AGAMA GRACILIMEMBRIS CHABANAUD, 1918 (REPTILIA: SAURIA: AGAMIDAE) IN NIGERIA

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INTRODUCTION

Due to its diminutive size and sparse distribution, Agama gracilimembris is seldom encountered in the field by the collector. Its range, diagnosis, description and colour in life have been reported by Grandison (1968), and later she discussed its taxonomic affinities to A. weidholzi (Grandison, 1969). Little else is available in the literature on this species. In this paper, new information is reported on A. gracilimembris in Nigeria where it is not uncommon in wooded savannas.

DESCRIPTION

In life, adults of both sexes vary in colour from pale sandy brown to almost black, but during the breeding season become markedly dichromic. Males develop a more vivid dorsal pattern, with pink undersides and blue sides to the tail; and sometimes pink and blue scales scattered over the whole body. Gravid females become much duller and develop 2-3 orange patches on either side of the dorsum. The head, posterior to the tympanum, becomes bluish-black with the single conical spines standing out as pale blue (Fig. 1). This colour transformation in gravid females is very similar to that observed in *A. doriae* and *A. sankaranica* (Gartshore, unpublished data). Juveniles tend to be much duller than adults, usually a pale sandy brown with only faint scrawls suggesting the adult pattern

During the breeding season females average larger than males (snout-vent length for females (n = 4) is 48-53 mm; for males (n = 5) 40-42 mm). Grandison (1968) reported 44.0-47.0 mm for males and 49.0-56.7 mm for gravid females. Juveniles captured between October and December averaged 26.7 mm (n = 7). These may have hatched as early as the previous June.

Unlike other Nigerian members of the genus this species has a marked lateral fold. Males also have a pronounced swelling at the base of the tail caused by enlarged hemipenes. The only other Nigerian agama to have this is *A. sankaranica*.

RANGE

A. gracilimembris occurs in Sudan and Guinea savanna woodlands from the Republic of Benin in the west to Central African Republic in the east (Grandison, 1968). In Nigeria, it was also observed to occur in wooded savannas. Fig. 3 gives localities from my records and those reported by Grandison (1968). Bohme (1975) collected two males and a female at Boki in northern Cameroon and Joger (1982) collected a single specimen at Benue National Park in Cameroon. Joger (personal communication) found this lizard at Koumbala camp in Central African Republic. Stephen Spawls (personal communication) recorded it at Wa, northern Ghana a range extension to the west.

Fig. 1. Two adult *Agama gracilimembris* (female on left, male on right) at the beginning of the breeding season. Note differences in dorsal pattern: the female is duller with dark areas posterior to the tympanum; the male is vividly marked and has enlarged hemipenes.





Fig. 2. Juvenile *Agama gracilimembris* captured in October. Only faint scrawls mark the adult dorsal pattern.



Fig. 3. Map of Nigeria showing localities where *Agama gracilimembris* has been observed or collected. Insert shows known range of the species.

HABITAT

A. gracilimembris was most often seen in. open lightly wooded savanna where vegetation was confined to isolated clumps. The following brief habitat descriptions serve to demonstrate the kinds of areas where this species was observed in the present study: (a) open. degraded, sloping ground of ironstone gravel and quartzite, sparsely grassed and with isolated shrubs (n = 11 observations); (b) degraded, fallow farmland with lateritic soil and isolated clumps of *Dichrostachys, Bauhinia* and *Guiera* shrubs (n = 5); (c) open, relatively undisturbed, combretaceous woodland (n = 3); (d) fragmented gneiss and quartzite ridges in mature *Anogeissus* woodland (n = 2); (e) open cultivated field or vehicle tracks in river floodplain with 2 m high grass and *Mimosa pygra* thickets (n = 2); (f) closed canopy *Isoberlinia doka* woodland near gallery forest with dense ground cover of grass (n = 1); (g) open doka woodland on smooth granitic outcrop and ironstone (n = 1); (h) edge of gallery forest on large inselberg under exfoliated slabs of granite (n = 1); (i) sandy soil in cultivated field of sorghum (n = 1). Thus, it appears that this species occurs in a wide variety of habitats in wooded savannas.

BEHAVIOURAL ECOLOGY AND SOCIAL ORGANIZATION

A. gracilimembris were often seen sunning on small termite mounds or other vantage points. When approached they fled down small holes or into grass tussocks (Fig. 4). The latter behaviour is peculiar to this agama and was an effective means of escape.



Fig. 4. Subadult *Agama gracilimembris* taking refuge in grass tussock when faced with a potential predator.

This is a solitary species. No social interactions were observed in the field but it is likely that the sexes consort only when a female is receptive. Males occupy home ranges but do not apparently defend territories or attempt to secure sole access to females. This is in marked contrast to some other species of agamas such as A. agama and A. doriae which are very conspicuous in their defense of territories and control of access to females (Gartshore, unpublished data). This difference in social organization may account for the male's smaller size relative to the female's. From March to June males tend to occupy elevated perches 0.5-1.5 m high in leafless shrubs where possibly they gain a better vantage point for surveillance of potential mates. Gravid females were observed from 2nd April to 30th May, thus, as in other agamas breeding commences with the onset of the first rains in April. Few adults were observed after June, the last record being on 22nd August. Thereafter, only juveniles were observed which mature over the dry season to breed the following year. It is clear, that here we are dealing with an annual species. A. weidholzi the western vicariant of A. gracilimembris is solitary and probably also an annual species (Joger, 1979).

It is of interest to note that in the case of *A. gracilimembris* and *A. sankaranica* males share the following characteristics: solitary, reduced nuptial colours, size smaller than females, conspicuous hemipenes and use of surveillance posts. These similarities are more likely to be due to concurring social organizations than any real taxonomic affinities.

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