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SEASONAL DISTRIBUTION OF THE MIGRATORY EUROPEAN SWIFT *APUS APUS* (LINNAEUS) (AVES: APODIDAE) IN THE ETHIOPIAN REGION

by

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This paper reviews the distribution and migration of the European Swift *Apus apus* in the Ethiopian Region, essentially Africa south of the Sahara. The study is based on specimens examined in the various museums listed in *"Acknowledgments"* below, acceptable published specimen records, and a list of recoveries of ringed birds provided by R. J. Dowsett of the National Museum of Zambia. The non-breeding range is held to be that occupied in the months of December and January and this proves to be (see Map) from 31° S., north to the Equator in the east and to 4° N. in Cameroun. Sight records strongly suggest that West Africa south of 8° N. is also part of the non-breeding range. The species has been recorded in almost all African territories, but in those excluded from the non-breeding range only on passage.

The present writer (Brooke (1971)) recognizes three races in *Apus apus*: nominate *A.apus* (L.), 1758, *A.a.pekinensis* (Swinhoe), 1870, and *A.a.unicolor* (Jardine), 1830. The first two have their non-breeding quarters in the Ethiopian Region and the third is extra-limital. *A.alexandri* Hartert, 1901, of the Cape Verde Islands, is often regarded as a race of *A.apus* but I have (*op.cit.*) argued that it is better considered to be specifically distinct.

Map I shows records of *A.a.apus* known to me with circular symbols and of *A.a.pekinensis* with triangular symbols. The solid

symbols are records made in December and January, which are of birds undoubtedly in their non-breeding quarters. All records are of specimens examined or reported in the literature or of recovered ringed birds. The dated localities are listed in the "*Appendix*", grouped by subspecies and countries, and the numbers in brackets after a place name are the month or months of collection. It appears that *A.a.pekinensis* winters almost exclusively in the South West Arid District of the continent and that nominate *apus* prefers moister areas to the east and north. Furthermore, *pekinensis* reaches its non-breeding grounds by travelling north and west of the Congo forest and does not take the direct route through East Africa on either journey. Nominate *apus* seems to leave its breeding grounds in a south-westerly direction and only heads south-east to its non-breeding quarters after it has crossed the Sahara.

The corollary of defining the non-breeding range as the area occupied in December and January, as De Roo (1966) also did, is that examples recorded in the Ethiopian Region in May and June are birds which are not visiting the breeding range in that season. There are a number of such records of *A.a.apus* in the "*Appendix*" and the most southerly is of a ringed adult recovered at Ngoso in Zaïre at 4° 46′ S. Thus some adults may remain in the Ethiopian Region during the breeding season and it is known that some, perhaps most juveniles, return to the breeding range when the adults are breeding (De Roo (1966)). There are as yet no records of *pekinensis* which were not visiting their breeding range in the proper season.

APUS APUS

From a consideration of their breeding ranges it is not clear why *pekinensis* should be paler than nominate *apus* since the breeding season rainfall does not decrease from west to east and from north to south in the way that melanin deposition in the plumage does. But it will be shown below (see also Map I) that *pekinensis* has its non-breeding quarters in and around the Kalahari Desert in south-western Africa, whereas nominate *apus* usually frequents more humid areas to the north and east. All *pekinensis* seem to have their non-breeding quarters in an area which has less than 600mm of rain each year. The comparative pallor of *pekinensis* appears to be a case of racial variation being selected for or determined by the non-breeding quarters, as Salomonsen (1955) showed for the Ringed Plover *Charadrius hiaticula* Linnaeus and other species. Increased pallor is a feature of many species and races of birds and mammals in and around the Kalahari Desert, including other swifts: *A.bradfieldi* (Roberts), 1926, and *A.affinis theresae* Meinertzhagen, 1949.

I have shown (Brooke (1969)) that juveniles of most fork-tailed swifts can be recognised by their blunter, less emarginate outer rectrices and this applies to *A.apus*. De Roo (1966) showed that juveniles do not moult their primaries during their first visit to Africa and can thus be distinguished from older birds. As in most *Apus* swifts, juveniles may fairly readily be determined racially: nominate *apus* has a pale patch above the sides of the gape (about the lores), whereas *pekinensis* has not.

There is no evidence that the two sexes or adults and juvenile birds travel or winter separately in the Ethiopian Region. For instance, ten specimens of *pekinensis* were obtained on 28 October, 1968, from a south bound migration of swifts at Chipindo in the Huila District of Angola: six were males, three were females and one was not sexed, while four were adults and six were juveniles. In addition, the races are not always separated on migration: both have been collected at the same places (see Map I) and in the Chipindo passage three nominate *apus* were also collected: an adult male, an adult female and a juvenile male. I have seen racially mixed parties in Bulawayo and the Matopos in Rhodesia.

Lockley (1970) showed that *A.apus* does not come to ground to roost but dozes on the wing high in the night sky. This seems to apply to all Old World migratory swifts and greatly complicates the study of their movements, distribution and behaviour. Lockley also pointed out how slowly they travel and Moreau (1972) gives further evidence of this. Both authors also noted their fondness for weather-determined movements and for back-tracking in the presence of moving storm systems.

(i) **Apus apus apus** (Linnaeus), 1758: Sweden

The "*Appendix*" lists collection localities of the present taxon with the month of collection in brackets. Unless an authority is cited it is to be understood that I examined the specimens concerned.

It appears that nominate *apus* crosses the Sahara on both passages on a broad front, but seldom, if ever, stays in Africa west of Cameroun. Moreau (1972) believed that some wintered in West Africa, *i.e.*, that they occurred there in December and January. This is almost certainly true but there are no unambiguous records to support this belief. General statements that *A.apus* is present from, say, September to May are not sufficient evidence for determining the non-breeding range when dealing with birds which are readily misidentified in the field and which are notorious for appearing suddenly in large numbers and disappearing equally suddenly. The

proven non-breeding range is from 4° N. in Cameroun and the Equator in East Africa, south to the Orange River basin at 31° S. Brooke & Traylor (1967) believed that it wintered as far north as Sabga at 6° N. in Cameroun on the strength of a January-taken bird reported by Serle (1965). This is not correct since the specimen is now the *Type* of *A.barbatus serlei* De Roo (1970).

A juvenile collected on Aldabra on 8 September (see "*Appendix*") was undoubtedly one lost on passage. The only other records from the Malagasy Sub-Region are also from Aldabra: a specimen of *pekinensis* taken in December and a sight record of indeterminate race for 15 March (Benson & Penny (1971)). The species is perhaps unlikely to winter in the region although on Madagascar itself it would be difficult separate in the field from the resident *A.barbatus balstoni* (Bartlett), 1880.

The earliest specimens collected south of the Zambezi and Cunene Rivers are dated 10 November from Nyamandhlovu, Rhodesia, and "Quickborn" Farm, Okahandja, South West Africa. The latest are 14 February from Namutoni in South West Africa, 23 February from Britstown in the Cape Province of South Africa (the most southerly record in Africa) and 24 March from Funhalouro in Mozambique (Pinto (1959)). From acceptable sight records it can be shown that although most departures from the interior of southern Africa are in late January and early February, some birds stay until late March on the east coast, and in most years small numbers pass through Zambia in the second half of March. Arrivals south of the Zambezi are usually from about the second week of November onwards, whereas just to the north, in Zambia, the species is regular from mid-October. It is clear that southward passage must be very leisurely. Smithers' (1951) record of nominate *apus* collected at Melsetter in eastern Rhodesia as early as 14 October proves upon examination to be an *A.barbatus oreobates* Brooke (1970).

R. J. Dowsett, *in litt.*, has advised me of 29 recoveries in the Ethiopian Region of nominate *apus* ringed in western Europe: Congo-Brazzaville (2), Zaïre (17), Malawi (9), Rhodesia (1) and these are included in the attached map and the "*Appendix*". These birds were ringed in the British Isles (18), Czechoslovakia (1), France (2), Germany (4), the Netherlands (2), Sweden (1) and Switzerland (1). Mr. Dowsett knows of no recoveries in the Ethiopian Region of birds ringed in Belgium, Denmark, Finland, Norway, or the U.S.S.R., the only other countries in which the species has been ringed in any numbers.

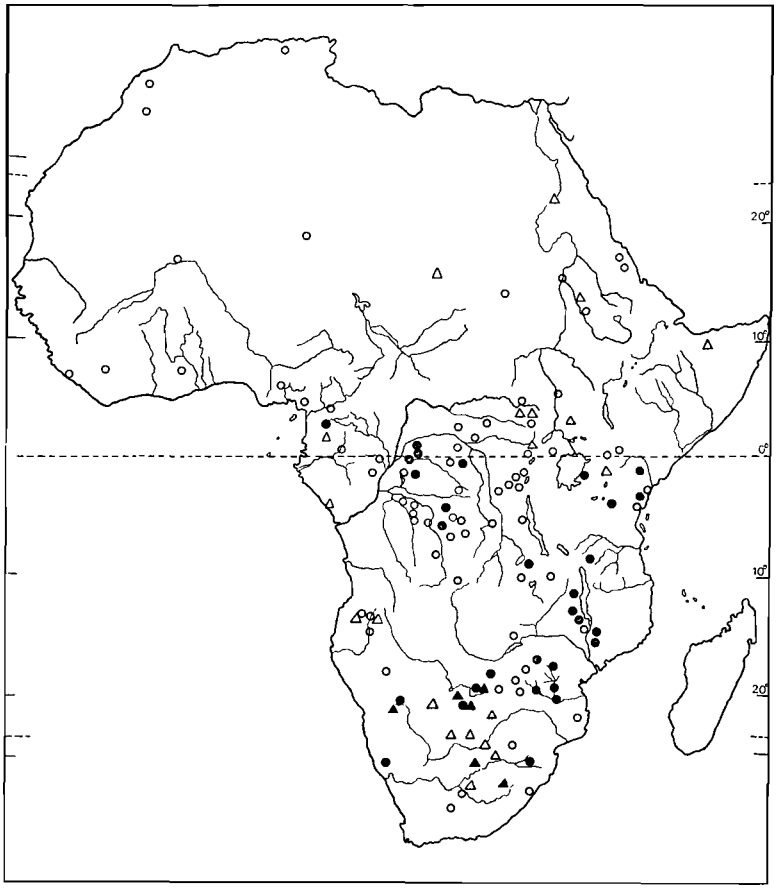
Most of the birds recovered were ringed as nestlings or as adults at or near their breeding sites. All were ringed west of 16° E. and would have had to take a south-easterly route to reach their non-breeding range, which extends to at least 36° E. in Malawi. But autumn recoveries in Europe of British-ringed birds are from Denmark, the Netherlands, France and Spain, which suggest that some may begin by travelling south-westwards. Furthermore, the only recoveries in Africa north of the Sahara are a German-ringed bird in Algeria and two probable British breeding birds from as far west as 7° W. in Morocco. The German and one of the British birds were recovered in spring, the other British bird in autumn. Thus on this meagre evidence (possibly biased by local human hunting techniques in the recovery areas) it seems that western European birds may travel south-westwards in autumn and north-eastwards in spring when north of the Sahara. Heim de Balsac & Mayaud (1962) showed that there is much passage movement along the western bulge of Africa, but it is not known if these are birds that winter in western Africa, or if they are *en route* to central or southern Africa. In view of the absence of unambiguous wintering records from West Africa and the currently available ringing results the second possibility is preferred. On the other hand, nominate *apus* is known in the northern autumn from localities throughout the northern part of the Ethiopian Region, and this can be explained by eastern breeding populations (of which very few have been ringed) also entering northern Africa on a south-westerly course. Further south in Africa in autumn these birds presumably turn southwards or even south-east.

Ringing recoveries show that the non-breeding range of north-western European *A.apus* includes south-western Zaïre, southern Malawi and central Rhodesia, but the returns are not sufficiently numerous to lead us to believe that these are the only areas concerned. Most of the recovered birds were killed by arrows or long staves used by Africans to beat birds out of the air when foraging low over open ground. African tribes vary greatly in their traditional food gathering activities and only certain tribes undertake these methods of bird hunting. For instance, beating birds out of the air with long staves seems to be confined to parts of Malawi (Benson (1952)) and eastern Zaïre (Prigogine (1966)). No tribe in intervening Zambia obtains food in this way. As Benson (1952) points out, swifts are very palatable. Thus the absence of ringing recoveries from Zambia, where *A.a.apus* is very numerous in its season, often feeding low over the ground on flights of emerging termites and other winged insects, is not surprising and does not indicate that ringed birds do not frequent the said territory.

The altitude at which recoveries have been made varies from about 300 to 3 000 m. above sea level, though most are from below *c.* 1 700 m. In Africa *A.apus* does not commonly frequent mountainous areas, since these are the haunts of the indigenous *A.barbatus* superspecies of similar size (Brooke (1970), and, presumably, because of some arcane ecological preference. It therefore occurs most regularly in rolling country without great changes in elevation, irrespective of the vegetation, which varies from the scattered grass tufts and bushes of the Kalahari Desert to the evergreen forests of the Congo Basin. *A.a.apus* is relatively scarce in the Kalahari, since that is the particular non-breeding range of *pekinensis*.

(ii) **Apus apus pekinensis** (Swinhoe), 1870: Peking, China

Whereas the nominate race breeds north and north-west of its non-breeding range *pekinensis* breeds entirely to the north-east. The "*Appendix*" shows that *pekinensis* enters Africa in the north-east, the earliest specimen being an example from the Blue Nile in the Sudan dated 10 August. As far as the limited evidence shows, *pekinensis* moves westwards north of the Equator, to turn south only on reaching about 15° E. After crossing the Cunene River at 17° S., they probably then swing south-east to their non-breeding range in and around the Kalahari Desert east to 28° E., where they are found in vast numbers and where nominate *apus* is relatively sparse, judging by the number of collected specimens (46 specimens of *pekinensis* examined as opposed to 19 of *apus* from South West Africa, Botswana and South Africa). The Kalahari Desert receives its normal rain in the northern winter. The earliest specimen from this region is dated 27 October and is from Mumpswe Pan in north-eastern Botswana (as noted in Brooke (1970) this specimen is not an example of *A.barbatus hollidayi* Benson & Irwin, 1960, described from the Victoria Falls, as previously reported) and the latest 6 March from Ootsi in south-eastern Botswana. The March record from Cameroun suggests that the return passage follows the same route. As most Kenya and Uganda specimens were taken in March, some birds may return somewhat south of the incoming route, since rain falls in the Sahel in the northern summer and in spring the more northerly parts of the Sahel are exceedingly arid. It should be noted that there is no material of *pekinensis* from the Shaba Province of Zaïre, Malawi, Moçambique, Tanzania or Zambia. The Aldabra specimen of this race is a juvenile and doubtless a vagrant. It may be that the birds which leave southern Africa in early February belong to the populations seen crossing Oman in eastern Arabia on 3 March (Smith (1969)).



MAP I

Sketch-map showing the localities of African-taken specimens of the European Swift *Apus apus*.

- ● *Apus apus apus* (Linnaeus) December and January
- ○ *Apus apus apus* Other months
- ▲ *Apus apus pekinensis* (Swinhoe) December and January
- △ *Apus apus pekinensis* Other months

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APPENDIX

Collection localities of *Apus apus* in Ethiopian Africa, including ringing recoveries provided by R. J. Dowsett, with the months of collection in brackets.

(*a*) **Apus apus apus**

Aldabra: Aldabra (9) (Frith 1974). *Angola:* Chingoroi (10, 11), Chipindo (10), Mulondo (11), 60 km. north of Sombo (3). *Botswana:* Ramutsamusa (11), 93 km. west of Nata (12), Lake Ngami (1), Mosu Springs (1), Nthane (1). *Cameroun:* Sangmelima (10, 1, 2), Ayos (4); Kumba (3, 5) and Victoria (4) (Serle (1950, 1954, 1965)). *Congo-Brazzaville:* Loukolela (8, 2) (Bouet (1961)), Boundji (9) and Makoua (10) (R.J.D.). *Ethiopia:* Anseba (7), Maragaz (7), Eritrea (8, 9), Gelamet (8), Senafe (4) (Moltoni & Ruscone (1940)). *Gabon:* Franceville (9) (Bouet (1961)), Batouala (4) (Brosset & Dragesco (1967)). *Ghana:* Fantee (2) (Grant (1915)), Mampong (2) (Bouet (1961)). *Kenya:* Athi (1), Mariakani (2); Lengototo (11) (Grant (1915)); Ngulia (12), Endau (1), Rapogi (1), West Pokot (6) (P. L. Britton *in litt.* on specimens in the National Museum of Kenya, Nairobi); Nakuru (3) (Van Someren (1922)); Mt Kenya (3) and Nanyuki (3) (Meinertzhagen (1937)). *Liberia:* Mt Nimba (4); Gedetabo (11) and Robertsport (11) (Bouet (1961)), Mt Nimba (2, 3) (C. W. Benson, *in litt.*). *Malawi:* Chinteche (3); Dedza (12, 1, 3), Golomoti (12), Mzimba (1), Vipya (2) (Benson (1940)); Mt Mulanje (11, 12) (Vincent (1934)); Mwanza (12), Palombe (12), Lilongwe (1, 2, 3) (R.J.D.). *Mali:* Niger River (8), Tombouctou (8), Ansongo (9), Taberreshat (9), Tazza (6) (Bouet (1961)). *Moçambique:* Funhalouro (3) (Pinto (1959)). *Niger:* Aïr (9); Aoudéras (4) (Bouet (1961)). *Nigeria:* Enugu (3) (Serle (1957)). *Rhodesia:* Bindura (11), Matopos (11), Nyamandhlovu (11), Selukwe (11), Singezi River (11), Umfuli River (11), Umvukwes (11), Dett (12), Glendale (12), Birchenough Bridge (1), Headlands (1), Sabi/Lundi Confluence (1); Fort Victoria (12) (R.J.D.). *Sierra Leone:* Birwa (7) (Bouet (1961)). *South Africa:* Giant's Castle (11), Modderfontein (11), Wakkerstroom (12), Britstown (2). *South West Africa:* "Quickborn", Okahandja (11, 1, 2), Namutoni (2); Aus (1) (Macdonald (1957)). *Sudan:* Bahr el Jebel (5). Darfur (8, 9, 6) (Lynes (1925)). Lake No (5) and Kaka (6) (Sclater & Mackworth-Praed (1919)). *Tanzania:* Korogwe (9); Ngua (11) (Sclater & Moreau (1933)), Marti (12) (Kittenberger (1959)), Njombe (12) and Sao (1) (Lynes (1934)), Meru Steppe (1) (Sjöstedt (1908)). *Uganda:* Malabigambo (2). *Zaire:* Luluabourg (9, 10, 1, 2), Avakubi (10), Kasenga (10), Medje (10), Dungu (2), Faradje (3, 4), Niangara (3). De Roo (1966) lists Ikela (7, 11), Bambesa (8, 3), Bionga, Ikela (8), Yokolo (8, 12, 1, 2), Bolanda (9, 1), Bolima (9), Gandajika (9), Kasansa (9, 12), Katombe (9), Yalokele (9, 2), Butembo (10), Ibembo (10, 4), Kabambaie (10), Kiota (10), Bionga, Kivu (11), Mt Kabobo (11), Kasaji (11), Basankusu (12), Bokeka (12, 1), Iyonda (12), Shabunda (12), Kalole (2), Kamituga (2, 3), Kampene (2), Yangambo (2), Bamania (4), Bokuma (4); Monieka (11) and Ikela (1) (Schouteden (1961)), Luluabourg (3) (Schouteden (1964)), Kasaji (3) (Schouteden (1965)); Dimbelenge (7), Mwilambongo (8), Mwanzangoma (9), Mweka (9, 1), Domiongo (1), Kakenge (1), Kikwit (1), Bakwa-Nzeba (2), Beto (2), St Joseph (2), Selenge (2), Idiofa (4), Kole (4), Lodja (4), Ngoso (6) (R.J.D.). *Zambia:* Luapula River (10), Mporokoso (10), Chilanga (11), Kalungwishi River (1), Kasama (2), Lundazi (2).

(*b*) **Apus apus pekinensis**

Aldabra: Aldabra (12). *Angola:* Chingoroi (10), Chipindo (10), Mt Moco (10). *Botswana:* Mumpswe Pan (10), Lake Dow (11, 1), 40 km south-west of Maun (12), 93 km west of Nata (12), 114 km west of Nata (12), 64 km north-west of Serowe (12), Lake Ngami (1), Artesia (2), 97 km west of Kanye (2), Sekhuma Pan (2), Tshane (2), 40 km west of Sekhuma Pan (3), 52 km west of Kanye (3), Ootsi (3). *Cameroun:* southern Cameroun (3) (Bates (1930)). *Congo-Brazzaville:* Pointe Noire (11) (C. W. Benson, *in litt.*). *Ethiopia:* Ethiopia (7, 8, 2) (Grant (1915)). *Kenya:* Lengototo (11) (Grant (1915)), Naivasha (3) (Meinertzhagen (1937)). *Rhodesia:* Nyamandhlovu (11); Matabeleland (11) (Grant (1915)). *Somalia:* Bolton Valley (9). *South Africa:* Kimberley (11), Excelsior (1), Vryburg (1), Potchefstroom (2); Transvaal (1) (Grant (1915)). *South West Africa:* Rietfontein (10), Ombiyamatemba (11), "Quickborn", Okahandja (12, 1), Okahandja (1); eastern Damaraland (10) (Grant (1915)). *Sudan:* Blue Nile (8). *Tchad:* Abéché (10) (C. W. Benson, *in litt.*). *Uganda:* Gondokoro (3); Victoria Nyanza (3) (Meinertzhagen (1922)). *Zaïre:* Avakubi (10, 2), Liviro (10), Medje (10), Beni (3), Faradje (3), Niangara (3); Buta (10) and Ibembo (10) (Schouteden (1963)).