quaternary molluscs from the Cape, regards *P. glycymeris* as an important constituent of the west coast estuarine-lagoonal facies, living in a water depth of more than five metres.

During March 1976, I accompanied an expedition to Meob Bay (approx. 24°30'S/14°30'E), a slight embayment on the coast of South West Africa, within Diamond Area no. 2, and found large numbers of valves of *P. glycymeris* littering the high water region of the beach. The shells were found along a 10 km stretch of beach south of Black Rock, a dolomite and granite outcrop which forms the southern end of Meob Bay. The majority of the shells were broken, which was not surprising considering the strong wave action of the area. Nevertheless, at least 30 complete valves were found on less than one kilometre of beach. These ranged in length