



**THE TREE PIPIT *ANTHUS TRIVIALIS* (LINNAEUS) IN
SOUTHERN AFRICA**

by

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SUMMARY

Clancey, P.A. 1987. The Tree Pipit *Anthus trivialis* (Linnaeus) in southern Africa. *Durban Mus. Novit.* 14: 29-42. Recent texts credit the Eurasian Tree Pipit *Anthus trivialis* as having only two recognisable subspecies: the wide-ranging nominate race described from Sweden with a fine bill and lightly streaked lower forethroat and breast, and a south-eastern, essentially montane, one of the north-western Himalayas north to the Tien Shan in central Asia (*A. t. haringtoni*), with a broader bill and more densely streaked breast. Only the nominate race supposedly winters in Africa. Examination of material from eastern, central and southern Africa shows that three discrete forms occur and consequently the *A. t. trivialis* of Vaurie (1959) and other students is subspecifically composite. The forms reaching eastern and southern Africa are defined herein on the basis of freshly moulted recent specimens taken February/March - April and their tentative breeding ranges are outlined. One form, lacking a name, is described, this breeding in mountainous country in the south of the species' range (south of ca 43 N.) from eastern Turkey and the Transcaucasian region, east to the Elburz Range of northern Iran and adjacent areas, and winters extensively in eastern Africa south to the northern Transvaal. An evolutionary basis for the variation in the nominate race of authors is postulated. Comments on other subspecies not reaching eastern and southern Africa are also included.

INTRODUCTION

The Tree Pipit is a summer breeding resident in the western and central Palearctic, wintering in the Afrotropics and the plains of India south to Kerala. It breeds from the British Isles (not Ireland) and continental Europe (south to northern Spain, Italy and the Balkans), east through northern Asia Minor and the U.S.S.R. to the Baikal region and the middle Lena R. drainage, thence south in the east to Russian Turkestan and the Pamir Range, the north-western Hima-



FIGURE 1. The breeding range of the Tree Pipit *Anthus trivialis* in central and western Eurasia. The distributions of the five subspecies are roughly indicated. 1. *A. t. trivialis* (Linnaeus), 2. *A. t. sibiricus* Sushkin, 3. *A. t. differens* Clancey, 4. *A. t. salomonseni* Clancey, 5. *A. t. haringtoni* Witherby.

layas, and northern Iran and adjacent territories (Fig. 1). To the north and east of its range, *A. trivialis* is replaced by the Olivebacked or Indian Tree Pipit *A. hodgsoni* Richmond, the two forming a superspecies.

In his work on Palaearctic birds, Vaurie (1959) admitted two subspecies: nominate *A. trivialis* (Linnaeus), 1758: Sweden, and *A. t. haringtoni* Witherby, 1917: Gitudas, Kaghan Valley, Gilgit, in the north-western Himalayas. He differentiated *haringtoni* from *A. t. trivialis* on the basis of the broader base to the bill and more heavily streaked ventral surface. However, Hartert & Steinbacher (1932-1938) and Johansen (1944) favoured the recognition of an additional form in *A. t. sibiricus* Sushkin, 1925: Taldura, south-eastern Altai, U.S.S.R., while Clancey (1950) separated the far western insular population of "highland" England, Wales and Scotland as *A. t. salomonseni*, the type-locality Carmunnock, Strathclyde, Scotland.

Examination of a large panel of material from Africa, either taken on the wintering grounds or in transit to or from them, and including the entire series of the British Museum (Nat. Hist.), Tring, indicates that the current nominate race (of Vaurie 1959) is subspecifically composite, comprising several relatively well-characterised forms. Three of these extend as far south as northern South West Africa/Namibia in the west and northern Botswana, Zimbabwe, adjacent upland Mozambique, and the northern half of the Transvaal to the east, with a fourth western subspecies occurring in the savanna regions to the north of the equatorial forest. As it was not possible to assemble material of wintering Tree Pipits from all parts of the Afrotropics in one centre, I restricted this enquiry to subspecies wintering in the South African Subregion, at the same time relating these as far as possible to breeding ranges in the Palaearctic.

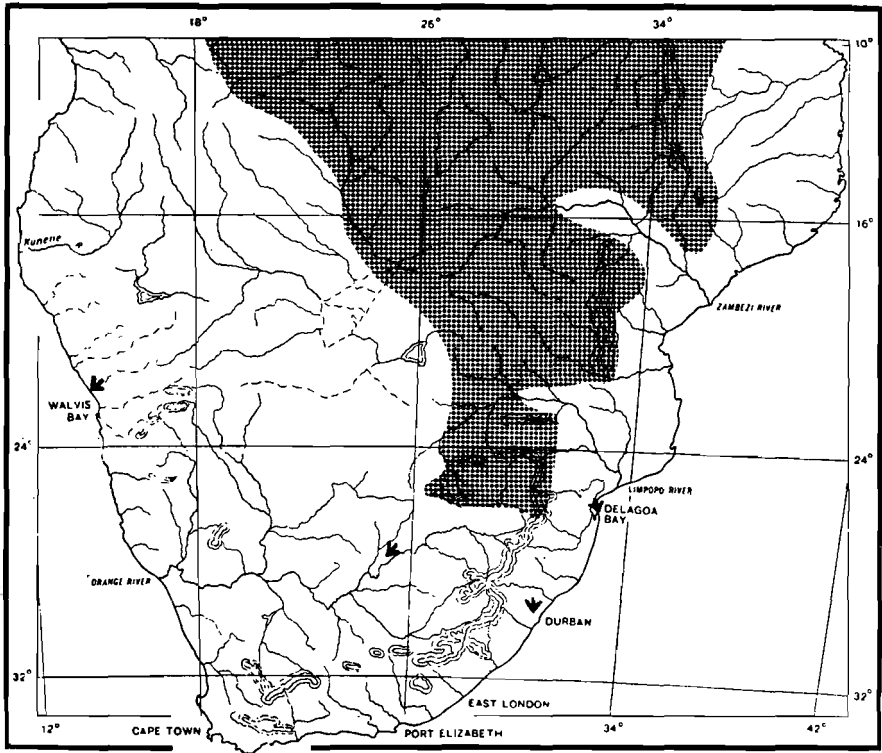


FIGURE 2. The range of the Tree Pipit *Anthus trivialis* south of 10° S during late October-early April. Arrows indicate vagrants.

RESULTS & DISCUSSION

Arrival on and departure from the austral wintering grounds

A. trivialis appears in Zimbabwe from late October or early November (Irwin 1981), and November in Botswana and the Transvaal (Kemp *et al.* 1985). In Zambia, Benson *et al.* (1971) also record their occurrence from early November. The species departs on the northbound migration from late March to early April. Irwin gives 9 April as about the last date of occurrence in south-western Zimbabwe (Matopos Hills), but one from South West Africa/Namibia is dated 28 April. Some five months are spent on the wintering grounds (Fig. 2).

Habitat

In southern Africa it occurs in tree savanna or the edge of woodland in open grassy areas, as well as hillsides with scattered trees and clumps of scrub. In the south and east of its Afrotropical range it reveals a predilection for plateaux and mountainous areas, eschewing humid coastal lowlands and arid valleys. In Zimbabwe it ranges to as high as 2000 m a.s.l. and in East Africa winters mainly above 1500 and rarely below 700 m a.s.l. (Britton *et al.* 1981).

Moult regime

Witherby *et al.* (1938) record a complete moult on the breeding grounds prior to southbound migration during August-September. This finding notwithstanding, the majority of specimens available from eastern, south-central and southern Africa - taken November and December - are in such faded and eroded dress that one could only conclude that no such immediate post-breeding moult had occurred. In all instances where this was found the birds were assessed as adults and not individuals in first-year dress. The evidence, such as it is, indicates that most (? or all) adults migrate to the wintering grounds in worn plumage, and that in cases where moult occurred on the breeding grounds it was restricted to part of the contour feathering.

There is a complete moult on the wintering grounds (contour plumage and wing and tail-feathers) from January - late March/early April, although many depart before its completion. The flight-feathers are obviously only renewed once a year, either prior to the southbound migration in the case of first-year birds or during the later moult of adults in Africa. The fact that adults migrate to Africa after breeding in worn dress while first-year birds do so after moult, and all are in complete nuptial dress as from March/April at the time of the return migration, makes unravelling of geographical variation difficult, particularly in the Afro-tropics.

Geographical variation

Subspecific variation affects the colour of the dorsal surface and the degree of dark shaft-streaking. Over the ventral parts, the streaking on the lower forethroat and breast varies in width and intensity, while that of the lateral body surfaces does likewise in association with latitude, the more boreal populations having the lateral shaft-streaking finer and sparser. The ground colour of the lower forethroat and breast also reveals south-north polarisation, with such surfaces in populations centred on the taiga with the ground pale and yellowish, less sandy or ochraceous buff, and more lightly streaked over the sides than those breeding to the south, which nest in areas peripheral to desertic regions.

Size trends are of small moment in arranging the populations along subspecific lines. Wing-length varies with "highland" Britain birds shorter winged on the whole than their northern continental counterparts, which in ♂♂ have wings 88 - 94, ♀♀ 84 - 88.5, the wings in ♂♂ of the former 83 - 91 mm (Clancey 1950). Sushkin (1925) considered his *A.t. sibiricus* to be shorter winged than nominate *trivialis* (wings in ♂♂ 82 - 87 mm), though Johansen (1944) shows the wing-length of *sibiricus* to be only marginally shorter than the norm of *trivialis* at 83 - 90 mm. Wolters (1966) has also discussed wing-length variation in western Europe, confirming that birds from the Low Countries and western Germany are similar in this parameter to the British populations. Size variation in the far west of the range is evidently clinal, the largest ♂♂ with wings reaching 94 and 95 mm occurring in boreal conditions at high latitudes.

Bill mass is a more satisfactory character for taxonomic purposes, with the eastern montane breeding populations present from the Tien Shan and the Pamirs, south to the Karakoram Range and the western Himalayas heavier-billed than in the western and northern representatives. This population was separated by Witherby as *A.t. haringtoni* in 1917 on material from the Gilgit region on the

heavier breast streaking and the broader base to the bill. Bill-width at the nostrils in *haringtoni* is 5-6, *versus* 2-3,5 mm in the *trivialis* of most authors.

Opinion is still divided over the validity and possible range of *A.t. schlueteri* Kleinschmidt, 1920: Naryn, in the Tien Shan, which, if separable from *haringtoni*, can be sustained only on the less densely streaked lower forethroat and breast. Vaurie (1959) suggested that further research might warrant its resuscitation on the less densely streaked venter, but, *prima facie*, it appears to be based on an intergrading population *haringtoni* \approx *sibiricus* as herein interpreted. The *Type* and two other paratypical specimens of *schlueteri* in the Kleinschmidt Collection in the Museum Alexander Koenig, Bonn, were examined in October, 1985. The heavier bill of the *Type* did not appear to be clearly marked, and K-L. Schuchmann (pers. comm.) found that some nominate specimens from Germany had equally heavy bills.

The current *A.t. trivialis* can be arranged in three widely distributed subspecies, with one isolate in "highland" Britain:

1. *Anthus trivialis trivialis*
2. *Anthus trivialis sibiricus*
3. *Anthus trivialis differens* (described below)
4. *Anthus trivialis salomonseni*

A.t. trivialis (as above) is conceivably capable of subdivision along the lines of Vaurie's comments on the paler nature of the far eastern population breeding on the middle Lena R. drainage and Yakutia in the eastern U.S.S.R. A population showing such criteria certainly migrates through Afghanistan (series *ex* the Meinerzhagen coll. examined at Tring), probably to winter in peninsular India. No name in the literature seems applicable, unless, perhaps, for *Anthus agilis* Sykes, 1832: Deccan, India. The *Type* of *A. agilis* (in the collection of the British Museum (Nat. Hist.)) is, however, now almost certainly seriously foxed and subspecifically unreliable, but the name could be employed in the event of it being shown that the Lena/Yakutia population is discrete and winters largely on the Deccan of India.

SUBSPECIES REACHING SOUTHERN AFRICA

1. *Anthus trivialis trivialis* (Linnaeus)

Alauda trivialis Linnaeus, *Syst. Nat.*, 10th ed., i, 1758, p. 166: Sweden.

Synonyms:

Alauda Agrestis Latham, 1787: south-eastern England - Kent (see Clancey 1950).

Alauda minor Bechstein, 1788: Europe.

Anthus arboreus Bechstein, 1807: middle Germany.

Anthus foliorum Brehm, *Anthus juncorum* Brehm, *Anthus herbarum* Brehm, all of 1831: Germany.

Anthus arboreus validus Brehm, *Anthus arboreus saxorum* Brehm, both of 1856: Germany.

Anthus arboreus microrhynchus Brehm, 1856: Scandinavia.

Dorsum (March/April, near Dark Olive-Buff (Ridgway 1912)) with narrow dusky shaft-streaking, the rump plain. Below, throat and breast pale Cream-Buff, with dark brown streaking; lateral streaking fine and hair-like on a white ground; belly extensively white.

Measurements: Wings of 12 ♂♂ from southern Africa (including Zambia) 86 - 92 (88,4), SD 1,99, tails 56 - 63 (59,9), SD 2,24; wings of 12 ♀♀ 81 - 87 (84,7), SD 1,68, tails (of 10) 53 - 61 (56,5), SD 2,93 mm.

Southern African Subregion specimens: 18. *Transvaal:* Haenertsburg, near Tzaneen (5 Dec.); *Botswana:* 16 km N.W. of Pandamatenga (18 Dec.), Mumpswe (18 Apr.); *Zimbabwe:* Hopefontain Mission, Bulawayo (19 Feb.); Cyrene Mission, Bulawayo (11 Nov.), Bulawayo, 2(6 & 7 Feb.), Tatin R. (10 Dec.), "The Corner" at 19 40S, 32 58 E. (20 Dec.), Mt Emberengwa, Belingwe (17 Dec.), Sengwa R., Kariba (10 Jan.), Harare (= Salisbury), 2 (26 Dec. & 18 Jan.), Marandellas, 2 (19 Nov. & 12 Dec.), Chimanimani Mtns (4 Feb.), Mt Selinda, 2 (9 & 15 Dec.).

Breeding range: Typically from Fenno-Scandia north almost to the limit of the tree line, Germany, Czechoslovakia and Poland, east through European Russia to the Ural Mtns, and narrowly still further east to the middle Lena R. drainage and Yakutia (to about 130 E). To the east of the Urals in the south recorded as intergrading with *A. t. sibiricus* (Johansen 1944). In the far west of its range it intergrades in south-eastern England with *A. t. salomonseni*, and in south-central and western mainland Europe (south to the Pyrenees and Cantabrian Mtns, Spain) and to the south of its range further east with the following subspecies. Winters in the Afrotropics and peninsular India, but only to a limited extent as far south as the Southern African Subregion.

Remarks: European specimens measured were from Sweden, Holland, Germany, Austria, Czechoslovakia, Romania and Greece (Crete - migrant), the wings of ♂♂ measuring 86 - 90 (88,5), ♀♀ 82 - 88,5 (84,5) mm. These means agree with those of southern African-taken specimens of the present taxon. In the event of the far eastern population of *A. t. trivialis* breeding in the middle Lena R. drainage and Yakutia being considered separable in the future, the name *Anthus agilis* Sykes, 1832, will require to be considered.

2. *Anthus trivialis sibiricus* Sushkin

Anthus trivialis sibirica Sushkin, *List and Distr. Birds Russian Altai*, 1925, p. 69: Taldura, south-eastern Altai, U.S.S.R.

?*Anthus arboreus luteigularis* Brehm, *Naumannia*, 1856, p. 339: "wanderer to Egypt" = Egypt on migration.

Differs from nominate *trivialis* in newly assumed dress (March/April) in having the edges to the dorsal feathering bronzy olive-brown and ochraceous tinged, less greyish olive (about Isabella Color). Below, with the lower forethroat and breast with the ground more ochraceous sandy or plain sandy buff (near Cinnamon-Buff), the buff diffused over the lateral surfaces and flanks, which are more heavily streaked, the latter also with an olive wash; medio-ventral white more restricted. Similar in size. The buff of the venter is retained and still discernible in worn and sun affected breeders on their return to the wintering grounds in Africa from late October/November.

Measurements: Wings of 12 ♂♂ from southern Africa 85 - 92 (89,1), SD 1,83, tails 56 - 63 (59,5), SD 1,47; wings of 12 ♀♀ 83 - 88 (85,8), SD 1,61, tails 54 - 60 (56,7), SD 2,06 mm.

Southern African Subregion specimens: 32. *Transvaal:* Pretoria (30 Dec.), Haenertsburg (6 Dec.), Woodbush, Tzaneen (26 Feb.), Blouberg (17 Feb.); *South West*

Africa/Namibia: Swakopmund (28 Apr.); *Zimbabwe*: Matetsi (8 Feb.), W. Gwaai Reserve (29 Jan.), Matopos Hills (22 Dec.), Bulawayo, 2 (18 Feb. & 6 Mar.), "Mkien", Bulawayo (11 Mar.), Cyrene Mission, Bulawayo (5 Jan.) Lalapanzi (7 Jan.), Chizarira Hills at 17 38S, 27 50E (8 Mar.), Darwendale (25 Feb.), Rusape, 3 (5 & 11 Jan.), Umvukwes Range at 17 10S, 30 43E (14 Jan.), Headlands (2 July (? date)), Nyahuvu, Headlands (19 Dec.), Mutare (= Umtali) (26 Dec.), Mt Selinda, 10 (7 Dec. - 11 Mar.). A series of 15 ♂ ♀ of *sibiricus* from eastern Zaïre (Kahanda, Lutunguru, Kamituga, Butembo and Kasika) are dated November - 3 April. All date from the 1950s (A. Prigogine coll. at Tervuren).

Migration dates: NORTHBOUND: *Kenya*: Kikuyu Forest (Apr.), Nairobi (15 Mar.), Turi Forest, Molo (27 Mar.), L. Elmenteita (23 Mar.); *Uganda*: Rwenzori Range (18 Mar.); *Sudan*: Mongalla (21 Mar.); *Ethiopia*: Aussa (9 Apr.), L. Turkana (13 Mar.), Ganti (28 Mar.); *Somalia*: Borama (19 Feb.); *Libya*: Siwa Oasis (19 Apr.); *Mauritania*: Port Etienne (23 Apr.). Also Tangier (24 & 27 Mar.), and many from Egypt, Cyprus, Israel, Lebanon and Syria. SOUTHBOUND: *Sudan*: Kulme, Darfur (26 Sep.), Khartoum (25 Sep.); *Ethiopia*: Dangila (7 Sep.), Machigay, S. of L. Tana (10 Oct.), Yabello (26 Sep.).

Breeding range: Unstable populations of *trivialis* \geq *sibiricus* occur south of the previous race from the Cantabrian Mtns and Pyrenees, Spain, to southern France and northern and central Italy (Apennines), with stable ones further east from south-eastern Europe and the Balkans, east through European Russia south of *trivialis* to the regions skirting the desertic Aralo-Caspian region, in the north to Kazakhstan as far east as the Tarbagatai and Russian Altai. Recorded as intergrading with the nominate subspecies in regions immediately to the east of the Ural Mtns. Winters wholly in the Afrotropics, largely in the east, south to the Southern African Subregion (mainly in the north-east).

Remarks: The adoption of Sushkin's *Anthus trivialis sibirica* of 1925 for this taxon may be queried by some workers as it could be antedated by Brehm's *Anthus arbo-reus luteigularis* of 1856. *A.t.sibiricus* is the main race of the Tree Pipit encountered on migration in eastern Mediterranean countries and in Egypt, the type-locality of *luteigularis*. The *Type* of *luteigularis* was not available for this study, but even if the name is confirmed as applicable, it will be an unused senior synonym and, therefore, a *nomen oblitum*. The name has not been used in the premier zoological literature for well over a hundred years.

The specimen taken at Swakopmund on 28 Apr. 1931, in the Transvaal Museum may not have been labelled at the time of collection. It is in abraded dress, suggesting a turn of the year date of collection. The Headlands, Zimbabwe, specimen in the National Natural History Museum, Bulawayo, collected by R.W. Rankine and dated 2 July 1956, may bear an incorrect date, although this date is listed by Smithers *et al.* (1957). Mrs B.P. Hall (1961), who studied the variation of *A.trivialis*, left MSS notes in the specimen trays of this species in the British Museum (Nat. Hist.) to the effect that she was prepared to recognise *sibiricus* as a valid subspecies. She described the form as being paler and greyer than nominate *A. trivialis*; also smaller and with a reduction in the level of difference in length between primaries 3 & 4. She attested to the view that migrants could not be distinguished, though why this should be is not immediately clear as the species moults in its winter-quarters into fresh dress when subspecific characters are

most clearly delineated. I cannot reconcile these findings, as it is the high latitude nominate race which is the paler and greyer of the two subspecies (*A.t. trivialis* and *A.t. sibiricus*), though the other characters are diagnostic of the more richly coloured *sibiricus*, and accord with the earlier findings of Hartert & Steinbacher.

3. *Anthus trivialis differens*, subsp. nov.

Type: ♂, adult. Sarikamis, eastern Turkey, at 40 19N, 42 35E, at 2300 m a.s.l. 20 May 1965. Collected by H. Mittendorf for Dr H. Kumerloeve. In the collection of the Museum Alexander Koenig, Bonn, West Germany. Reg. No. 65.1007.

In fresh nuptial dress (March/April) differs from *A.t. sibiricus*, as defined above, in having the dorsal surfaces darker and still more brownish olive (Light Brownish Olive), with broader and blacker shaft-streaking. Ventrally, with the ground of the lower forethroat and breast more saturated and redder buff (close to Chamois), and with the rest of the underside tinged yellow, even the under tail-coverts. Breast streaking much heavier and deeper black, but lateral and flank striae only marginally heavier. In worn post-breeding dress darker and with heavier shaft-streaking to the upper-parts. Below, with the breast more heavily marked than in *sibiricus* and *trivialis* in comparable states of wear and fading, the streaks massed, almost forming a plastron (Fig. 3).

Measurements: Wings of 12 ♂♂ from Africa 85,5 - 93 (88,9), SD 2,02, tails 57,5 - 65 (60,5), SD 2,40; wings of 12 ♀♀ 83 - 88 (85,9), SD 1,54, tails 55 - 61 (58,8), SD 1,80 mm. *Measurements of the Type:* Wing (flattened) 90, culmen from base 17, tail 61 mm.

Southern African Subregion specimens: 13. *Transvaal:* Pretoria (6 Dec.), Rustenburg (14 Nov.); *Botswana:* Francistown (8 Feb.); *Zimbabwe:* "Mkien", Bulawayo (11 Mar.), Bulawayo (11 Feb.), Cyrene Mission, Bulawayo, 2 (1 & 15 Mar.), Lalapanzi (7 Jan.), Matopos Hills (9 Apr.), "The Corner" at 19 40S, 32 58E (15 Dec.), Chizarira Hills (8 Mar.), Darwendale, 2 (25 Feb. & 1 Mar.).

Other African specimens: 24. *Zambia:* Chilanga (19 Jan.), Luitikila R., Mpika (18 Dec.), Chipata, 2 (15 Jan. & 23 Feb.), Chongwe R., Lusaka (10 Feb.); *Malaŵi:* Dedza (5 May), Vipya Plateau (28 Nov.), Sombani, Mlanje (10 Dec.); *Tanzania:* Njombe Highlands, 2 (2 & 4 Dec.), Dabaga Highlands, 2 (7 & 9 Feb.), Longido Mtn (28 Oct.), Mt Ketumbeine (8 Jan.), Mt Hanang (11 Feb.), Ilmolok, Mt Kilimanjaro (11 Mar.); *Zaire:* Mt Kabobo, 2 (29 Oct.), Cambove (n.d.); *Uganda:* Lango (29 Oct.), Rwenzori (= Ruwenzori) Range (27 Jan.); *Kenya:* Nanyuki (29 Mar.); *Ethiopia:* Waibela, Abai R. (1 Feb.); *Cameroon:* Batauri (8 Mar.).

Eurasian specimens: 7. *Turkey:* Sarikamis, 3 (20 May); "Tahir zecidi" (May); Rizl, Lasistan, 2 (11 & 20 Aug.); *U.S.S.R.:* Ashkhabad, Kopet Dag, Turkmenia (May).

Breeding range: The eastern aspects of Asia Minor and the Transcaucasian region and Armenia and Azerbaydzhan, south and south-east to Kurdistan, northern Iraq, the Elburz and other ranges of northern Iran, and the contiguous Kopet Dag, Turkmenia. Winters in eastern Africa from Ethiopia, Uganda and Kenya to Tanzania, eastern Zaire, eastern Zambia and Malaŵi to Zimbabwe and the northern Transvaal (seldom). The territories of Tanzania and Zaire to eastern Zambia, Malaŵi and Zimbabwe are collectively the main hibernal range. Noticeably associated with the higher mountains in many parts of its wintering

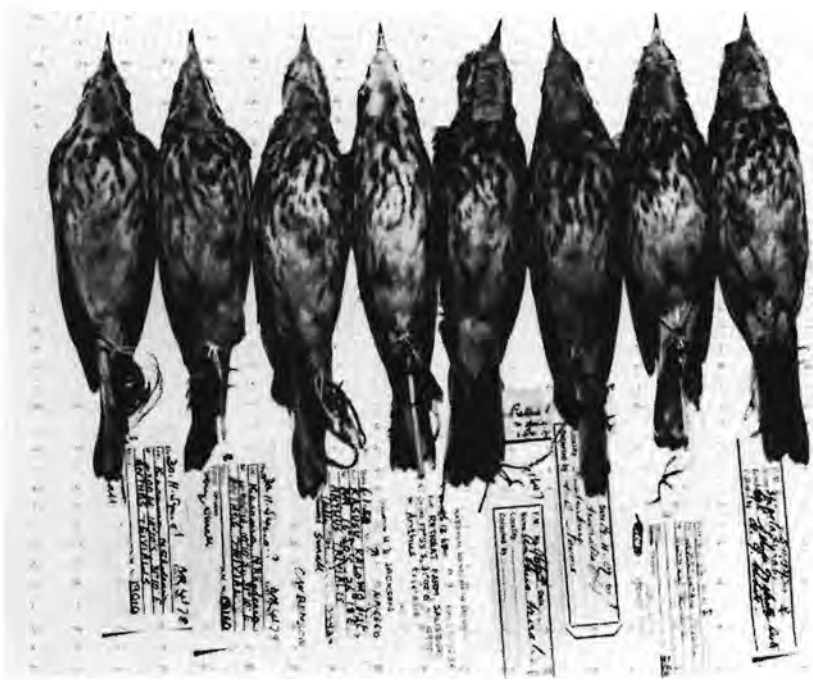


FIGURE 3. The ventral aspect of specimens of two subspecies of the Tree Pipit reaching southern Africa. Note the densely streaked breast and duller ground colouration in *A.t. differens*.

Four on left: *Anthus trivialis trivialis*

♂ ad. Kasama, Zambia, 30 Nov. 1954; ♀ ad. Kasama, Zambia, 30 Nov. 1954; ♂ ad. Kasusu, Kalomo, Zambia, 6 Jan. 1958; ♂ ad. Retreat Farm, Harare, Zimbabwe, 26 Dec. 1968.

Four on right: *Anthus trivialis differens*

♂ ad. Pretoria, Transvaal, 6 Dec. 1912; ♀ ad. Rustenburg, Transvaal, 14 Nov. 1907; ♂ ad. Hopefountain Mission, near Bulawayo, Zimbabwe, 19 Nov. 1956; ♀ ad. Mt. Selinda, Chipinga, Zimbabwe, 5 Nov. 1935.

range. Migration route apparently to the east of the routes followed by nominate *trivialis* and *sibiricus*.

Remarks: *Etymology:* *Differens*, from Latin *differere* to be different, to bear off in a different direction. The short eastern Turkish series in the Museum Alexander Koenig, Bonn, was collected by H. Mittendorf for H. Kumerloeve in 1965. The two August moulting females from Lasistan, also in eastern (Asiatic) Turkey, at Bonn, were taken by Frau Neuhauser in 1934, and are in full moult of the contour plumage, wings and tail. A note made at the time of the examination of these latter specimens reads: "Ventral streaking very heavy and carried over the sides of the body; ground colour sandy buff, with restricted medio-ventral white. Upper-parts saturated reddish olivaceous, and heavily streaked, resembling (*A.t.*) *salomonseni*."

Sserebrowski, 1925. *Nouv. Mem. Soc. Nat. Moscou*, vol. 18 (2), quoted in Hartert

& Steinbacher (1932 - 1938), was first to draw attention to the heavily streaked nature of this subspecies and to outline a possible breeding range for it as the Caucasus, south-east to the Elburz Mtns in Iran.

COMMENTS ON OTHER SUBSPECIES

Anthus trivialis salomonseni Clancey, 1950: Carmunnock, Strathclyde, Scotland.

In spring dress (May) browner and somewhat redder, not such a greyish, olive over the upper parts than in *A.t. trivialis*, the shaft-streaking heavier and darker. Ventrally, with the ground to the lower forethroat and breast reddish buff, *versus* pale Cream-Buff, the pectoral streaking on the whole finer and less profuse. Size ranging somewhat smaller: wings of 22 ♂♂ 83 - 91 (86,8), SD 1,94, of 4 ♀♀ 83 - 86,5 (84,8), SD 1,43 mm.

Breeds from Wales, the Pennines, the Lake District and Northumbria, England, north to the Scottish Highlands and some of the Inner Hebrides. Sparse north of the Grampians, reaching its limits in Ross and south-eastern Sutherland. Winters in West Africa, specimens showing the criteria of this form identified from Mauritania (on migration), Guinea, Liberia (Mt Nimba), and Ashanti, Ghana, east to Cameroon.

Vaurie (1959) treated this far western relict population, with its closest affinity seen as birds breeding in eastern Turkey to northern Iran and Turkmenia, as inseparable from *A.t. trivialis*. He did not examine the paratypical series, and British breeding material at that time was limited in museum collections.

Anthus trivialis haringtoni Witherby, 1917: Gitidas, Kaghan Valley, Gilgit, north-western India.

Synonyms:

Anthus microhynchus Severtsov, 1883: Pamir Range, Tadjikistan, U.S.S.R. (pre-occupied by *A.a. microhynchus* Brehm. 1856).

Anthus arboreus schlueteri Kleinschmidt, 1920: Naryn, Kirghizia, U.S.S.R.

Anthus hodgsoni burzil Koelz, 1939: Burzil Pass, Kashmir, north-western India.

Differs from the foregoing taxa in having the base of the bill broader - width at posterior of the nares 5 - 6, *versus* 2 - 3,5 mm. Dorsal colouration and streaking as in *A.t. differens* (see above), and in the Himalayan population equally as heavily streaked with black over the lower forethroat and breast. Size comparable.

A.t. haringtoni occurs in mountainous country from the north-western Himalayas to the Karakoram Range, the Pamirs and Tien Shan in Kirghizia, U.S.S.R. The birds breeding in the Pamirs north to the Tien Shan are less heavily streaked over the breast than in those of the north-western Himalayas. Kleinschmidt's *schlueteri* is available for them should they be treated as a discrete race, but from the limited material examined, Naryn specimens may simply represent an intergrading *haringtoni*-*sibiricus* population, in which case the name *schlueteri* should remain in the synonymy of *haringtoni*. *A.t. haringtoni* winters on the northern plains of India according to Vaurie (1959).

COMMENTS ON HISTORICAL ORIGINS OF SUBSPECIES

The variation in *A.t. trivialis* of Vaurie and other recent students probably derives from the long isolation and fragmentation which affected the major eastern (cen-

tral Asian) and south-eastern faunal refugia during the Wurm glaciation of the Pleistocene. The separation of the distinctive south-eastern *A.t. haringtoni*, characterized by a basally broader bill, and centred on the western Himalayas north to the Tien Shan, presumably dates back to still earlier times. Concomitant with the retreat of the glaciation in the western Palaearctic and the subsequent spread of forest, there was an expansion of birds from the Asiatic Russian refugium to Fenno-Scandia and western and central Europe, where they are based largely on the taiga and its modified periphery. Populations seen as stemming from this refugium are characterized by their greyish olive, lightly streaked upper-parts, pale yellowish ground to the forethroat and breast, the dark striae moderately developed, and the rest of the venter extensively white, the lateral streaking suppressed and hair-like.

A second group of populations differs from the foregoing in having the dorsum in fresh dress more bronzy or ochraceous olive, less greyish, but also with the ground to the forethroat and breast ochraceous or sandy buff, and the sides of the body and flanks pronouncedly streaked with brownish black. In some populations the breast streaking may be much heavier and blacker. Birds of this second group are present to the south and south-east of the foregoing elements in the west of the Palaearctic, where they are seasonally found in association with hardwood forest types, their ancestral origin the south-eastern refugium of Wurm times. This view is supported by the enhanced analogous criteria of the breeders present in the mountainous regions from eastern Turkey and the Caucasus to the Elburz and other ranges of northern Iran and the adjacent U.S.S.R. Elements of this refugial facies evidently thrust further to the west in their expansionary phase, to terminate in the colonising of the highland areas of Great Britain. Strangely, they did not reach Ireland which, with the Isle of Man, still lies beyond the breeding range of the species. Of significance is that the highland Britain representative (*A.t. salomonseni*) - in its dark brownish and heavily streaked dorsal surface, and reddish sandy ground to the forethroat and breast (Clancey 1950) - lies closer in such characters to the contemporary eastern Turkey/Transcaucasian - Elburz/Kopet Dag population (*A.t. differens*) than to the European elements of the taiga zone (nominate *trivialis*). This is noteworthy, because many forms present in northern Britain in association with taiga forestal remnants are detached elements (isolates) of boreal species. Avian recruitment in the region is currently of northern European mainland species rather than by those centred on the Mediterranean and Middle East, which are tending to die back at the present time in sympathy with climatic shifts, such as the advent of wetter summers. The increasing industrialisation of the region may also be a contributing factor to the withdrawal.

In this consideration of the history of the slender-billed populations of *A. trivialis*, it is noted that the south-eastern population (*A.t. differens*) shifts in its darker dorsal colouration and heavy forethroat and breast streaking to part of the character suite of the western Himalaya - Tien Shan form lying immediately to the east of it (*A.t. haringtoni*), which stands apart on the basis of the broader base to the bill, connoting some major difference in ecology, and, as stated earlier in the present paper, probably dating from a still earlier evolutionary stage.

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APPENDIX 1. Mensural data of sexed adults of the Tree Pipit *Anthus trivialis* obtained in sub-Saharan Africa in the collection of the British Museum (Nat. Hist.), Tring, taken by M.P. Stuart Irwin in 1986.

TERRITORIES		WINGS					TAILS			
Sex	n	Range	\bar{x}	SD	% > 90,5 in ♂	n	Range	\bar{x}	SD	
West Africa	♂	13	84-90	86,9	1,93	0	13	57-64	61,3	2,09
	♀	9	82-89	85,2	2,53	-	8	60-64	62,6	1,76
Nigeria and Cameroon	♂	11	86-93	87,8	2,18	9,1	11	57-69	61,8	3,18
	♀	8	83-89	85,8	2,41	-	8	60-64	61,6	1,30
Sudan and Uganda	♂	25	80-94	88,3	2,91	12,0	25	59-71	63,2	3,30
	♀	20	83-93	87,5	2,76	-	20	59-66	62,6	1,87
Ethiopia and Somalia	♂	11	86-91	87,8	2,04	9,1	11	59-66	61,9	1,86
	♀	13	82-87	84,4	1,61	-	13	58-64	61,4	1,85
Kenya	♂	12	82-93	86,3	3,02	8,3	12	57-63	59,6	1,77
	♀	6	83-87	84,8	1,72	-	6	58-64	60,3	2,43
Tanzania	♂	7	85-92	89,0	3,05	42,8	7	58-64	62,7	2,21
	♀	14	81-92	86,8	2,82	-	14	55-67	60,2	3,21
S. Zaire (Cambove)	♂	1	83	-	-	-	1	60	-	-
	♀	1	86	-	-	-	1	61	-	-
Zambia, Malawi and Zimbabwe	♂	7	82-91	87,1	3,57	14,2	7	56-66	60,8	3,52
	♀	5	82-88	85,2	2,28	-	5	58-61	59,8	1,30

Populations in which adult ♂♂ have wings >94 mm are mainly those breeding at high latitudes on the Arctic edge of the taiga from Fenno-Scandia eastwards and which undertake the most extended migrations. The mean of West African specimens is ♂♂ 84-90; \bar{x} 86,9; SD 1,93, which corresponds intimately with that of British *A.t. salomonseni* in Clancey (1950), namely ♂♂ 83-91, \bar{x} 86,8; SD 1,43; n 22, and for western (and probably southern) mainland European *A.t. trivialis* \approx *salomonseni* at 85-88; \bar{x} 86,8; SD 1,10 in 7 ♂♂, indicating that occidental elements migrate to West Africa (Senegal, The Gambia, Guinea, etc. east to Nigeria). The populations of nominate *trivialis*, *sibiricus* and *differens* winter in the main to the east of the foregoing (from Cameroon eastwards) and in East and south-eastern Africa to the east of the equatorial forest, south as far as the northern Transvaal. Samples of these latter wintering populations are subspecifically composite, so size variables derived from wintering birds do not indicate local Eurasian origin.

The high standard deviations of wing-lengths of ♂♂ from Kenya, Tanzania and Zambia, Malaŵi and Zimbabwe confirm their composite nature. However, 13 Zimbabwe males in southern African collections, drawn from the three races, measured by me have wings 86-91,5; \bar{x} 88,1 and a standard deviation of 1,73 which is smaller than that of any sample measured at Tring by M.P.S. Irwin.