



**West African Ornithological Society
Société d'Ornithologie de l'Ouest
Africain**



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R E V I E W

Hall, B.P. & Moreau, R.E. 1970. An Atlas of Speciation in African Passerine Birds. Pp. xv + 423. Foreward by Ernst Mayr, colour frontis-piece by Keith Shackleton, 441 major maps. London: Trustees of the British Museum (Natural History). 10½ x 15½ ins. £15.

Delegates to the 3rd pan-African congress in Kruger Park in September 1969 were given a tantalising preview of this monumental work, when Mrs. Hall read a paper on the recognition of superspecies in Africa. She anticipated publication in the immediate future, but in the event there was a frustrating lapse of practically a year before it was published in September 1970, just in time for the XV I.O.C. but, most unhappily, after the death of R.E. Moreau in May.

No two British authorities were better placed, nor formed a more fitting team, for the compilation of this treatise. Mrs. Hall's competence in the field of evolutionary interpretation of zoogeographical facts was established in her classical 'The francolins, a study in speciation' (1963), and of course Moreau's name is practically synonymous with the learned study of Africa during the Pleistocene, with its evolutionary consequences and ecological correlates, especially as they affect birds, culminating with his book 'The Bird Faunas of Africa and its Islands' (1966). During the last few years even casual visitors to the Bird Room at the Natural History Museum have been immediately infected with Pat Hall's enthusiasm for the project and have been pressed for opinions and information relevant to one or another speciation situation; alas, Reg Moreau's declining health has precluded his participation except in an essentially advisory - and, with his knowledge, therefore an extremely important - capacity.

The layout of the book is simple. Each page has a vegetation map of Africa south of the Sahara to a scale of 1 in. = 575 miles, in blue print, with localities for one or a few species plotted exactly in black ink and an accompanying text giving salient facts of similarity and difference in plumage and ecology of the species concerned, and their putative affinities. The standard map is 9 ins. wide which, together with the text up to 500 words and small world maps in the cases of species with extra-African distribution, necessitates a large page format. The book is of good-quality paper and weighs a formidable nine lbs. All of the 962 species of passerine birds in the continent are mapped and discussed, and are broadly categorised for the purposes of mapping as 'independent species (no close relatives), superspecies (allopatric immediate descendants from a common ancestor), and species-groups (closely-related and sympatric). Of these, the superspecies is the most meaningful taxonomic unit for systematists (and hence ecologists, ethologists, and ornithologists whose field interests extend beyond their regional horizon) to concentrate upon, and so it is the superspecies that the Atlas is specially designed to recognise and accentuate. It comes as a surprise to find that just about half (486) of the passerines belong to superspecies, with 300 more in species-groups, leaving only 176 'independent' species.

In some instances the page-maps bring together some unexpected bed-mates. For instance, the authors give their reasons for regarding the very different-looking sunbird Nectarinia (Cyanomitra) olivacea and N. (Anthobaphes) violacea as being not only congeneric but comprising a superspecies. At first sight the brightly coloured and patterned, long-tailed N. violacea of South Africa could not be more distantly related within the Nectarinidae with the drab N. olivacea. There are some

plumage similarities, although the real clue lies in the pattern of distribution of the two species. Clearly, Mrs. Hall has acquired an insight into relationships as revealed by range patterns alone. Of another sunbird pair unexpectedly associated as a superspecies she says "we are encouraged by its distribution to associate (Anthreptes gabonicus) with this superspecies (A. longuemarei)...". The authors are never categorical in putting forward such radical ideas. While their decisions may be bold, the discussion for each set of species is full of caveats and they repeatedly draw attention to the need for further field studies to settle what must otherwise remain matters of speculative opinion. It therefore matters little that there will inevitably be differences of opinion about some of the systematic conclusions reached (the reviewer personally suspects that the long-tailed shrikes Corvinella corvina and C. (Urolestes) melanoleuca are not even closely allied at the generic level, let alone represent a superspecies). In the main, the sequence of families follows Peters but, for obvious reasons, the generic and species order does not owe much to any of the standard previous arrangements except in a few groups already subjected to modern systematic revision (e.g. Moreau, 1960, on ploceine weaver-birds and Vaurie, 1953, on Muscicapa). A 23-page Table of scientific, and west, east and south African English names will be valuable for Bannerman-reared ornithologists not conversant with terminology more widely used elsewhere. The approach throughout is refreshingly practical (the parasitic whydahs, Vidua, mapped on pages opposite their estrildine hosts) and honest ("some superspecies can be regarded as "less super" than others"; "we have basically followed Peters' "Check-list" except that the weavers, in error, slipped in before the waxbills").

In large part the Introduction of over 8,000 words is an essay on the patterns and trends of speciation, and as an important contribution to understanding of vertebrate speciation on continental land-masses it is a pity that it will not achieve a much greater distribution than the sales of the book, which are bound to be limited by its very high cost. The discussion refers to a Table - most inconveniently 382 pages away - summarising the numbers of superspecies, species-groups and independent species by habitats and families, and the tabulation accompanying this review serves to clarify some of the author's figures which are not easy to evaluate in their table, and to bring some important conclusions to the readers' attention. The high number of species-groups with wide sympatry in lowland forest and of superspecies in the Acacia zone, and the low number of superspecies in woodland and montane environments, are all explained in the Introduction. One would nevertheless have liked a longer discussion on this summary Table, which in its present form is a thrown-away punch-line; for instance what significance attaches to the fact that the average numbers of species per superspecies in each of the five single vegetation zones lie between 2.0 and 2.5, when the averages for the three mixed pairs of zones are from 2.5 to 3.0 and for superspecies inhabiting more than two habitats 3.9? The explanation that comes immediately to mind confirms the independent hypothesis that speciation happens more speedily in new habitats than in isolates of the ancestral habitat.

The maps themselves plot the distribution of all African passerines in much better and more accurate detail than has ever been done hitherto. They represent a prodigious amount

	Montane non-forest	Montane forest	Lowland forest	Woodland	Acacia	Mixed	Totals	Percent of 962 African species
Species / superspecies	8	15	42	27	59	335	486	50.5
Species / species-groups, without wide sympatry	0	2	3	10	12	153	103*	
Ditto, with wide sympatry	0	8	49	5	3	55	300	31.2
Subtotal species / superspecies + species groups	8	25	94	42	74	543	176	18.3
Independent species	10	21	50	30	42	23	176	18.3
Total species	18	46	144	72	116	566	962	100.0

* Montane + lowland forests 58 19
 Forest + woodland 38 15
 Woodland + Acacia 100 33
 More than 2 habitats 139 36

of work on the literature and skin collections, although no attempt has been made to include all documented records for the continent, and a distinction between breeding and 'wintering' ranges is drawn only for the better-known intra-tropical migrants. An introductory map shows the thousands of localities plotted in the Atlas from which birds have been collected and indicates where the distribution maps are less accurate, through paucity of collecting localities (francophone West Africa, eastern Central African Republic, Bahr el Ghazal, northern Mocambique, eastern Angola). Bird distribution in relation to vegetation and related species is shown in most cases at a glance, but in others it is difficult for the eye to disentangle the symbols. Particularly careful study is required where two species with numerous point plots and extensive sympatry are represented by a horizontal and a vertical bar, and in such cases (e.g. Hirundo senegalensis, H. semirufa) the reviewer has found it expedient to outline the specific ranges on tracing paper. Used on their own, such outlines are only generalised statements of distribution and the system of point-plotting chosen in the Atlas is far more meaningful. Some symbols like small open or closed circles or triangles are more pleasing to the eye than others like bars, squares and asymmetric letters, and it is a pity that use of the latter was not restricted, especially since they are large and each represents about 40 miles on the ground. Nonetheless quite sufficient accuracy of mapping is achieved, and geographical locations with a particularly interesting situation demanding field investigation are readily apparent. "Here are unlimited opportunities" Mayr says in his Foreward, "for the African field ecologist". A selection of problems in Nigeria :

irundo smithii and H. nigrita (Map 3II). Dissimilar, but thought to be a superspecies. Study of the biology of nigrita ought to substantiate this.

Criniger (Trichophorus) calurus (Map 79). Are the fine-billed birds called mussumensis, living alongside typical calurus in Nigerian forests, specifically distinct?

Laniarius barbarus and L. erythrogaster. (Map 106). How abruptly does one give way to the other south-west of Lake Chad, or are they sympatric there?

Malaeonotus spp. (Maps 111, 112). Several potential Ph.Ds. in the unravelling of the thorny evolutionary and ecological problems implicit in the bush-shrike situation!

Myrmecocichla (Thammodaea) c. cinnamomeiventris (Map 132). Sympatric with M.c. coronata at Obudu? (see Bull. Nig. Orn. Soc. 3, 1968, p.49).

Neocossyphus poensis and N. (Stizorhina) finschi (Map 154, 155). Field study urgently required (see Bull. Nig. Orn. Soc. 1 (2), 1964, p.10).

Hypergeus albiceps (Map 229). Biology and affinities?

Eyelia prasinus (Map 241). Biology and affinities?

Pholidornis rufica (Map 279). Biology and affinities?

Batis senegalensis and B. orientalis (Map 261). Where in Bornu do their ranges meet?

Malimbus ibadanensis and M. erythrogaster (Map 346). Ranges west of the Niger need delimiting.

Vidua (orientalis) interjecta (Map 373) of the southern savannas of Nigeria. Determination of its host (Cytilia phoenicoptera?) and study of its voice etc. will help to clarify whether this is a distinct species.

Hypochoera complex (Map 388). What is the host of H. nigeriae?

(e.g. Lagonosticta rara, L. rubricata?)

For Nigeria, perusal of the Bull. Nig. Orn. Soc. would have provided many records extending or filling the ranges depicted in the Atlas. For instance, the given range of Trochocercus nigromitratus (Map 269) would be extended 300 miles west by inclusion of the several sight and netting records near Ilaro (Bull. 1 (1), 1964, p.7 and 4 (2), 1967, p.7). This is an unfortunate oversight, although complaint is less than generous in view of the enormous task of record extraction and plotting which has been undertaken (an invaluable bi-product for the ornithogeographer, incidentally, being Mrs. Hall's privately-circulated Gazetteer with 13 regional maps of the thousands of African bird-localities). It is greatly to be hoped that the Atlas will provide the stimulus for ornithologists in Nigeria to commence the detailed point-plotting of the ranges and seasonal distributions of their birds - selected genera or families would be a start.

Only those for whom birds provide aesthetic satisfaction without any intellectual stimulus will forego, by ignoring this book, the opportunity of greatly enriching their understanding of the African avifauna. It is a great pity, though, that many of the people who might the best benefit from it will be denied ownership by the extravagant price. One wonders, were the demand great enough, whether the publishers might consider a modestly-priced student version consisting of the Introduction, Table of superspecies, Table of English names, References and Addenda, with a couple of dozen or so maps to illustrate points made in the essay of speciation, and the option of purchasing for a shilling or two each maps dealing with such additional superspecies as particularly interest the student? Such a venture would serve ornithology in practice to the extent deserved by this truly erudite work.