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On some enigmatic Pipits associated with *Anthus novaeseelandiae* (Gmelin) from Central and Southern Africa (Aves, Motacillidae).

by

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The status and relationships of four pipit taxa described from central and southern Africa between 1899 and 1951, and currently associated with *Anthus novaeseelandiae* (Gmelin), still remain to be finally resolved, the forms being: *Anthus latistriatus* Jackson, 1899: Kavirondo, south-western Kenya, *Anthus hoeschi* Stresemann, 1938: Erongo Mts, South West Africa, *Anthus richardi lwenarum* White, 1946: Balovale, north-western Zambia,, and *Anthus richardi editus* Vincent, 1951: Sanqubetu R. valley, Lesotho. White, in the continuation of Peters' Check-List (1960), dismissed *A. latistriatus* as a melanistic aberration, placing it in the synonymy of *A. n. cinnamomeus* Rüppell, 1840: Simen, Ethiopia. In the same work, *A. hoeschi* was treated as a synonym of the xeric *A. n. bocagei* Nicholson, 1884: Humbe, Huila, Angola. In the cases of *A. r. lwenarum* and *A. r. editus,* both were admitted as valid races of *A. novaeseelandiae.*

A re-assessment of the taxa *hoeschi, lwenarum* and *editus* recently carried out at the Durban Museum indicates that the treatment accorded them in the continuation of Peters' Check-List is incorrect in all instances. I did not pursue the question of the status of *A. latistriatus,* as this entity has already been dealt with to an extent by Prigogine (1960; 1971), this author intimating *in litt.* that it is his intention to go still further into the background of the form in the near future. The form ist, however, commented on succinctly below.

Hall (1961), in her study of the species of the genus *Anthus* Bechstein, did not support White's sinking of *A. hoeschi* into the synonymy of *A. n. bocagei,* treating it as a recognisable form of Richard's Pipit with a putative breeding range on the plateau of South West Africa. On the other hand, in the same work she follows White in admitting *lwenarum* and *editus* as recognisable races of *A. novaeseelandiae,* but makes no mention of *A. latistriatus.* Hall recognised that somehow the taxa *hoeschi, lwenarum* and *editus* were closely allied, sharing certain key morphological characters, such as dark dorsal colouration, distinctive colouring of the outer and penultimate rectrices and large size, but took the comparison no further.

Variation in African *Anthus novaeseelandiae*

In Africa, Richard's Pipit enjoys an extensive range in the south and east of the continent, north in the east to Ethiopia and Somalia, where it inhabits steppe, open grassland and cultivation, from sea level to high altitudes in the interior. In mountains it is often localized on the plateaux of the massifs, the more rugged versants being inhabited by forms of the allied Longbilled Pipit *Anthus similis* Jerdon. Geographical variation is extensive but of simple type and pattern, pale and often greyish dorsalled populations inhabiting the xeric North Eastern and South Western Arid Districts, with a corresponding reduction in the degree of pectoral spotting over a whitish venter, and with the wings in ♂ 95 mm and below. Mesic populations breeding at comparable altitudes are often more olivaceous or ochraceous tinged above, with rather darker feather centres, the venter buffier over the breast, and the pectoral spotting usually blacker and denser, but there is no worthwhile size difference. High daytime temperatures and relative humidity along the eastern African coastlands are reflected in an increase in the melanin over the upper-parts in the littoral populations (but not in a reddening of the feather fringes), and still blacker breast spotting, as well as in a marked diminution in size, the wings in ♂ 91 mm and below.

In contrast to the eastern littoral and the norm of the interior plateau populations, those breeding locally at high elevations in the mountains of Ethiopia, south in the mountains flanking the Rift to Malawi and eastern Rhodesia evince local but not consistent development of much greater size, a darkening of the upper-parts, with heavier streaking, and the assumption of a wholly redder or more ochraceous dorsal facies. Among such eastern montane representatives, those from the Uganda/Zaïre border south exhibit, in addition, a marked trend to lose the white over the penultimate rectrix.

Such groupings of populations: (a) eastern humid littoral, (b) interior plateau, and (c) montane, share one character in common, namely, a pure white wedge on the outer tail-feather, and the presence of a smaller white wedge on the penultimate rectrix in the majority of examples.

Lying to the west and south of the montane breeding populations just alluded to and in which the outermost tail-feather has a white wedge are three or so isolates separable in having the pale wedge on the outermost rectrix smoky vinaceous rather than white, the penultimate tail-feather usually plain blackish, and the tail-length over 70 mm in adult ♂ (in this latter feature only equalled by *A. n. cinnamomeus* of the Ethiopian highlands). These isolates are the populations referred to by Hall as "atypical birds (which) represent an older population," of a "double invasion of the territory." Presumably by this in meant that they appear to be well-differ-

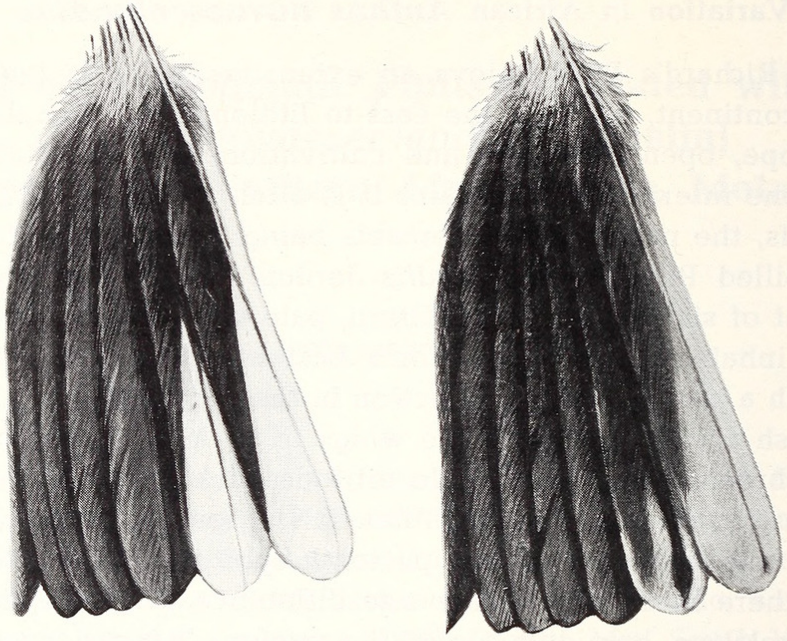


Fig. 1. Tails (right half) of typical examples of white and dusky tailed races of African *Anthus novaeseelandiae* (Gmelin).
Left: *Anthus novaeseelandiae refuloides* Roberts
Right: *Anthus novaeseelandiae lwenarum* White.

entiated relict elements of an early invasion of Ethiopian Africa by Asian immigrants, the white tailed birds being descendents of later invasions.

The three taxa which will be discussed below — *A. hoeschi, A. r. lwenarum* and *A. r. editus* — comprise this "older population" complex of the African representatives of *Anthus novaeseelandiae,* as defined by Hall. With this coterie may be associated the two montane isolates present in West Africa: *A. n. camaroonensis* Shelley, 1900: Cameroun Mtn, Cameroun and *A. n. lynesi* Bannerman and Bates, 1926: east of Bamenda, Cameroun Occidental, Cameroun, the latter being stated to execute a major post-breeding shift from the Bamenda Highlands, north-east to Darfur in the western Sudan. A comparable post-breeding movement in respect of *camaroonensis* has not been postulated, but assuredly occurs, as, as will be shown below, the two southern isolates of this group also perform post-breeding migratory movements to a greater or lesser extent. *A priori* a pronounced migratory pattern may be a characteristic of the montane southern and western "older population" isolates with the outermost tail-feather wedged with smoky vinaceous and the penultimate rectrix plain or largely so.

While the populations of montane breeders with dusky as opposed to white marked outer tail-feathers are presently associated with *A. novaeseelandiae,* their size and tail characters, pronounced migratory post-breed-

ing dispersal, solitary disposition on the wintering grounds, and lack of any evidence of intergradation with immediately vicinal populations of white-tailed birds, may, in fact, warrant their treatment as a separate species, the earliest name for which would be *A. camaroonensis* Shelley, 1900. In the event of the erection of such an additional pipit — a vernacular name would be required, in which case the new species could be known as the Mountain Pipit.

On *Anthus latistriatus* Jackson, 1899

Jackson (1899) compared his new species *latistriatus* with *Anthus pyrrhonotus* (Vieillot) = *Anthus leucophrys* Vieillot subspp., and *Anthus sordidus* Rüppell = *Anthus similis* Jerdon subspp., but not with *A. novaeseelandiae,* which latter is dealt with in the same contribution under the name *Anthus rufulus* Vieillot. The description, which is based on a single ♀ from Kavirondo, in south-western Kenya, is said to differ by reason of the black mottled dorsum, and the very distinct broad black shaft-streaks to the flank feathers, and by the outer tail-feather being smoky brown with a whity-brown shaft and oblique blackish mark on the inner web. On the penultimate rectrix there is a light smoky brown wedgeshaped mark with a whitish apical spot. Without the Type of *latistriatus* before me I am unable to place this name with any certainty. The reference to broad black shaft-streaking to the flanks tends to set it apart from both white and dusky tailed population groups of *A. novaeseelandiae,* and the name may well not be applicable to any part of the African *A. novaeseelandiae* assemblage.

Hall (1961) makes no mention of *latistriatus* in her treatment of the African forms of Richard's Pipit, while White, in Peters' (1960), treats it as a synonym of *A. n. cinnamomeus,* commenting that the Type is a melanistic aberration. From the description there is no evidence that the original specimen is in any way aberrant, while Sclater (1930) shows that *latistriatus* is in fact based on a young bird and appears to be nearest the Longbilled Pipit *Anthus similis.* As west Kenyan *A. n. lacuum* Meinertzhagen are white-tailed, the Kavirondo Type of *latistriatus* may very well be a young *A. similis,* in which species the tail-pattern is very similar to the southern and western montane isolates of African *A. novaeseelandiae* discussed in the previous chapter.

Prigogine (1960; 1971) and some other workers have in recent years employed *latistriatus* for distinctive dark birds breeding at high elevations in the eastern highlands of Zaïre (Itombwe Highlands in Kivu and Mt Kabobo in northern Shaba), these being usually treated as specifically discrete from *A. novaeseelandiae.* Prigogine *in litt.,* in comparing *latistriatus* as understood by him with *A. n. lacuum,* describes *latistriatus* as having almost black feather centres to the dorsum, the lighter fringes brown, and the breast heavily spotted with black. Currently, he is unable to confirm that *latistriatus* actually warrants treatment as a species separate from *A. novaeseelandiae,* nor even if the name *latistriatus* is unequivocally applicable to the dark high elevation breeders of the eastern parts of Zaïre.

While the existence of well-characterized dark montane populations of Richard's Pipit in the Itombwe Highlands and on Mt Kabobo, eastern Zaïre, is not in doubt, the correctness of the use of Jackson's name *latistriatus,* proposed on a singleton from Kenya, for them certainly seems questionable. This doubt stems from the fact that the referred populations of Zaïre have a tail-pattern of normal *novaeseelandiae* type, whereas the specimen upon which the name *latistriatus* is founded

has a pattern comparable to that of the atypical isolates alluded to above, or of *A. similis* subspp. Then there is the conclusion of Sclater, *loc. cit.*, who believed the Type of *latistriatus* to be a juvenile Longbilled and not a Richard's Pipit. It should be noted that in juveniles of *A. novaeseelandiae* and *A. similis* the diagnostic wing-formula difference need not necessarily hold, especially in the central African woodland populations of the latter, and the Type of *latistriatus* should be critically re-examined by a worker well-versed in pipit systematics in order to resolve the doubt overtly surrounding its determination as to species and the soundness of the application of the name to one of the established subspecies of Richard's Pipit from far to the west of the type-locality.

In situations of this nature it is prudent to defer usage of an equivocal name in subspecific arrangements of populations until such time as its true status has been verified beyond doubt. Equivocal names should not be applied to subspecies simply to satisfy the Law of Priority or in order to save them from often well deserved oblivion.

Anthus hoeschi Stresemann, 1938

Anthus hoeschi Stresemann was described from the Erongo Mts of South West Africa in the year before the outbreak of the Second World War on the basis of a single skin collected by the late Walter Hoesch of Okahandja (Stresemann, 1938). The Type (from Erongo) and a second referred specimen taken at Friedrichsfelde (21° 59' S., 15° 19' E.) in South West Africa are in the collection of the Zoologisches Museum, Berlin, and are not readily accessible to workers outside Europe. Since its formal description much doubt has surrounded *Anthus hoeschi,* which is currently considered either a synonym of *Anthus novaeseelandiae bocagei* Nicholson, described from southern Angola *(vide* White [1957], White, in Peters [1960], and Mackworth-Praed and Grant [1963]), or a relict isolated race of *Anthus novaeseelandiae (cf.* Hall [1961] and Hall and Moreau [1970]). In 1940, Hoesch and Niethammer followed Stresemann in treating the form as a full species, while in his recent checklist of South West African birds, Winterbottom (1971) again followed White in placing *hoeschi* as a synonym (of *A. n. rufuloides),* while McLachlan and Liversidge (1969) make no mention of the form.

Stresemann compared *hoeschi* with *Anthus similis leucocraspedon* Reichenow, 1915: Windhoek, South West Africa, distinguishing it on the basis of the 5th remex lacking emargination, a shorter bill, longer claws on all toes, light areas of outermost rectrices reaching to the bases of the feathers, and a variety of minor colour differences: more isabelline throat, isabelline as against hair brown ear-coverts, and the presence of narrower and whiter fringes to the lesser and median wing-coverts. Compared with *A. n. bocagei,* he differentiated the form on much greater size (which as in *A. similis* subspp.), light areas to outermost rectrices isabelline as opposed to white, and without light areas on the penultimate rectrices, dorsal

feathering more reddish, less greyish brown, narrower and whiter fringes to wing-coverts, and strong yellowish or clay-coloured ground to underside, particularly the breast and belly. In defining *hoeschi* in 1940, Hoesch and Niethammer add that the rictal bristless are stronger and longer. The species was described by Stresemann on the Type alone, but was discussed again on both the Type and the second known specimen taken late in 1938 at Friedrichsfelde by Hoesch and Niethammer, who add that "this rare pipit inhabits, together with *A. s. leucocraspedon,* the low rainfall regions between the true Namib in the west and the Damara Highlands in the east. Both collected specimens were found at different localities in treeless grassland with low scattered bushes. No further individuals were observed." Since the second specimen was taken in October, 1938, no further examples of *hoeschi* have been obtained in South West Africa, nor has anyone succeeded in locating a viable population of such a pipit species. As much collecting has been carried out since the early 1950's in South West Africa, Botswana and adjacent arid and semi-arid areas of southern Africa, I recently endeavoured to determine if any pipits taken in these regions and now in collections corresponded to *A. hoeschi,* but none was found.

As stated in the introduction, Hall (1961) after having studied the Type, recognised *A. hoeschi* as a valid race of *A. novaeseelandiae* confined to the plateau of South West Africa and allied in its major diagnostic characters to *A. n. lwenarum* and *A. n. editus.* White (1957) commented differently on the taxon after also having examined the Type sent over to London by Stresemann. He noted that it was as large as his own *A. n. lwenarum,* described from north-western Zambia, and had a comparable tail-pattern. Yet, he synonymized *hoeschi* with the much smaller *A. n. bocagei* on the degree of pectoral spotting, stating, incorrectly, that "individually all its *(hoeschi)* characters can be found in other (? indigenous) examples from South West Africa." This is certainly not so in the large South West African series I have examined in close detail in recent times. The comparison carried out by White must have been perfunctory in the extreme, because the wing of the ♀ Type of *hoeschi* (almost certainly incorrectly sexed and in fact a ♂) is according to Stresemann 96, and the tail 75 mm., which dimensions alone dissociate it completely from *A. n. bocagei,* the wing-length in ♀ of which does not exceed 86,5 and the tail-length 63,5 — a difference of 12,5 mm. in the tail-length alone. By White's own telling, the Type of *hoeschi* agrees almost completely in size and colour with his own *lwenarum* and not with *A. n. bocagei,* differing only in slightly lighter pectoral spotting (see Fig. 2). In connection with the degree of breast spotting as a character of *A. n. bocagei* in comparison with the redder, more mesic, eastern subspecies, reference to my second revision of ten years ago (Clancey [1968]) will show that the breast spotting in *bocagei*

is often, but not necessarily always, finer and sparser than in the vicinal races, but not when compared with *lacuum.* In dealing with the characters of *bocagei,* it is important not to overlook *A. n. grotei* Niethammer, 1957: Onguma, Etosha Pan, northern South West Africa, with which very cinereous subspecies of the saline pans of South West Africa and Botswana *bocagei* is frequently confused. The *"bocagei"* of most authors is an amalgam of true *bocagei* and *grotei.*

As it was not possible to have the Type of *A. hoeschi* posted out to South Africa for examination, Dr G. Mauersberger of the Zoologisches Museum, Berlin, kindly sent both it and the second example from Friedrichsfelde to the Museum Alexander Koenig, Bonn, where they were compared with examples attributed to both *A. n. lwenarum* and *A. n. editus* sent from the Durban Museum for the purpose. Dr H. E. Wolters, who most kindly carried out the comparisons for me, reports under date 25 November, 1977, that the two South West African examples of *hoeschi* differ from the *lwenarum* and

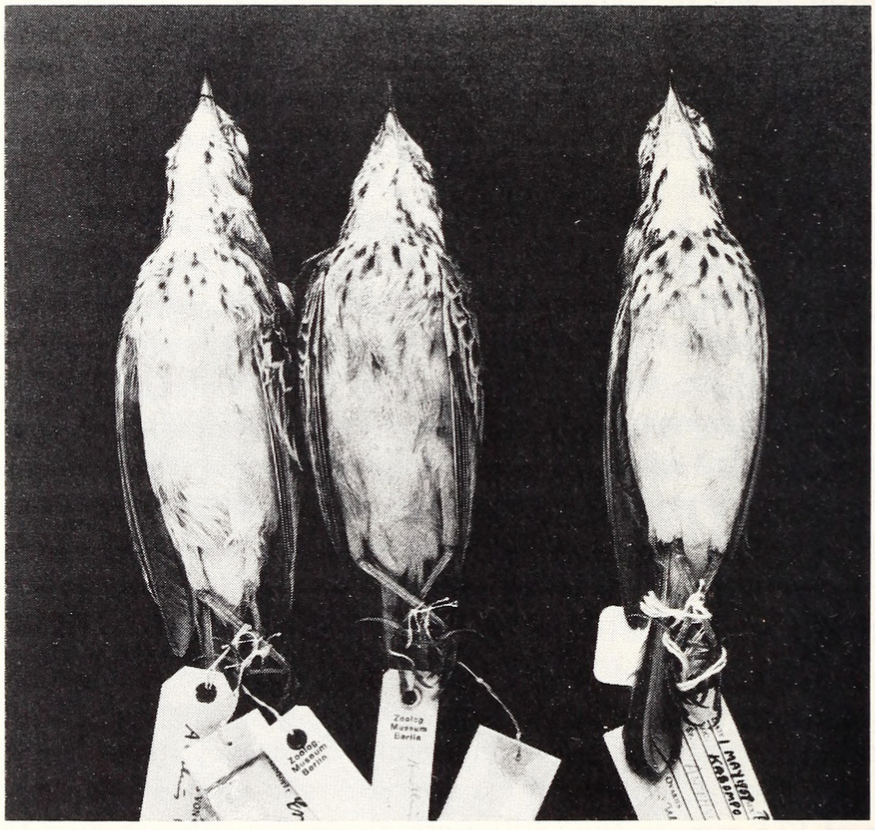


Fig. 2. Ventral views of specimens of the two southern dusky tailed races of African *Anthus novaeseelandiae* (Gmelin)
Left pair: *Anthus novaeseelandiae hoeschi* Stresemann
Right singleton: *Anthus novaeseelandiae lwenarum* White.
Note lighter breast spotting in *A. n. hoeschi.*
(Photo: H. Unte, Mus. A. Koenig)

editus skins sent in having the breast spotting sparser and lighter, the individual spots smaller, and on account of the much whiter, less sandy, fringes to the wing-coverts and tertials, but that they revealed affinity with these forms in dorsal colour, tail-pattern and large size. He confirms that on the basis of the two known specimens, *hoeschi* is a much larger bird than *A. n. bocagei,* with a very different tail-pattern, and is incorrectly placed as a synonym of it.

While originally proposed by Stresemann as a distinct species, Hall is probably correct in treating *hoeschi* as a race of *A. novaeseelandiae* at this stage. She believed the taxon indigenous to the plateau of South West Africa, but in view of the findings made during this study on *A. n. lwenarum* and *A. n. editus,* I incline to the view that it is only a non-breeding visitor to the plateau of South West Africa, probably from the heights of the Huambo Highlands in Angola. The very large size and dusky tail-pattern are known correlates of high elevation origin, while the tendency to have a lightly spotted breast associates it with comparable trends in the reduction of pectoral spotting in the steppe populations of *A. novaeseelandiae* occurring in southern and western Angola and in the sympatric subspecies of *Anthus similis.*

Anthus richardi lwenarum White, 1946,
Anthus richardi editus Vincent, 1951

The first of the above two taxa was erected on the basis of specimens collected in north-western Zambia in the 1940's by C. M. N. White (1946), and was discussed by Hall (1961) in her pipit paper, who averred that apart from its mensural and caudal characters it was uncharacteristic of the vicinal races of *A. novaeseelandiae* in having the dark centres to the back feathers and the spots on the breast ill-defined. Earlier, White (1957) described it as "a very well marked race ranging from Mwinilunga to Balovale in Northern Rhodesia = Zambia. The dark centres of the mantle (feathers) are only dappled, not sharply defined; the second outer tail feather is dark with only a little light (colouring) at the tip, whilst the outer tail feather has the normal white area replaced by smoky buff." Traylor (1962) commented briefly on the form, recording it from northern Lunda in Angola. Benson *et al.* (1971) state that *lwenarum* is dark brown, not blackish, above, and relatively long-winged (usually over rather than under ninety, which is, however, meaningless as the sexes are disparate in size with wings in ♂ of *lwenarum* 94 mm. and above); pale area on the second outermost pair of rectrices reduced to a minute spot, and the pale area of the outer pair smoky buff, not white. Described initially from Balovale, taken on the Luakela R. in northern Mwinilunga district, and collected at Kabompo in early May, 1959, by W. F. H. Ansell. Dr. A.

Prigogine *in litt.* 12 October, 1977, informs me that Verheyen collected two female pipits at L. Kabwe and Pelenge, in the Upemba National Park, Shaba, Zaïre, in May and June, which have the tail-characters of *lwenarum* and are comparably long-tailed.

While White (1960), in the continuation of Peters', gave the known range of *A. n. lwenarum* simply as north-western Zambia at Mwinilunga and Balovale, it has since been recorded from Lunda, Angola, and Shaba, Zaïre, all the specimens falling within the period May—October, when not breeding. The generally held view is that *lwenarum* differs from the norm of the Richard's Pipits breeding in such regions of central Africa, and variably ascribed to the races *A. n. cinnamomeus, A. n. lacuum* and *A. n. katangae,* on the basis of a difference to the markings over the dorsum, much larger size, especially the longer tail, and in the colouration of the outer two pairs of rectrices.

Through the kindness of Dr. D. W. Snow I have been able to study in Durban over a period of some months four of White's paratypical series of *lwenarum.* These are two taken on 3 and 5 June, 1944, and two on the 23 October, 1943, all ♂ with the flattened wings 94—98,5 $\bar{x}$ 96,2, SD 1,94, SE 0,97, tails 69—74,5, $\bar{x}$ 70,0, SD 2,58, SE 1,30. A fifth male Zambian *lwenarum* on loan from the National Museum of Rhodesia from Kabompo (1 May, 1959) has the wing 94 and the tail 69,5 mm. Comparison of the specimens with relevant material of other central and southern African *A. novaeseelandiae* subspp. does not confirm the diagnostic characters as laid down by Hall and White. The five Zambian ♂ of *lwenarum* are somewhat variable over the dorsal surfaces and relatively saturated, but not palpably less streaked than, say, *A. n. rufuloides* Roberts of eastern South Africa, differing, however, in having the dark striae of the head-top darker and broader in series. As for the pectoral spotting, I find that the Zambian *lwenarum* are actually more heavily, not less, spotted on the breast than in the case of *A. n. bocagei, A. n. rufuloides, A. n. lichenya,* etc., though the individual spots may be dark brown rather than near sepia or blackish. As I ascertain the situation, *A. n. lwenarum* is characterised by relatively saturated upper-parts, the coronal streaking heavier than in most other races; below, with the ground to the breast and sides slightly darker buffy and with the spotting on the whole coarser. The size is large; wings in ♂ 94 and above, and tail long, 69 mm and above. The dusky tail-pattern is similar to that of *A. n. hoeschi.*

Compared directly with *A. n. hoeschi,* Wolters found the two rather similar over the dorsal surface, in size (though the tail ranges longer in *hoeschi),* and in the tail-pattern, differing in that *hoeschi* has finer and lighter spotting over the breast and much whiter fringes to the wing-coverts and tertials.

Search of collections made in southern Africa over the past twenty-five years resulted in the locating of four specimens agreeing closely with those of *A. n. lwenarum* taken to north of the limits of Sub-Region, these being as follows:

(a) ♀? adult. Okahandja, South West Africa. 26 March, 1958. Collected by W. Hoesch. In Mus. A. Koenig, Bonn.
Wing (flattened) 92, tail 67 (probably *c.* 70 mm when fresh).

(b) ♂ adult. Near Kimberley, northern Cape. 29 April, 1959.
Collected by P. A. Clancey. In Durban Museum.
Wing 95,5, tail 71,5 mm.

(c) ♀ adult. Francistown, Botswana. 20 October, 1965. Collected by B. Muche. In Mus. A. Koenig, Bonn.
Wing 91, tail 67 mm.

(d) ♂ adult. Francistown, Botswana. 22 October, 1965. Collected by B. Muche. In Mus. A. Koenig, Bonn.
Wing 96, tail 71 mm.

(In the case of the two Francistown specimens, these were examined by Mrs B. P. Hall and attributed by her to *A. n. editus.)*

Even though excessively abraded and showing only a few new feathers in quill over the dorsum and on the fore-throat, the March Okahandja specimen stands out from all available South West African *A. novaeseelandiae* on its much darker colouration, though agreeing with *hoeschi* in the tail-pattern and size. The rather later Kimberley skin is also dark but almost entirely through the post-breeding moult, agreeing perfectly in all characters with the four paratypes of *A. n. lwenarum* before me. The two Francistown skins, identified as *A. n. editus* by Mrs. Hall, where found by Dr Wolters, allowing for wear, to agree very closely with the Kimberley specimen.

We therefore have a situation where birds in worn plumage and moult showing the characters of *lwenarum* are present in the northern Cape and South West Africa in late March/April, apparently re-appearing in Botswana at least on return passage in late October, with *A. n. lwenarum* on its established range in north-western Zambia, north-eastern Angola and Shaba, Zaïre, May—October, that is neatly between the former dates. This situation suggests that the breeding grounds of *lwenarum* are in southern and not central Africa. On passage such birds appear to travel singly, the one collected at Kimberley in 1959 being noted on the original label as a "shy bird with the habits of a *Mirafra africana,* hiding in long grass. Clearly a migrant". Vincent (1951) proposed *A. n. editus* from the Sanqubetu R. valley of Lesotho on eight specimens collected personally between mid-October and 10 January. This high montane race was credited

with having markedly longer wings than the lower elevation peripheral subspecies *A. n. rufuloides* (wings 94—99, *versus* 86—91 mm. according to Vincent), and being generally darker in colouration, with the pileum more heavily streaked. In her major study of the pipits, Hall (1961) drew attention to the fact that, in addition, *editus* resembled both *hoeschi* and *lwenarum* in having the light surfaces of the outermost rectrices smoky vinaceous rather than white, with the pale areas on the penultimate tail-feathers reduced to a vestigial apical spot or absent. Vincent made no reference to such a difference in the tail-pattern, obviously overlooking this major character in his comparison of Lesotho birds with the vicinal *A. n. rufuloides*. White (1957), like Hall, noted the tail-pattern difference in *editus*, but saw no similarity between *editus* and *lwenarum*, though he compared *hoeschi* and *lwenarum* to his own satisfaction and must have considered the relationship of the latter with the similar *editus* at the same time.

Through the kind collaboration of the authorities of the British Museum (Nat. Hist.), Tring, I have been able to study five of Vincent's original series of *A. n. editus* in Durban, and have compared them with the paratypes of *A. n. lwenarum*. Of the former taxon, only the October specimen is strictly comparable with those of the latter, the December and January examples being grass abraded and colour leached. In addition to this personal examination of paratypes of the two *A. novaeseelandiae* subspecies under discussion, Mr C. W. Benson kindly compared the Types of both taxa for me at Tring.

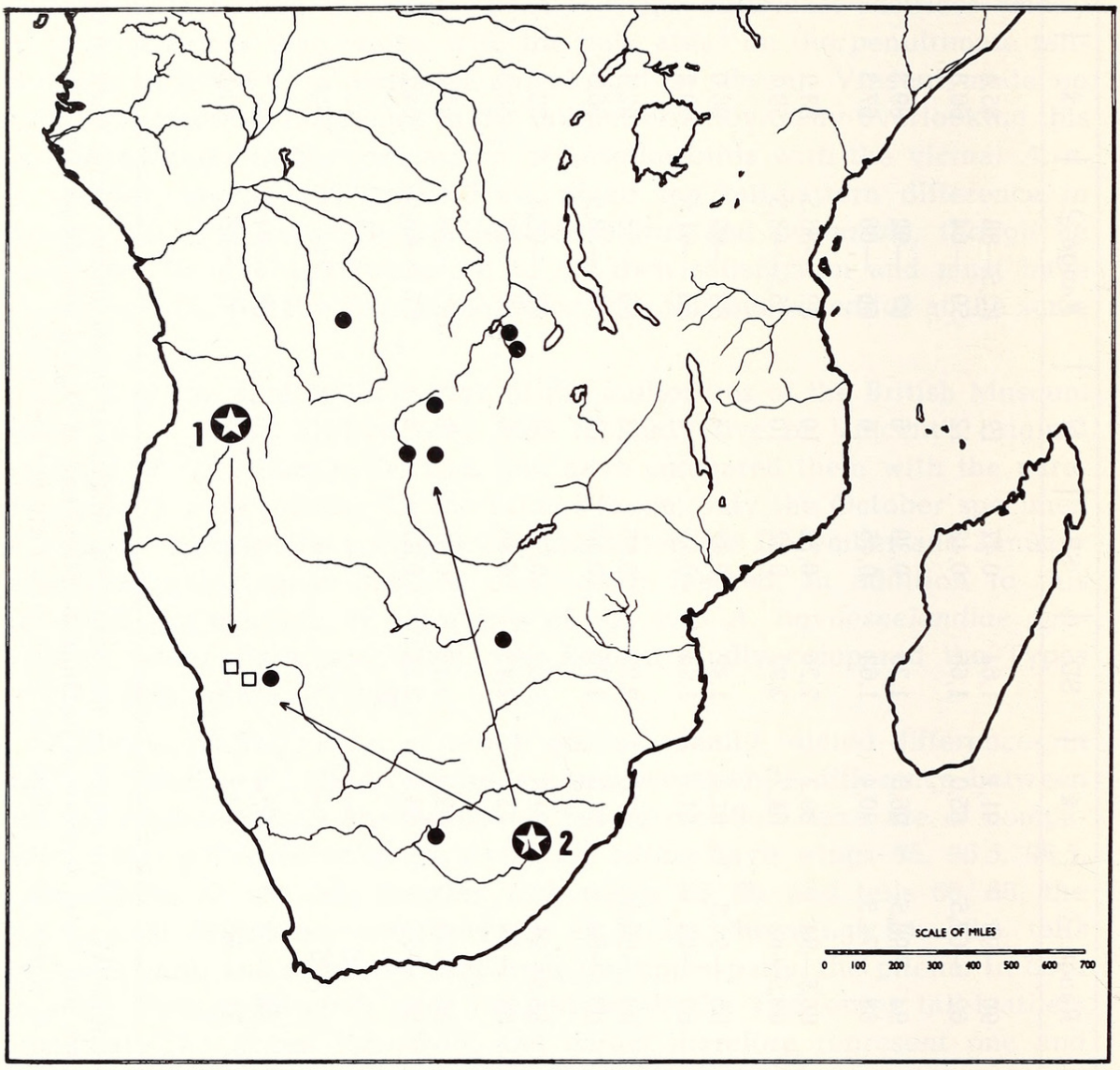
Allowing for individual variation and seasonally related differences in feather condition, I fail to appreciate any worthwhile difference between the material of *editus* and *lwenarum* before me. Both taxa are of comparable size (the three male paratypes of *editus* have wings 95, 96,5, 98,5, tails 68, 70, 72, the two females with wings 88, 90, and tails 66, 68; the paratypical *lwenarum* specimens are all males, the wings 94—98,5, tails 69—74,5 mm), and similarly dark over the upper-parts, the pileum in both equally heavily striated, and the pattern of the two outer tail-feathers identical. The names *lwenarum* and *editus* therefore represent one and the same subspecies. In connection with the long tail characteristic of both taxa, it is important to observe that the tail-length measurements given for males of both by Hall (1961, p. 276) are seriously at fault, though the discrepancy is less evident in the case of her tail-lengths of females.

A comparison carried out by Mr Benson between the Types of *A. n. editus* and *A. n. lwenarum* at Tring revealed little of taxonomic significance between the two. Benson, *in litt.* 27 January, 1978, states: "I could see no difference between the type of *lwenarum* and the type of *editus* beyond the fact that the former is somewhat dusky below, apparently merely because it had been feeding on recently burnt ground. Note the

Subspecies	N	Range ♂	$\bar{x}$	SD	SE	N	Range ♀	$\bar{x}$	SD	SE
A. n. rufuloides	W 12	90 —95	91,1	1,64	0,47	12	82,5—88	85,4	1,60	0,46
	T 12	62 —67,5	65,0	1,66	0,48	12	59 —64	60,8	1,45	0,42
A. n. lwenarum	W 13	94 —98,5	96,3	1,39	0,39	6	87 —92	89,3	1,97	0,80
	T 13	68 —74,5	70,4	1,63	0,45	6	66 —68	67,3	1,03	0,42
A. n. bocagei	W 10	86,5—94	89,2	2,26	0,72	10	82 —86,5	83,9	1,52	0,48
	T 10	60,5—68	64,2	2,92	0,92	10	55,5—63,5	59,7	2,15	0,68
A. n. lichenya	W 9	90 —94,5	91,4	1,42	0,47	4	83 —89	86,0	2,94	—
	T 9	60 —65	61,7	1,64	0,55	4	59 —61,5	60,2	1,44	—
A. n. spurium	W 12	84 —90,5	87,6	2,27	0,66	12	80 —85	82,5	1,72	0,50
	T 12	60 —64	61,3	1,25	0,36	12	55 —58,5	56,5	1,40	0,40
A. n. lacuum	W 8	85,5—91	87,6	1,89	0,67	8	82 —86,5	83,8	2,01	0,71
	T 8	58 —64	61,8	2,43	0,86	8	57 —60	58,8	1,07	0,38
A. n. cinnamomeus	W 7	90 —96	92,5	2,15	0,81	8	85 —88	86,8	0,95	0,34
	T 7	67 —73	68,5	2,25	0,85	8	61 —66,5	64,2	1,83	0,65
A. n. hoeschi	W 1	96	—	—	—	—	91	—	—	—
	T 1	75	—	—	—	—	71	—	—	—
A. n. „latistriatus" from Itombwe, Kivu, Zaïre, ex Prigogine	W 21	88 —97	92,4	—	—	16	86 —91	88,7	—	—
	T 21	61 —67	63,5	—	—	16	57 —65	61,5	—	—

Table 1: The wing- and teil-length (W, T) variables in the enigmatic *Anthus novaeseelandiae* forms dealt in the present paper: *A. n. „latistriatus"*, *A. n. hoeschi* and *A. n. lwenarum* (including *editus)* and of vicinal subspecies. Data for *A. n. camaroonensis*, *A. n. lynesi*, *A. n. annae*, and *A. n. katangae*, if valid, and *A. n. grotei* are not included.

small size of the testes (judging from White's drawing). If this specimen belonged to a locally resident population one would expect it to have well developed testes in October." The Type of *lwenarum* was obtained on 23 October, 1943, and that of *editus* on the 18th of the same month in 1946. Not all birds arrive back on the breeding grounds in Lesotho at the



Map 1: Sketch-map of southern half of Africa showing the localities of specimens of the two southern dusky tailed races of *Anthus novaeseelandiae* (Gmelin) and the established and suspected breeding grounds of the forms concerned.

1. Suspected highland breeding grounds of *Anthus novaeseelandiae hoeschi* Stresemann

□ Localities of two known specimens of 1

2. Breeding range of *Anthus novaeseelandiae lwenarum* White

● Localities of specimens of 2 taken on passage and on wintering grounds.

one time by all events, because during the course of two expeditions to the high mountains of Lesotho in September and October 1967 and 1968, Quickelberge (1972) found this pipit "scarce during our visits to Lesotho," suggesting that the main influx of breeders to the high mountains only takes place towards the end of the latter month.

Resulting from the above, I conclude that the mysterious *A. n. lwenarum,* the breeding range of which was unknown to Benson *et al.* (1971), is none other than the Lesotho highland population taken on its wintering grounds in central Africa. *A. n. lwenarum,* with *A. n. editus* a synonym, must now been seen as breeding in the highlands of Lesotho at elevations of *c.* 2000 m and above between the second half of October—March, wintering in western Zambia, eastern Angola and Shaba, Zaïre, during the period May—October. It occurs on northbound passage in the northern Cape, Botswana and South West Africa in late March and April, and has been taken on its return journey in eastern Botswana in October (at Francistown). This pattern of seasonal behaviour appears similar to that established for another dusky tailed montane race of Richard's Pipit, namely, *A. n. lynesi,* which breeds in Cameroun.

Conclusions and summary

In the above discussion, three of four obscure central and southern African pipit *(Anthus)* forms normally associated with *Anthus novaeseelandiae* and proposed between the years 1899 and 1951 are considered in depth in face of their varied treatment by White and others in the continuation of Peters' Check-List (1960). The fourth taxon of the foursome is also succinctly dealt with but no decision taken, as it is shortly to be the subject of further research by a prominent Belgian worker.

As shown by Hall in her work on pipits published in 1961, present-day Ethiopian African populations of *Anthus novaeseelandiae* appear to be derivates of two separate invasions of the continent, presumably from Asia, the anomalous forms here considered being relicts of the earlier of the two incursions, these confined as breeders to plateaux grassland in mountains and characterised as a coterie by having the outer tail-feather wedged with smoky vinaceous, and with little or no light colouring on the penultimate rectrix. Evidence suggests all are highly migratory, moving away from highland plateaux after breeding. In the case of the wide-ranging, mid-level and lowland grassland savanna forms, the outer tail-feather is wedged with white, and the penultimate rectrix also exhibits a prominent white mark. These latter are descendents of later colonisations of Ethiopian Africa by the species.

The three forms dealt with *in extenso* are *Anthus hoeschi* Stresemann, 1938, *Anthus richardi lwenarum* White, 1946, and *Anthus richardi editus*

Vincent, 1951. In Peters Check-List, *hoeschi* is rejected as a synonym (of *A. n. bocagei),* while the other two taxa are admitted as valid races of *A. novaeseelandiae: A. n. lwenarum* restricted to north-western Zambia, and *A. n. editus* to the highlands of Lesotho. Resulting from the researches here reported on, *A. hoeschi* is re-instated as a recognisable subspecies of Richard's Pipit, presently known from limited material collected in South West Africa and presumed to breed at high elevations in the Huambo Highlands of Angola. *A. n. lwenarum* (1946) and *A. n. editus* (1951) are now found to be names given to one and the same subspecies, the former to birds taken on the wintering grounds in Zambia and the latter to breeders from the mountains of Lesotho.

Zusammenfassung

Drei afrikanische Formen der Spornpiepergruppe, *Anthus hoeschi* Stresemann 1938, *Anthus richardi lwenarum* White, 1946 und *Anthus richardi editus* Vincent, 1951, die in der Vergangenheit von den Autoren sehr verschieden beurteilt wurden, wurden vom Verfasser kritisch untersucht. Dabei ergab sich, daß *Anthus hoeschi,* in Peters' Check-list of birds of the world, Bd. IX, (1960) für nicht unterscheidbar von *A. novaeseelandiae bocagei* Nicholson, 1884, gehalten, in Wirklichkeit eine gut kenntliche Rasse der Art *A. novaeseelandiae* ist; sie ist gegenwärtig nur von wenigen Stücken aus Südwestafrika bekannt, wo sie aber offenbar nicht brütet; vermutlich liegt ihr Brutgebiet im Huambo-Hochland in Angola. Die Namen *Anthus lwenarum,* in Nordwest-Sambia gesammelten Vögeln gegeben, die in Peters' Check-list als dortige Brutrasse von *A. novaeseelandiae* angesehen wurden, und *A. richardi editus* für Vögel aus dem Hochland von Lesotho beziehen sich auf ein und dieselbe Form: diese muß nun den älteren Namen *Anthus novaeseelandiae lwenarum* White, 1946 tragen und ist Brutvogel in Lesotho; die in Nordwest-Sambia gefundenen Vögel sind offenbar dort überwinternde Tiere.

Wie schon Mrs. Hall (1961) zeigte, haben sich Spornpieper offenbar zweimal, wahrscheinlich von Asien her, nach Afrika ausgebreitet; die erste Ausbreitungswelle ergab neben anderen Hochlandformen *(A. n. camaroonensis* Shell., 1900, *A. n. lynesi* Bannermann & Bates, 1926) die hier untersuchten Bewohner des montanen Graslandes, die sämtlich ihre hochgelegenen Brutgebiete nach der Brutzeit zu verlassen scheinen. Sie stellen möglicherweise eine besondere Art *(Anthus camaroonensis)* dar und sind gekennzeichnet durch nicht weißen, sondern weinfarbenrauchbräunlichen Keilfleck an der äußersten Steuerfeder und völliges oder fast völliges Fehlen einer Aufhellungszone an der zweitäußersten Steuerfeder, die bei den übrigen Rassen der Art *Anthus novaeseelandiae* eine deutliche weiße Zeichnung hat; offenbar sind diese letzteren Formen, die Bewohner tief oder nur mäßig hoch gelegenen Graslandes sind, die Abkömmlinge einer späteren Ausbreitungswelle des Spornpiepers nach Afrika.

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Literature cited

Benson, C. W., R. K. Brooke, R. J. Dowsett and M. P. Stuart Irwin (1971): Birds of Zambia. London.

Clancey, P. A. (1951): Notes on Birds of the South African Subcontinent. Ann. Natal. Mus., vol. xii, 1: 143—145.

— (1954): Miscellaneous Taxonomic Notes on African Birds V. Durban Mus. Novit., vol. iv, 9: 101—115.

— (1968): Subspeciation in some Birds from Rhodesia, 2. Durban Mus. Novit., vol. viii, 12: 153—156.

Hall, B. P. (1961): The taxonomy and identification of pipits (Genus *Anthus).* Bull. Brit. Mus. (Nat. Hist.). Zool., vol. vii, 5: 256—258.

Hall, B. P., and R. E. Moreau (1970): Atlas of speciation in African Passerine Birds. London.

Hoesch, W., and G. Niethammer (1940): Die Vogelwelt Deutsch-Südwestafrikas, namentlich des Damara- und Namalandes. Journ. f. Ornith., Sonderheft.

Jackson, F. J. (1899): List of Birds obtained in British East Africa. Ibis, 7th ser., v: 628.

Mackworth-Praed, C. W., and C. H. B. Grant (1963): Birds of the Southern Third of Africa, vol. ii. London.

McLachlan, G. R., and R. Liversidge (1970): Roberts' Birds of South Africa. Johannesburg.

Prigogine, A. (1960): Le faune ornithologique du mont Kabobo. Ann. Mus. r. Congo Belge, 8°, Sci. Zool., vol. lxxxv: 1—46.

— (1971): Les oiseaux de l'Itombwe et de son hinterland. Vol. i. Ann. Mus. roy. Afr. Centr. 8°, Sci. Zool., 185: 1—298 (185).

Quickelberge, C. D. (1972): Results of two ornithological expeditions to Lesotho. Durban Mus. Novit., vol. ix, 17: 251—278 (269).

Sclater, W. L. (1930) Systema Avium Aethiopicarum, part ii. London.

Stresemann, E. (1938): *Anthus hoeschi* species nova, ein neuer Pieper aus Südwest-Afrika. Ornith. Monatsberichte, vol. xlvi: 149—151.

Traylor, M. A. (1962): Notes on the birds of Angola, Passeres, Pub. cult. Co. Diam. Ang., Lisboa, No. 58: 104, 105.

Vincent, J. (1951): The Description of a New Race of Richard's Pipit *Anthus richardi* Vieillot from Basutoland. Ann. Natal Mus. vol. xii, 1: 135, 136.

White, C. M. N. (1946): *Anthus richardi lwenarum,* subsp. nov., Bull. Brit. Orn. Club, vol. lxvii: 9.

— (1957): Taxonomic Notes on African Pipits, with the description of a new race of *Anthus similis.* Bull. Brit. Orn. Club, vol. lxxvii, 2: 31—33.

— (1960): In continuation of Peters' Check-List Birds of the World, vol. ix: 145—146.

Winterbottom, J. M. (1971): A Preliminary Check List of the Birds of South West Africa. Windhoek.

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