

## Western Black-headed Batis *Batis erlangeri*: a separate species consisting of two subspecies

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***Batis erlangeri*: une espèce distincte composée de deux sous-espèces.** La distribution, la taille et les vocalisations du taxon traditionnel *Batis minor* (Pririt à joues noires) suggèrent que celui-ci mérite d'être divisé en deux espèces à part entière: *B. minor* et *B. erlangeri*. La plus petite, *B. minor* sensu stricto, est composée de deux sous-espèces: *B. m. minor* et *B. m. suahelicus*. *B. erlangeri* comprend également deux sous-espèces. L'examen de spécimens, principalement au Musée Royal de l'Afrique Centrale, Belgique, a en effet permis la distinction morphologique de ces deux populations. Celle de la région au sud de la forêt équatoriale en RD Congo méridional et les zones limitrophes, *B. e. congoensis*, a le bec légèrement plus court que celle de la population nominale septentrionale.

The genus *Batis* is endemic to Africa and comprises a group of small, contrastingly coloured flycatcher-like birds with relatively large heads, broad bills, short legs and short tails. It is a genus of great uniformity in general appearance and behaviour. Opinions concerning species limits have varied greatly: in recent works, the number of recognised species has varied from 16 (e.g. Urban *et al.* 1997, hereafter *BoA*; Harris & Franklin 2000) to 19 (e.g. Sibley & Monroe 1990). The systematic studies of Lawson (1986, 1987) are not generally accepted: some authorities have incorporated part of his conclusions and data (e.g. *BoA*, Harris & Franklin 2000), whilst others (e.g. Dowsett & Dowsett-Lemaire 1993) have not accepted his conclusions. Given the lack of molecular research, the external morphology, ecology and distribution (sympatry or allopatry) are important in defining species limits amongst these extremely similar birds, and such factors, supplemented by differences in voice and habitat, guided me whilst preparing the Platysteiridae chapter for *Handbook of the Birds of the World* (Louette *in press*). Future research in contact regions should produce additional clues concerning some relationships.

*BoA* and Harris & Franklin (2000) treat *Batis minor* as a species—Black-headed Batis—with three subspecies, *minor*, *suahelicus* and *erlangeri*. On balance, however, I find the differences between *erlangeri* and *minor/suahelicus* sufficient to warrant recognition of two species—Eastern Black-headed Batis *B. minor* (named East Coast Black-headed Batis by Jackson 1938), consisting

of two subspecies, *minor* and *suahelicus*, and Western Black-headed Batis *B. erlangeri*, also comprising two subspecies, *erlangeri* and *congoensis*.

### Material and methods

I studied all specimens held at the Royal Museum for Central Africa, Tervuren, Belgium (RMCA) (*minor*: 2; *suahelicus*: 4; *perkeo*: 9; *erlangeri*: 51 and *congoensis*: 119) and several dozen of others, especially of taxa less well represented in the RMCA, in The Natural History Museum, Tring, UK, Muséum National d'Histoire Naturelle, Paris, France, Naturhistorisches Museum, Vienna, Austria, and Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn, Germany. Standard mensural data (flattened wing-chord, tail, tarsus and total culmen) were taken with rule and callipers for the RMCA material. I also undertook a complete literature research and compared data on voice and habitat (all references in Louette *in press*).

### Zoogeography

Where two or more *Batis* species occur together, they are usually ecologically segregated by habitat preferences. R. J. Dowsett (*in litt.* 2003) noted that a number of *Batis* species replace each other, in some cases even beyond the same superspecies. Nevertheless, *B. minor sensu lato* is narrowly sympatric with four of the five paraspecies of the *Batis [senegalensis]* superspecies (named *B. [molitor]* in *BoA*; the *International Code of Zoological Nomenclature*, fourth edn, 1999, indicates that the oldest species name must be used for superspecies), respectively Senegal Batis *B. senegalensis*,

Chin-spot Batis *B. molitor*, East Coast Batis *B. soror* and Grey-headed Batis *B. orientalis* (the fifth being the extralimital Pirit Batis *B. pririt*). Thus, *B. erlangeri* seems to overlap with *B. senegalensis* in Cameroon (Languy submitted); although the specimens listed by Good (1953) from Yaoundé, Bafia and Meiganga are all *erlangeri*, not *senegalensis*. It is also known to overlap with *B. molitor* at one locality, Djambala, in Congo (Rand *et al.* 1959), at a few localities in DR Congo (Louette 1987, Demey *et al.* 2000) and somewhat more widely in western Kenya (Lewis & Pomeroy 1989). *B. minor* overlaps with *B. soror* on the Kenyan coast (Lewis & Pomeroy 1989). Overlap of *B. minor sensu lato* with *B. orientalis* is very marginal in Kenya (see Zimmerman *et al.* 1996, who admit only one locality, confirmed by D. A. Turner pers. comm., *contra* Lewis & Pomeroy 1989), but that of *B. erlangeri* with *B. orientalis* is claimed to be very extensive in Sudan (Nikolaus 1987). This, however, requires further study, because few specimens have been correctly identified beyond doubt. Although the existence of a cline between *orientalis* and 'minor' (= *erlangeri*) in Chad and the Central African Republic was suggested by Vielliard (1972), he, and subsequently also Lawson (1987), may have been confused. Indeed, the form *minor* was originally described as a subspecies of *B. orientalis* and the subspecies *chadensis*, now in *B. orientalis*, was placed in *B. minor sensu lato* by Rand (1953). The identification of specimens must be made with great care (see Zimmerman *et al.* 1996) and I suspect, from the material in Vienna and Paris, that Grey-headed Batis (of which the female has a more brownish, not greyish tone to the neck) generally occurs north of the range of Western Black-headed Batis, probably with restricted overlap. Thus, the northern limit of the range of Western Black-headed Batis (Fig. 1) must be considered tentative. Vocalisations seem to be of limited importance to study relationships in *Batis* (F. Dowsett-Lemaire pers. comm.). Their comparison (from Chappuis 2000) suggests nevertheless that *orientalis* belongs to the *Batis [senegalensis]* superspecies and that *Batis minor sensu lato* cannot be its close relative. The local variation in vocalisations in the latter is important (Harris & Franklin 2000, F. Dowsett-Lemaire pers. comm.); the brief voice comparison, as deduced from the literature, is given here for general information.

The ranges of the populations of *Batis minor sensu lato* are disjunct (Fig. 1). No other bird species shares a similar distribution pattern. Because the eastern forms, *minor* (in southern Somalia) and *suahelicus* (from Kenya and Tanzania), are not in geographical contact with the rest of the population, their relationship cannot be field-tested. Pygmy Batis *B. perkeo* occupies part of the range between *erlangeri* and *minor/suahelicus* in arid and semi-arid East Africa, where it generally prefers drier habitat (see habitat comparison). Nevertheless, given that it is vocally more like *B. minor*, not *B. molitor*, and that it too is locally sympatric with *B. orientalis* (Zimmerman *et al.* 1996), *B. perkeo* cannot be considered part of the *B. [senegalensis]* superspecies. Although *B. perkeo* may be related to either *minor/suahelicus* or *erlangeri*, or to both, it is not conspecific with them, as it overlaps geographically (albeit marginally) with both (Fig. 1). At present, the distribution of the three forms, from west to east, western *B. minor sensu lato*, *B. perkeo* and eastern *B. minor sensu lato* suggests they are three separate (para)species. There is no *a priori* reason for conspecificity of the western and eastern forms. It is indispensable to include all three in the analysis.

## Voice

### *Batis erlangeri*

Ringling, monotonous, pure and clear penetrating whistles, the pitch of each note rising. Varies regionally in modulation (Zimmerman *et al.* 1996, Dowsett-Lemaire 1997, Chappuis 2000).

### *Batis minor*

Drawn-out, piping, high-pitched notes, usually in groups of 2–3, first note lower, clear and ringling. Slower, longer than *B. erlangeri* (Harris & Franklin 2000).

### *Batis perkeo*

Penetrating piping notes, sharper, more ringling and less drawn-out than in *B. minor*, which it suggests, in series of up to 20 notes (Zimmerman *et al.* 1996).

## Habitat

### *Batis erlangeri*

Secondary forest, woodland, wooded grassland, large gardens.

***Batis minor***

Wooded steppe with *Acacia* and *Commiphora*; also riverine habitat (occasionally in woodland and along small watercourses in Tsavo East, Kenya). On Mt Endau present in semi-deciduous forest and patches of mist forest.

***Batis perkeo***

Trees and scrub in arid regions, woodland and wooded grassland. Thorn scrub, *Acacia* woodland and *Commiphora* country. All habitats with trees, except riverine (competition with *B. minor*) in Tsavo East. Tolerates arid conditions.

**Morphology**

The form *erlangeri* (including *congoensis*: see below) is significantly larger (wing-chord being used as a parameter for size) than *minor* and *suahelicus*; Pygmy Batis is the smallest of the genus (Figs. 2–3; Tables 1–2; for additional measurements, see Lawson 1987).

Compared to *minor* and *suahelicus*, *erlangeri* is also darker on the mantle, but less black on top of the head. Females have more olive wash. However, variation in plumage details between specimens of the same population is occasionally considerable, sometimes being as great as that between species. This is the case for the darkness of the crown in the group under discussion here.

The conventional grouping of all ‘black-headed’ batisses into a single species, *B. minor sensu lato*, is perhaps because all exhibit the ‘standard’ *Batis* plumage pattern, consisting of a black breast-band in males and a brown breast-band in females. This, however, may be due to coincidence and

does not necessarily prove their relationship. In congeners that do form a clear taxonomic unit, such as the *Batis [senegalensis]* superspecies, such morphological uniformity does not exist (female *B. senegalensis* have much brown dorsally and female *B. molitor*, *B. soror* and *B. pririt* have a brown throat patch, whereas *B. orientalis* is ‘standard’). Some of the forest batisses, such as Angola Batis *B. minulla* and Bioko Batis *B. poensis* also have ‘standard’ plumages.

**Size and plumage*****Batis erlangeri***

11 cm; 8.3–14.0 g. Male: crown and mantle dark, normally darker than *B. minor*, jet black, but some individuals more greyish. There is a very dark specimen (RMCA 63028), from Lusambo, Kasai, DR Congo (Figs. 4–5). Female: breast-band maroon (Fig. 6).

***Batis minor***

10 cm; 9.3–13.8 g. Male *m. minor*: crown and nape blackish or dark grey (crown colour easily confused with *B. orientalis*); *m. suahelicus*: head greyer black. Female *m. minor*: breast-band dark chestnut, dorsally tinged brown/olivaceous; *m. suahelicus* breast-band narrower.

***Batis perkeo***

8–9 cm; 5–9 g. Male: forehead, crown and back bluish grey; top of head less black than *B. minor*, but mantle generally darker. Female: washed more olive than *B. minor*; dorsally paler and browner; supercilium, throat and, in some, neck tinged rusty or yellowish; breast-band rufous or buff, not deeply saturated.

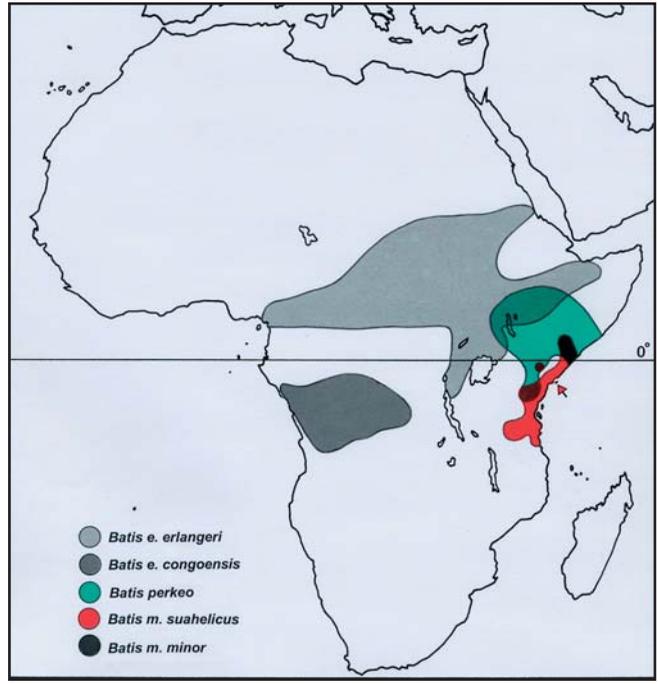
**Geographical variation*****Batis erlangeri***

The isolated population occurring south of the equatorial forest in southern DR Congo and neighbouring countries (Fig. 1, see details in Louette 2005) was described as subspecies *congoensis* by Neumann (1907), based mainly on the paler grey back of the female. Other subspecies (*nyansae* and *batesi*) have been proposed, but I consider the limited material I have seen indistinguishable. Chapin (1953) accepted *congoensis* with misgivings, ‘the status of *B. m. congoensis* seems very doubtful’ (p.661) and ‘I very much doubt that *B. m. congoensis* can really be distinguished

**Table 1.** Mean of measurements (in mm) of the wing of adult *Batis* spp. specimens in RMCA: samples (n).

**Tableau 1.** Moyenne des mensurations (mm) de l’aile de spécimens adultes de *Batis* spp. au MRAC.

	n	Wing-chord
<b>Males</b>		
<i>B. perkeo</i>	4	51.3
<i>B. m. minor</i>	1	53.5
<i>B. m. suahelicus</i>	2	55.0
<b>Females</b>		
<i>B. perkeo</i>	4	51.0
<i>B. m. minor</i>	1	53.0
<i>B. m. suahelicus</i>	2	54.3



1



2



3



4



5

**Figure 1.** Distribution of *Batis e. erlangeri* (red), *B. e. congoensis* (green), *B. minor* (blue) and *B. perkeo* (yellow).  
 La répartition de *Batis e. erlangeri* (rouge), *B. e. congoensis* (vert), *B. minor* (bleu) et *B. perkeo* (jaune).

**Figure 2.** Ventral view of specimens of (from left to right and from top to bottom) *Batis perkeo*, *B. m. minor*, *B. e. congoensis* and *B. e. erlangeri* (Alain Reygel). © Royal Museum for Central Africa, Tervuren, Belgium  
 Vue ventrale de spécimens de *Batis perkeo*, *B. m. minor*, *B. e. congoensis* et *B. e. erlangeri* (de gauche à droite et de haut en bas) (Alain Reygel). © Royal Museum for Central Africa, Tervuren, Belgium



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Captions continued on page 104

**Table 2.** Measurements (in mm) of the wing, tail, culmen and tarsus of adult *Batis erlangeri* specimens in RMCA from DR Congo: samples (n). Mean  $\pm$  standard deviation. Mann-Whitney statistical comparisons between northern (= north of the equatorial forest) *B. e. erlangeri* and southern (= south of the equatorial forest) *B. e. congoensis* populations.

**Tableau 2.** Moyenne et déviation standard des mensurations (mm) de l'aile, de la queue, du culmen et du tarse de spécimens adultes provenant de la RD Congo de *Batis erlangeri* au MRAC. Comparaison statistique Mann-Whitney entre les populations du nord de la forêt équatoriale (*B. e. erlangeri*) et de celles du sud de la forêt équatoriale (*B. e. congoensis*).

	n	Wing-chord	Tail	Culmen	Tarsus
<b>Males</b>					
<i>B. e. erlangeri</i>	18	59.8 $\pm$ 1.8	42.4 $\pm$ 1.5	13.0 $\pm$ 0.4	16.4 $\pm$ 0.9
<i>B. e. congoensis</i>	32	59.9 $\pm$ 1.6	40.8 $\pm$ 1.2	12.4 $\pm$ 0.5	15.5 $\pm$ 0.7
U-tests: P-levels		.7541	.0005	.0007	.0033
<b>Females</b>					
<i>B. e. erlangeri</i>	19	58.1 $\pm$ 1.5	40.3 $\pm$ 1.1	12.7 $\pm$ 0.5 (18)	15.1 $\pm$ 0.7
<i>B. e. congoensis</i>	33	58.8 $\pm$ 1.3	40.3 $\pm$ 1.1	12.2 $\pm$ 0.5 (32)	14.9 $\pm$ 0.6
U-tests: P-levels		.0964	.9243	.0045	.4586

from *nyansae*...In size they are equal, and I cannot confirm the statement by Neumann that females of *congoensis* are clearer gray above' (p.663). *BoA* and Harris & Franklin (2000) did not accept *con-*

*goensis*. However, as birds of this population have a statistically significant shorter bill and shorter tail (in males only) than those of the northern population (Table 2), I here restore this subspecies. The biological meaning of these differences is unknown. They are sufficiently small not to suggest a difference at species level.

#### Captions to figures on page 103

**Figure 3.** Dorsal view of specimens of (from left to right and from top to bottom) *Batis perkeo*, *B. m. minor*, *B. e. congoensis* and *B. e. erlangeri* (Alain Reygel). © Royal Museum for Central Africa, Tervuren, Belgium

Vue dorsale de spécimens de *Batis perkeo*, *B. m. minor*, *B. e. congoensis* et *B. e. erlangeri* (de gauche à droite et de haut en bas) (Alain Reygel). © Royal Museum for Central Africa, Tervuren, Belgium

**Figure 4.** Ventral view of aberrant male specimen RMCA 63028 from Lusambo (left) and 'normal' *Batis e. congoensis* male (right) (Alain Reygel). © Royal Museum for Central Africa, Tervuren, Belgium

Vue ventrale du spécimen aberrant MRAC 63028 de *Batis e. congoensis* (à gauche) et d'un spécimen « normal » (à droite) (Alain Reygel). © Royal Museum for Central Africa, Tervuren, Belgium

**Figure 5.** Dorsal view of aberrant male specimen RMCA 63028 from Lusambo (left) and 'normal' *Batis e. congoensis* male (right) (Alain Reygel). © Royal Museum for Central Africa, Tervuren, Belgium

Vue dorsale du spécimen aberrant MRAC 63028 de *Batis e. congoensis* (à gauche) et d'un spécimen « normal » (à droite) (Alain Reygel). © Royal Museum for Central Africa, Tervuren, Belgium

**Figure 6.** Female of Western Black-headed Batis *Batis erlangeri* on its nest in Cameroon (Roger Fotso)

La femelle de *Batis erlangeri* sur son nid au Cameroun (Roger Fotso)

#### *Batis minor*

The *suahelicus* population differs from the nominate race in having a greyer black head and a narrower breast-band in the female. This difference is considered to be small and not attaining species level.

#### *Batis perkeo*

No variation described.

#### Conclusion

Distribution of the batisses (and of birds in general) in north-central Africa, size and vocalisations suggest that *B. minor sensu lato* merits division into two species. Specimen mensural data moreover provide sufficient evidence to consider *B. erlangeri* (which is larger than *B. minor sensu stricto*) as comprising two subspecies. Especially the bill is, in series, smaller in the population south of the equatorial forest in south-west DR Congo and adjoining areas (subspecies *congoensis*) than in the nominate northern *B. e. erlangeri* population.

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