

and far down flanks. Underparts silvery grey, much darkened by the slaty bases of the hairs. Ears dusky. Tail dusky above; its lower surface, together with the hands and feet, dirty white.

Skull very similar to that of *E. g. suecicus* in size and general appearance; zygomatic arches slightly less expanded; bullæ slightly smaller and less inflated. Teeth normal; m^3 without a third re-entrant fold on inner side in any of the three specimens examined; in *E. g. suecicus*, Miller ('Catalogue,' p. 31) found this fold to be present in about one-third of the individuals.

Type. Adult female. B.M. No. 20. 11. 6. 4. Original No. 306. Collected by Mr. E. Reinwaldt, 11th August, 1920, at Hapsal, Esthonia. "In Obst- und Gemüsegarten."

Hab. Esthonia.

Measurements of the type, taken in the flesh by the collector (and of two other specimens ♂ and ♀ in parentheses):—Head and body 98 (91, 100) mm.; tail (without hairs), 49 (44.5, 46); hind foot (without claws), 17 (18, 17.5); ear 14 (13, 14).

Skull-measurements of type (and of ♂ and ♀ in parentheses):—Condyllo-basal length 23 (23.2, 23.2) mm.; zygomatic breadth 12.6 (12.5, 12.6); interorbital constriction 3.7 (3.9, 3.7); occiput, breadth \times depth 10.6×5.9 (10.6×6 , 10.6×6.1); nasals 6.3×2.6 (6.2×2.6 , 6.6×2.7); dental length 12.9 (13, 13.2); cheek-teeth (alveolar length) 5.1 (5.3, 5.2).

IX.—*The Klipspringers of Rhodesia, Angola, and Northern Nigeria.* By MARTIN A. C. HINTON.

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OWING largely to its peculiar station and habits, the Klipspringer, among African antelopes, shows quite a special tendency to develop geographical and, in part, perhaps, merely colonial races. The range of *Oreotragus* extends over the whole of Africa south of the Sahara, from Northern Nigeria and Somaliland to the Cape. Within this wide area, however, its distribution is markedly discontinuous, the animal being restricted to the mountainous districts. Thus it is absent from the great Congo forest region; while, in the more open country of East Africa, the lowlands intervening between one "Inselberg" and another form, in all cases where their breadth exceeds a few miles, decided barriers to inter-colonial communication.

Eight distinct forms have been recognized hitherto; and to these I have now to add three, described below. As regards the status of these forms, several of them have been accorded full specific rank by their describers. In the 'Catalogue of Ungulates' (vol. ii. p. 125) Lydekker and Blaine treat them all as subspecies of *O. oreotragus*, originally described from Cape Colony. Since these forms are strictly vicarious, and since the material available is far from being sufficient to enable one to form a sound judgment upon the question of their inter-relationships, this seems to be the proper course.

One of the most interesting subspecies is *O. o. aceratos*, described (as a species) from the Lindi Hinterland, in the southern part of "German East Africa" (now Tanganyika Territory), by Noack* and later by Neumann†. While in all other subspecies hitherto described (with the exception of *O. o. aureus*, Heller) the general colour of the dorsal surface is dull and uniform, in *aceratos* it is bright, and there is, according to the published descriptions, a marked contrast between the fore and hind parts. The fore-parts are unusually brightly coloured, reddish or ochraceous; the hind-parts grey or "roe-coloured." The material now before me, appertaining to *aceratos* and to the allied forms described below from Rhodesia and Angola, bears out the original descriptions, in so far as the brilliant coloration of the fore-parts is concerned. But, as regards the loins and rump, while some of the specimens have these regions grey and contrasted, in others the bright tints, in a diminishing degree of intensity, may be traced backwards almost or quite to the rump. The material (in part undated) does not allow one to decide whether this variation is seasonal, sexual, or merely individual; but I am inclined to think that when the coat is first assumed in *aceratos* and similar subspecies, it is bright-coloured throughout, and that later on the particoloured appearance of the back is produced by bleaching of the ochraceous rings of the hairs clothing the rump and loins.

Until recently the only specimens representing *aceratos* in the Museum were some from the neighbourhood of Zomba, Nyasaland, and from Southern Angoniland, which had been identified with Noack's animal by Neumann. Some specimens from the Chinsali District of North-eastern Rhodesia have also been referred by Lydekker and Blaine to *aceratos*.

* Zool. Anz. xxii. p. 11 (1899).

† S.-B. Ges. natf. Fr. Berlin, 1902, p. 169.

Major C. H. B. Grant has now kindly presented three topotypical examples, two males and a female, collected by him in the Lindi District in July 1919. On comparing these with the specimens from the Chinsali District, the latter are immediately seen to differ by their richer and deeper coloration. The Rhodesian animal may therefore be described as

Oreotragus oreotragus centralis, subsp. n.

Like *O. o. aceratos*, but general colour of upper parts deeper and richer.

Upper surface of head, neck, and back bright, deep ochraceous in general colour, the tint differing from that seen in the corresponding parts of *aceratos* to the extent of the difference between the "ochraceous buff" and the "raw sienna" of Ridgway; the colour is most intense upon the nape and over the shoulders. Rump, in some specimens, grey, like the outer parts of the thighs, in others more or less invaded by the ochraceous tint of the fore parts. No white preorbital patches upon the face (these being conspicuous in *aceratos*). Upper surface of muzzle dusky; top of head between and in front of ears irregularly blackened. Ears as in *aceratos*, but the white patch on each proectote smaller. Under surface white, save for the broad ochraceous collar. Dorsal surfaces of limbs grey, somewhat darker than in *aceratos*; the dusky hoof-patches slightly more extensive.

Skull not peculiar; females hornless.

Type. An adult male. B.M. no. 7.11.15.6. Collected in the South Chinsali District and presented to the British Museum by Mr. R. L. Harger.

Hab. North-east Rhodesia.

Unfortunately none of the four specimens from the type-locality is dated. The examples in the collection from Zomba and the Mlanje Mountains are intermediate between *aceratos* and *centralis*; in general colour they approach the former, but in the characters of the face and ears they more nearly resemble *centralis*. Possibly these two subspecies intergrade in the country to the south of Lake Nyasa.

On the west coast, in Angola, another subspecies, apparently allied to *aceratos*, has been discovered. This may be described as

Oreotragus oreotragus tyleri, subsp. n.

A light-coloured representative of *O. o. aceratos*; without dark hoof-patches.

General colour of upper parts as in *aceratos*, but noticeably lighter. No white patches on face, the preorbital region and top of the muzzle being light buff. No black evident upon the forehead. Ears much lighter, pale ochraceous at the base; outer half of the proectote white; dark ground of the remainder of the ectote almost hidden by the buff "lining" hairs, only its margin appearing dusky; entote cream. Dorsal surfaces of fore limbs pale buff, becoming greyish over the cannon-bone; of hind limbs light grey. No dark patches above the hoofs, the regions normally occupied by these patches lighter and clearer than elsewhere.

Skull normal; female without horns.

Type. An adult male. B.M. no. 20. 12. 8. 2. Collected at Esquimina, south of Benguela, on the coast of Angola, and presented to the Museum by Mr. F. Tyler Thompson.

Hab. Coastal district of Angola.

The subspecies is very clearly distinguished from the related forms by its pale colour, the characters of the face and ears, and by the absence of dark patches above the hoofs. I have much pleasure in naming it after Mr. F. Tyler Thompson, who is well known to all sportsmen and others familiar with Angola.

In 1911, Lydekker called attention to the presence of Klipspringers in Northern Nigeria; and on the basis of a skull received from Dr. Porteous and stated to have come from the Duchi 'n-Wai Range, in the province of Zaria, he described a new subspecies, "*O. saltator porteousi*" (P. Z. S. 1911, 2, p. 960). In the 'Catalogue of Ungulates' the name is corrected, and appears as *O. oreotragus porteousi*. The external characters of this form are unknown.

In 1913, Mr. Hyatt presented the skin and skull of a male collected by him at Leri 'n-Duchi, N.E. Zaria Province; and in the following year the Museum received from the same donor the skin of a female collected at a point 50 miles E. of Zaria. The male is in somewhat faded pelage, but making due allowance for this, there is such close agreement between the two skins that there can be no doubt that both belong to one and the same subspecies. On comparing the skull of the male with the type and only specimen of *porteousi*, such marked differences are seen that I do not think it possible to identify Mr. Hyatt's specimens with the form described by Lydekker. The latter must, in my opinion, have come either from some other part of the Duchi 'n-Wai Range, or, what is more probable (having regard to the fact that "Yola," instead of "Zaria," was named in the original description),

from one of the hills of the Bautchi Highlands further to the east. I therefore venture to describe Mr. Hyatt's Klipspringer as a distinct subspecies :—

Oreotragus oreotragus hyatti, subsp. n.

Resembling *O. o. centralis* in general outward appearance; skull normal.

General colour of upper parts deep ochraceous, about as in *O. o. centralis*. Eye-rings and preorbital portion of face (with the exception of a narrow, median, darker area on top of muzzle) pale, yellowish-white or grey. Ears without white spot on proectote; the dusky ground of the ectote concealed in great measure by ochraceous "lining" hairs. Top of head not blackened. Limbs grey dorsally; no dark patches above hoofs of fore limbs; inconspicuous dark hoof-patches on hind limbs.

Skull and horns quite normal; differing from that of *O. o. porteousi* conspicuously in the much shorter and broader nasals, larger teeth, and narrower (normal) frontals.

Measurements of type-skull, with those of the type of *porteousi* in parentheses :—Extreme length 140 (139); cranial breadth 51 (51); width across orbits 74 (81.5); nasals, length \times least width 33.5×15 (46×13.5); p^2-m^3 53 (47.5) mm.

Type. An adult male. B.M. no. 13. 3. 8. 2. Collected at Leri 'n-Duchi, N.E. Zaria Province, N. Nigeria, and presented to the British Museum by Mr. M. P. Hyatt.

Hab. Zaria Province, North Nigeria.

While presenting a close general resemblance to *centralis*, *O. o. hyatti* is sufficiently and clearly distinguished from the Rhodesian subspecies by the characters of the face and ears. It is much to be hoped that further, properly dated, material will be procured from Nigeria, for it seems not improbable that *porteousi* and *hyatti* represent two perfectly distinct species. In preparing this paper, I have worked through all the skulls of *Oreotragus* in the collection; but, apart from the presence of horns in the females of the East African *O. o. schillingsi*, I have found no cranial characters by which the various subspecies can be distinguished, except in these two Nigerian forms. Of them, *hyatti* agrees perfectly in skull-form with the normal subspecies of *O. oreotragus*, while *porteousi* differs from all.



Hinton, Martin A. C. 1921. "IX.—The Klipspringers of Rhodesia, Angola, and Northern Nigeria." *The Annals and magazine of natural history; zoology, botany, and geology* 8, 129–133. <https://doi.org/10.1080/00222932108632565>.

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DOI: <https://doi.org/10.1080/00222932108632565>

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