

The Status of the Lizard Genera *Blaesodactylus* Boettger
and *Homopholis* Boulenger (Reptilia: Gekkonidae)

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Examination of the type specimens of *Blaesodactylus boivini* (A. Duméril, 1856) and *Homopholis heterolepis* Boulenger 1896 indicated these forms to be both congeneric and conspecific. The new combination *Homopholis boivini* (A. Duméril, 1856) becomes the valid name for this species. The genus *Homopholis* is reassessed and the generic name *Blaesodactylus* is subordinated as a junior synonym of the former.

WHILE working on aspects of the functional and comparative anatomy of gekkonid lizards, examples of *Homopholis* Boulenger 1885 and *Blaesodactylus* Boettger 1893 were examined. As the name implies the genus *Homopholis* was erected for geckos which had a uniform body scalation. One of the features of *Blaesodactylus*, however, is the presence of

distinct tubercles on the dorsum. Originally *Homopholis* was instated for forms from mainland Africa while *Blaesodactylus* was restricted to Madagascar and adjacent islands. In 1896, however, Boulenger described a gecko from southwest Madagascar under the name *Homopholis heterolepis*. This form, as the somewhat paradoxical name might suggest, had a dorsal

lepidosis of tubercles interspersed amongst granules. He believed, however, that the first digit of both manus and pes was clawless, but this is not the case. Thus, by 1896 both *Blaesodactylus* and *Homopholis* had been reported from Madagascar. The former has remained monotypic but the latter has congeners on mainland Africa.

In 1944 and again in 1947 Loveridge stated that the presence or absence of tubercles alone could not be considered as adequate grounds for separating the Madagascar form, *Homopholis heterolepis*, from other members of *Homopholis*. Loveridge was not, however, concerned, at the time, with the lizard fauna of Madagascar and so did not examine or comment upon the genus *Blaesodactylus*.

Angel (1942), however, was aware of the presence of both *B. boivini* and *H. heterolepis* on Madagascar but apparently failed to observe their overall general morphological similarity. In his key he distinguishes *Homopholis* from *Blaesodactylus* by implying that the former lacks tubercles, yet in the specific description (Angel, 1942:61) he states that tubercles are present. It appears that this inconsistency has fostered the recognition of both of these genera in Madagascan herpetofauna since that time.

OBSERVATIONS

I have examined the holotype of *Homopholis heterolepis* Boulenger 1896, in the British Museum (Natural History) (BMNH 1946.8.26.5) and the holotype of *Blaesodactylus boivini* (A. Duméril, 1856), in the Museum National d'Histoire Naturelle, Paris (MNHN 5239). From the general collections in the BMNH I also examined some other specimens registered under the name *Blaesodactylus boivini* (BMNH 1930.7.1.99 and 1930.7.1.100). The localities for the type specimens are very vague: *Homopholis heterolepis* is reported from southwest Madagascar, while the locality given for *Blaesodactylus boivini* is simply Madagascar. The range given by Wermuth (1965) for the former is western Madagascar while the recorded range for the latter is somewhat more extensive and encompasses northeast, north, northwest, east, west and southwest Madagascar and also the islands of Sainte Marie, Nossi Mangabé and Nossi Bé (Angel, 1942).

Both nominal forms under discussion appear to have similar habitat preferences. Angel (1942) stated that *Blaesodactylus boivini* was a forest

species and Barbour (1918) reported a specimen from the eastern forest of Madagascar. Boettger (1913) reported this species from a wide area of Madagascar and Mocquard (1900) reported a specimen from southwest Madagascar, but neither gave any indication of its habitat. *Homopholis heterolepis* was stated by Angel (1942) to be a forest species, found living in the crevices of trees. Böhme (pers. comm.) has indicated, with the benefit of the examination of newly acquired specimens, that two distinct populations of this complex exist on Madagascar, one from the north and one from the hotter, drier southwest, and that these may possibly be regarded as subspecies.

The types of the two nominal species were compared with reference to a number of characters and the resulting data, where appropriate, were compared with the range of variation reported by Angel (1942) for *Blaesodactylus boivini* (indicated by an asterisk). The features compared were mental and submental pattern (Fig. 1), dorsal and ventral lepidosis, * the number of longitudinal scale rows at mid-belly; the toothed nature of the posterior border of the belly scales, the type of subcaudal scales, * the number of scansors on all digits of both manus and pes, the number of digits bearing claws, * the number and nature of the scales bordering the nostril, the number of internasals, * the number of longitudinal tubercle rows, the number of tubercles in one line from the occiput to the tail base, * the number of upper and lower labials, the presence of postanal sacs and the number of divided scansors on the first digit of both manus and pes.

In all respects the two forms showed considerable congruence and fell within the range of variation given for *Blaesodactylus boivini* by Angel (1942). There thus appear to be no rational grounds for the retention of two nominally distinct genera. Detailed examination of the digital anatomy of specimens of *Blaesodactylus* and comparison with similar observations on specimens of *Homopholis* confirm this similarity.

NOMENCLATURE

The nature of this problem means that a new combination of names is necessary. The generic name *Homopholis* Boulenger 1885 antedates *Blaesodactylus* Boettger 1893 and so has priority. *Blaesodactylus* thus becomes a junior synonym of *Homopholis*. The specific name *heterolepis* Boulenger 1885, however, is younger than *boivini*

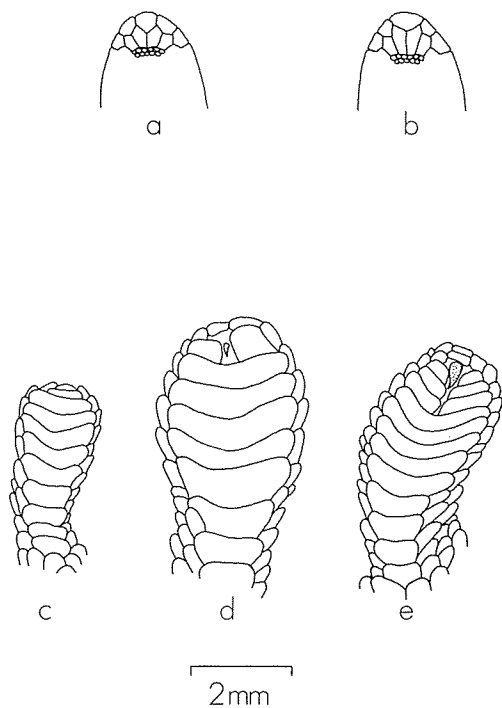


Fig. 1. a. Chinshield pattern of *Homopholis heterolepis* BMNH 1946.8.26.5; b. Chinshield pattern of *Blaesodactylus boivini* Paris Museum 5239; Chinshields not to scale; c. Digit one, left pes of *Homopholis fasciata* (BMNH 1931.7.20.253); d. Digit one, left pes of *Homopholis walbergii* (BMNH 1907.4.9.6); e. Digit one, left pes of *Homopholis boivini* (BMNH 1946.8.26.5). The series of digits shows the absence of a claw and divided terminal scansors in *H. fasciata*; the presence of a minute claw and a single divided scansor in *H. walbergii*; and the presence of a moderate claw and three divided scansors in *H. boivini*.

A. Duméril, 1856 and so becomes a junior synonym of the latter. Thus, the oldest available name for the species is *Homopholis boivini* (A. Duméril). This combination follows article 23 e (i), recommendation 22B and article 51 (d) of the International Code of Zoological Nomenclature (1961) in its synthesis.

RESTATEMENT OF THE DIAGNOSIS OF *HOMOPHOLIS*

Digits free, strongly dilated, covered above with scales, not denticulate laterally; below with chevron-shaped scansors which are undivided except for those at the distal extremity of digit one in some species (Fig. 1), number of divided scansors 0–3 according to species; claw on digit

one, manus and pes, absent or reduced and held between divided scansors; internally the digits have large, pliable paraphalangeal elements strongly united with the lateral digital tendons (Russell, 1976).

Pupil vertical, apparently with crenate edges (*Gekko*-type pupil of Underwood, 1954); upper "eyelid" distinct, lower reduced; dorsal lepidosis of moderate, unequal or subequal, flat, juxtaposed or imbricate scales which may (Madagascar) or may not (mainland Africa) have tubercles disposed among them; tail thick, subcylindrical, tapering, covered above with moderate, smooth, juxtaposed or imbricate scales; postanal sacs and bones present; males with preanal pores.

Range: Ethiopia and Somalia south to Zululand, South Africa. Also all but the extreme southeastern portion of Madagascar and on islands off the Madagascar coast. The species currently recognized are: *Homopholis boivini* (A. Duméril) comb. nov., Madagascar. *Homopholis fasciata* (Boulenger). [*Homopholis fasciata fasciata*, northern Kenya south to Tanzania; *Homopholis fasciata erlangeri* Steindachner, Ethiopia south to northern Kenya.] *Homopholis walbergii* (A. Smith). [*Homopholis walbergii walbergii*, Zambia, Swaziland, Mozambique, northern Transvaal; *Homopholis walbergii arnoldi* Loveridge, Rhodesia, Botswana.].

REDESCRIPTION OF *HOMOPHOLIS BOIVINI*

Head large, snout rounded, distance between tip of snout and anterior border of eye $1\frac{1}{2}$ times the diameter of the eye and $1\frac{1}{3}$ times the distance between the posterior border of the eye and the anterior border of the ear opening; body depressed; digits strongly dilated and provided below with a series of chevron-shaped scansors, scansors undivided except at the distal end of digit one, manus and pes, where three divided scansors occur, with a claw visible between them (Fig. 1); 8–11 scansors beneath digit one, 13–18 beneath digit four. Phalangeal formula 2-3-4-5-3, 2-3-4-5-4; phalanx two of digit four shortest of all phalanges in that digit except the distalmost phalanx.

Top of head concave between the eyes; snout with rounded juxtaposed scales grading to granules towards the back of the head; occiput with small, rounded tubercles interspersed amongst the granules; same scalation continued onto dorsum with the tubercles becoming larger; dorsal tubercles convex or but weakly keeled;

tubercles in about 16–20 longitudinal rows, each row with approximately 40–44 tubercles from occiput to tail base; ventral scales cycloid, imbricate, toothed posteriorly, equal in size to or larger than the largest dorsal tubercles; ventrals in 28–40 longitudinal rows at mid-body.

Rostral scale twice as wide as high; nostril between the rostral, first upper labial and 3–5 nasals; single internasal scale; upper labials 11–15, lower labials 9–13; mental large, sub-pentagonal, middle postmentals largest and in contact at midline (Fig. 1), sharp transition between postmental series and gular granules; tail as long as head and body, subcylindrical, with small, regular scales above and a row of laterally expanded plates on midventral line; postanal sacs and bones present.

CONCLUSIONS

The overall similarity between the types of the two nominal species (*Blaesodactylus boivini* and *Homopholis heterolepis*) is strongly suggestive that they should be regarded as conspecific. The recognition of the genus *Homopholis*, including *boivini*, as a monophyletic unit appears to be the most parsimonious option and the presence or absence of dorsal tubercles seems to be a character which has obscured relationships. Other genera, such as *Gekko* Laurenti, *Pachydactylus* Wiegmann, *Phyllodactylus* Gray and *Hemidactylus* Oken, all include forms with and without tubercles (Russell, 1972). All of the above mentioned genera are far larger and much more variable than *Homopholis* and it would appear to be inconsistent to utilize the criterion of possession of tubercles for the recognition of one genus while denying its validity when dealing with another. Tubercles may be species specific characters but there is no reason to regard them as having any special significance at the generic level. Loveridge (1944) indicated that this basis for distinction was not valid with respect to *Homopholis*. The nature of the internal digital structure is quite uniform in the genus *Homopholis* (including *H. boivini*) and bears a combination of derived characters (Russell, 1976) which are indicative of an origin from a common stock.

SUMMARY

The generic name *Blaesodactylus* Boettger is demonstrated to be a junior synonym of *Homopholis* Boulenger. The range of *Homopholis* is stated. Those forms with a homogenous

dorsal lepidosis are restricted to mainland Africa while the Madagascar species has a dorsal scalation with tubercles interspersed among granules. All forms appear to be primarily forest species although in some areas of Africa they have radiated beyond this habitat (Broadley, 1966). It is evident that within the genus some species possess a distinct claw on the first digit while in *H. fasciata* all external traces of the claw on this digit have been lost.

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