

## Wood-hoopoes: are *Phoeniculus purpureus niloticus* (Neumann 1903) and *Phoeniculus damararensis granti* (Neumann 1903) conspecific?

The Green Wood-hoopoe *Phoeniculus purpureus* (Miller 1784) is represented in all savanna regions of Africa, and has long been the subject of debate (Turner 2014). In addition, birds referred to as the Violet Wood-hoopoe (*damarensis* and *granti*) and Black-billed Wood-hoopoe (*somaliensis*) appear very closely related to *purpureus*, and have been variably treated as either separate species or subspecies, while much needed DNA data remains scant. In East and northeastern Africa several forms are currently recognized: *Phoeniculus purpureus marwitzi* Reichenow 1906, *Phoeniculus purpureus niloticus* Neumann 1903, *Phoeniculus damarensis granti* Neumann 1903, *Phoeniculus somaliensis somaliensis* Ogilvie-Grant 1901, *Phoeniculus somaliensis abyssinicus* Neumann 1903 and *Phoeniculus somaliensis neglectus* Neumann 1905 (Ligon 2001, Dickinson & Remsen 2013, del Hoyo & Collar 2014).

All are slim, small-bodied birds with long, slender, graduated tails, broad rounded wings, narrow decurved bills and short tarsi. The plumage is largely iridescent black with green, violet or blue sheens, and individual forms differ only in the degree and colour of gloss. Bill colour is normally red or black, often varying with age. Sexes are alike in all forms.

In all wood-hoopoes the degree of phenotypic divergence among currently recognized taxa is poorly characterized, while mantle plumage varies among individual wood-hoopoes and between age classes (Cooper *et al.* 2001). At the same time there appear to be only minor discernible vocal differences between any of the above named forms. In southern Africa, some authors treat the Violet Wood-hoopoe *P. damarensis* as an endemic, but others believe that it might simply be a plumage variant and junior synonym of *P. purpureus* (Cooper *et al.*, *op. cit.*).

In Kenya, *P. purpureus marwitzi* is largely blackish, glossed with green on the head, upperparts and breast, while *P. p. niloticus* has the head, mantle, breast and tail appearing more steel-blue than green, thus appearing very similar to the Violet Wood-hoopoe (*P. damarensis granti*) of eastern Kenya. The continuum between green and purple is well known to all who study iridescent plumage, with colours shifting from one to the other as the light source and angle vary. Thus, plumage colours in *purpureus* may appear to change from greenish to blue or violet to almost blue-black depending on whether the bird is seen in bright sunlight, deep shade or dappled light, often leading to identification difficulties. Perceived colour may also differ between early morning and late afternoon viewing conditions. The Black-billed Wood-hoopoe *Phoeniculus somaliensis*, long considered a race of the Green Wood-hoopoe, was deemed worthy of separate species status by Davidson (1976) on the grounds that the largely all-black bill is typically more slender and decurved than in either *purpureus* or *damarensis*, and indeed that longer bill does serve to distinguish it from the other two (Turner 2014). Meanwhile, its status in northern Kenya border areas vis-à-vis any sympatry with either *niloticus* or *granti* remains unclear.

Dowsett & Dowsett-Lemaire (2015) recently discussed in some detail birds they observed in the Omo Valley of southwestern Ethiopia, believed to be the Violet Wood-hoopoe *Phoeniculus damaraensis*. They commented on birds collected by Zaphiro from the Zoula River, Uba, in July 1905, which were also considered to have been

*Phoeniculus damarensis granti*. No mention was made, however, of the possibility that the Omo Valley birds may have represented what in northwestern Kenya border areas are referred to as *P. purpureus niloticus*, also known from the Gambela region of southwestern Ethiopia, South Sudan, and from Lake Stephanie (to the east of the Omo Delta). Neumann visited southern and southwestern Ethiopia in 1901–1902, later describing in *Ornithologische Monatsberichte* (1903) the forms *niloticus*, *abyssinicus* and *damararensis granti*, with only very minor plumage differences separating them.

*P. damarensis granti* is endemic to the palm-fringed river systems of eastern Kenya, with as yet no proven cases of intergrades with *purpureus*. Elsewhere in southern Kenya, birds reported as *granti* may be nothing more than individual *purpureus* with distinctive violet tail and mantle feathering appearing more prominent due to light conditions at the time. Records in arid country from Kapedo northwards probably refer to *P. p. niloticus*, a form largely impossible to separate from *granti*. Adult *granti* possess varying densities of green-, blue- or violet-glossed feathers, and in the field juveniles cannot safely be distinguished from juvenile *purpureus*. In addition, any observed differences in plumage colour between Green and Violet Wood-hoopoes may well be clinal or habitat-related, with perhaps a more pronounced violet colouration in birds in arid areas. Dowsett & Dowsett-Lemaire (2015) commented that the voice of their Omo Valley birds sounded drier than that of *P. purpureus*. Do *niloticus*-type birds in northwest Kenya sound similar, as they are often referred to as Violet Wood-hoopoes?

There is no disputing that *niloticus* and *granti* both tend to show more blue and violet on the mantle, breast and head than *P. purpureus marwitzi*, but one cannot rule out the possibility that all three may, in fact, be conspecific, with *niloticus/granti* representing a dry country form of *P. purpureus* which extends from the palm-fringed river systems of eastern Kenya north through Samburu and Baringo districts to southern and southwestern Ethiopia. Both *marwitzi* and *granti* are reported to have been collected at Archer's Post (Samburu District) on the same day (Oberholser 1945), which may underline the difficulty in distinguishing between these two. Comprehensive molecular analysis of all forms would now appear warranted, and the nomenclature of birds known as the Violet Wood-hoopoe may also require attention since both *niloticus* and *granti* were named and described in the same publication (Neumann 1903).

Current known localities for *niloticus* and *granti* are:

*P. p. niloticus*: Uganda: Moroto, Kitgum.

Kenya: Kapedo, Upper Turkwell, Ndotos, Mathews Range, Lodwar, Lokichoggio.

Ethiopia: Lake Stephanie, Gambela.

*P. (d.) granti*: Kenya: Kibwezi, the Tsavo, Galana, Northern Uaso Nyiro, Upper Tana and other river systems in the Tsavo NPs, Meru NP, Shaba and Samburu GRs.

Ethiopia: Omo Valley, Zoula River.

From the above it is clear that there is an almost contiguous range of *granti* and *niloticus* stretching from the eastern Kenya riverine areas northwest through the Northern Uaso Nyiro to the Mathews Range, the Ndotos, the Upper Turkwell, Lodwar and Lokichoggio. Both forms then re-appear in Ethiopia, with *niloticus* in western border areas and the Gambela region, and with *granti* in the Omo Valley and along the Zoula River. In reality there may not even be a break in distribution from the Tsavo River

all the way to the Omo Valley and Gambela on the Ethiopia–South Sudan border. The type locality of *niloticus* was on the Nile in southern Sudan, while that of *granti* was in the Tsavo region of southeast Kenya. As these two forms cannot be irrefutably separated, which name would take priority? Regarding possible intergradation, some has been suggested between *niloticus* and *marwitzi* (Friedmann 1936, Oberholser 1945), and the report of *marwitzi* and *granti* being collected on the same day at Archer's Post, Samburu District, may also reflect the same. This would add to the case for suggesting that all are members of one species *P. purpureus*. Also, since *granti* has often been allied with southern African *damarensis*, this would question again the status of the latter with regard to *P. purpureus*.

### Acknowledgements

I wish to thank David Pearson for his comments and encouragement during the preparation of this note.

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*Scopus* 37(1): 31–33, January 2017

Received 18 July 2016