

Florida Naturalist, 42(1):40 (January, 1969)

PARULA WARBLERS FEEDING IN SALT MARSH. At the tip of Alligator Point, Franklin Co., on 23 March 1968. W. Montgomery Hobbs and I were mildly surprised to see a flock of about 25 migrant Parula Warblers (*Parula americana*) busily feeding in the *Spartina* grass around a small salt marsh pool. With them were some Palm Warblers (*Dendroica palmarum*) and a few Myrtle Warblers (*Dendroica coronata*).

This was to my experience, quite a large number of Parula Warblers and was rendered still more novel by their unexpected choice of feeding cover. It is not unusual for migrating birds to feed in a habitat foreign to their usual haunts. However, with trees and bushes nearby, the choice of salt marsh seemed odd for this normally arboreal species. An abundance of insects may have made the site attractive, since all the birds were feeding most energetically, and with apparent success.

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Bird-Banding, 41(2):164-165 (April, 1970)

68. **Natural History of the King Rail.** Brooke Meanley. 1969. *North Amer. Fauna*, No. 67. 37 figs., 108 pp. (\$60 from Superintendent of Documents, Washington, D. C.)—Few if any members of the family Rallidae have been given extensive monographic treatment. Because of the secretiveness of most rails, facts regarding their life history and behavior are especially welcome. Therefore, the information about one of our larger species of rails contained in this publication is most valuable. One can hardly help but envy the author's intimacy with his elusive subject. He treats at length the ecology, breeding activity, feeding behavior and development of the King Rail (*Rallus elegans*), with shorter essays on systematics, migration, plumages, mortality, hunting, and trapping methods. The author draws to a great extent on his rich field experiences although he states early in the text that he has "attempted to bring all information on the King Rail together into a monographic treatment". Despite the patent merit of the work, it falls somewhat short of this goal. The omission of several pertinent and accessible

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references is forgivable, but more serious is the failure of the author to cite in the text or bibliography no less than four important papers of his own authorship, although information from them is usually to be found somewhere in the text. Thus one's modesty may prove a hindrance to future researchers.

Nevertheless, it is most gratifying that Meanley has assembled his extensive knowledge of this bird and presented it here. Repeatedly emphasized is the King Rail's adaptability to food, habitat, and other environmental factors. To anyone accustomed to thinking of rails as sedentary birds, the 1,000 mile flight of one banded King Rail may seem remarkable (p. 13). Students of behavior will doubtless be amazed or amused at the accounts of incubating rails that progressively raised their nests above rising water levels by adding more nest material (p. 60). Also of interest are the descriptions of calls given by night-migrating birds. Under systematics, Meanley briefly summarizes some of what is known about the interactions between King and Clapper Rails (*R. longirostris*) and adroitly avoids coming to any conclusions in this complex matter by starting a new chapter—unquestionably a wise move. The few errors of omission are far overshadowed by the wealth of material presented and this publication is certain to become a basic reference for anyone interested in the biology of rails.—Storrs L. Olson.

Ibis, 112(3):403-404 (July, 1970)

ADDITIONAL REMARKS ON THE SEQUENCE OF PASSERINE FAMILIES

SIR,—While I hesitate to add to what is possibly becoming a sterile controversy over the sequence of families of higher passerines, I feel that R. E. Cook's (1970, 'Ibis' 112: 118-119) review of this debate requires further comment. In his consideration of the "crows-last" vs. the "finches-last" arrangements, Cook points out that neither arrangement is based on satisfactory biological evidence, but does not give us any insight as to which arrangement might be preferable nor propose any alternatives. Granted, any decision made within our present state of knowledge is bound to be arbitrary to some extent. Nevertheless, when confronted with a choice of the two arrangements above, it seems to me that the Wetmore sequence of "finches-last" has considerably more merit. With the exception of the taxonomically dubious character of mental capacity, the evidence that is available indicates that the corvid assemblage is a relatively unspecialized group that is anatomically closer to passerine forms almost universally considered low on the evolutionary scale (e.g. Wetmore 1957, 'Condor' 59: 207-208).

There is a perhaps useful parallel to be drawn between the debate over the sequence of families of higher passerines and that over the sequence of orders in the Mammalia. As most readers may recall, the primates by virtue of their mental capabilities were long placed as highest of the mammals. This same character ("intelligence") has been used by proponents of the crows-last sequence of passerines. It was later conceded by most mammalogists that the primates, brainpower notwithstanding, constituted a group of relatively unspecialized animals not too far removed from the basic mammalian insectivore stock. Despite the stigma of having *Homo sapiens* among the primate numbers, the order was accorded a lower position in the mammalian hierarchy, thereby

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making the subjective, and difficult to assess, character of intelligence a less important factor in the evaluation of major taxa. In their stead, at the head of the list of mammals have been placed the ungulates. These hoofed animals consist of a number of structurally highly specialized, unrelated groups that evolved and multiplied in response to the development of large areas of grassland during the Tertiary. Likewise, the finch-like birds are composed of a multiplicity of species in several more or less unrelated groups (fringillids, emberizids, ploceids, estrildids, etc.). These forms also presumably arose, specialized, and radiated as a result of the increasing importance of the Gramineae in the Tertiary flora.

This is not to say that there may not be some other more advanced group among the Oscines than the finch-like lines, though no evidence exists in support of this contention either. However, the generalized corvids do *not* appear to be a good choice for the most advanced group, and the finches are a very reasonable alternative.

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1 April 1970.

55. A study of seedsnipe in southern South America. G. L. Maclean 1969, *Living Bird*, 8: 33-80.—This paper is the result of four months of observation of the Lesser Seedsnipe (*Thinocorus rumicivorus*) and the Gray-breasted Seedsnipe (*T. orbignyianus*) in Chile, Argentina and Tierra del Fuego. Most of the observations were made on the former species. Much of the previous work on this little known family is assembled here and is considerably augmented by the author's information.

Seedsnipe were found to inhabit open, sparsely vegetated terrain where they feed solely on vegetable matter (seeds, shoots, leaves). Water is apparently obtained from succulent plants and no birds, adult or young, were seen to drink. The breeding season is in the summer. Males defend a territory and sing from an elevated perch. Nests are a scrape in the ground lined with loose organic matter; males lack brood patches and only the female incubates. When leaving the nest the female covers the eggs with the nest lining. The incubation period is about 25 days and the young leave the nest together a few hours after hatching. Chicks soon feed by themselves and are not fed by the parents. Distraction displays may be given by females suddenly flushed from the nest and by males guarding the chicks. At night seedsnipe were found roosting in individual scrapes in the ground, usually in groups of four to eight. Two species of hawks accounted for the only observed predation.

Maclean is known for his extensive field studies of other little-known birds, especially the sandgrouse (Pteroclididae). Part of the impetus for his study of seedsnipe was to enable a comparison of this family with the sandgrouse. In addition to his valuable behavioral studies, Maclean has diverged into the field of systematics. In one paper (*J. Ornithol.*, 108: 203-217, 1967), which received undeserved praise in this journal (*Nice, Bird-Banding*, 39: 67, 1968), he concluded on the basis of behavior and egg-white proteins that the Pteroclididae "are not at all closely related . . . to the doves, but rather to the Charadriiforms" and that anatomical similarities between the sandgrouse and the doves "can be interpreted as the results of convergent evolution . . ." (p. 108). This conclusion is by no means acceptable to many taxonomists and I would like to point out the recent writings of Stegmann (*J. Ornithol.*, 109: 441-445, 1968; *Zool. Jb., (Syst.)*, 96: 1-51, 1969) as being quite in opposition to the views of Maclean. Even the most perfunctory comparison of skeletons of pteroclidids will disclose that, element

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for element, they are scarcely distinguishable from columbids and that both differ significantly from any Charadriiform type, including the Thinocoridae. A number of other characters linking the doves and sandgrouse have been noted by several early authors. It is inconceivable that this multitude of characters is attributable to convergence. The affinity of the Columbiformes with the Charadriiforms is not a new idea. Gadow (Bronn's *Klassen und Ordnungen; Vogel, II Syst.*, 1893) long ago suggested that the Charadriiformes consist of two subgroups, the Laro-Limicolae and the Pteroclo-Columbae, and today this remains as the most realistic systematic treatment. Within this grouping there is little question but that the position of the Pteroclididae lies much closer to the Columbidae than to other existing groups and that any resemblance of the seedsnipe to the sandgrouse is due to convergence. "Es ist daher auch in dieser Hinsicht am wahrscheinlichsten, das die Flughühner einen Seitenzweig der Tauben bilden. Das umgekehrte wäre gar nicht denkbar." Stegmann (1968: 443).—Storrs L. Olson.

Bird-Banding, 41(3):261 (July, 1970)

62. *The Life of the Emu*. Maxine Eastman. 1969. Angus and Robertson, Sydney. 37 shillings, 6 d. (\$1.53 U. S.).—This slim volume is essentially a picture-book; but let that not be taken as a point of derogation. The 16 colored plates, 89 black and white photographs, and 12 line drawings give the viewer an exceptionally good idea of the attitudes and environment of the Emu (*Dromiceius novaehollandiae*). Especially exquisite are the four color plates of habitat (pp. 36-37).

The text is minimal and is written in popular style with no references. Throughout it are points with which one might take issue. For instance, on page 5: I doubt seriously that the pitiful vestiges of wings possessed by Emus could materially aid in stabilizing a hundred-pound bird on the run; nor by any stretch of the imagination can Emu feathers be considered "completely primitive," as the author asserts. To anyone interested in comparative ethology of ratites, the text will provide little satisfaction. Courtship and nesting behavior receive the most lengthy treatment but not in depth. The chapter entitled "their territory" treats previous abundance and decline and not territoriality at all. There is a chapter on the interaction of Emus and aborigines, illustrated with aboriginal rock paintings of Emus. Readers of the Sauer's (Sauer and Sauer, *Auk*, 84: 571-587, 1967) paper on Ostrich (*Struthio camelus*) maintenance activity should note the colored plates on p. 38 that show the open-mouth threat display and yawning by Emus. Neither of these activities are discussed in the text or even in the figure caption in the case of the latter.

Though much remains unsaid here concerning the life of the Emu, to anyone with even a remote interest in ratites the photographs in this book will be well worth looking at.—Storrs L. Olson.

FOLK, R. L. 1969. Spherical urine in birds. *Science*, 166: 1516-1519.—Using a high-powered polarizing microscope, Folk found all the samples of bird urine he examined to consist of spherical solids. These were at least partially soluble in water and rapidly soluble in weak acids, indicating that they were not uric acid as has been universally believed previously. X-ray spectrometry, ultraviolet spectrophotometry, and electron microscopy confirmed that the urine was not uric acid but did contain a urate radical. The author attributes past misidentification of bird urine as uric acid to the fact that most chemists suspend substances in water and acidify them before analysis. He leaves it for the organic chemists to determine just what the urine really is, and, as he points out, if it is not uric acid, many evolutionary and physiological theories will be in need of reevaluation. For

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example see Schmidt-Nielsen and Kim (*Auk*, 81: 160, 1964), "It has generally been assumed that the bird kidney is incapable of producing such concentrated urine (4.5 times plasma osmotic concentration) because extensive water reabsorption would cause precipitation of uric acid in the uriniferous tubules." Unfortunately, Folk refers to the species he worked with as "pigeons, eagles, magpies, sparrows, sea gulls," etc., with no reference to binominals. Nevertheless, if he is correct in his findings, much subsequent research and many new ideas may result from this short but potentially very important paper.—S.L.O.

81. Genetics of melanism in the Fantail *Rhipidura fuliginosa*. G. Caughley. *Notornis*, 16: 237-240.—Reanalysis of data by Oliver (*New Zealand Birds*, 1955) shows that melanism in the South Island Fantail is caused by a single dominant allele and is not recessive to the Pied allele as thought. Heterosis and panmictic mating hold the allele at a frequency of about 7% in the population, thus causing the frequency of melanistic birds to be about 13%. The hypothesis by Oliver that the pied and black forms are "semi-species" is inconsistent with this clarified interpretation of the genetics of melanism in the Fantail.—Jack P. Hailman.

82. Convergence between jacamars and bee-eaters. C. H. Fry. 1970. *Ibis*, 112: 257-259.—This note discusses convergence in some behavioral and ecological features, especially those associated with feeding. The diet of both families consists of about 80-85 percent Hymenoptera. Both families also nest in holes, have similar clutch sizes, incubation and fledging periods, and lack pronounced sexual dimorphism in plumage. The causal factors of this convergence have not been adequately explained, but Fry suggests that the social organization is probably similar in the two groups.—Joel Cracraft.

83. Independent evolution of the Dodo and the Solitaire. R. W. Storer. 1970. *Auk*, 87: 369-370.—This unhappy little note contains several ideas that I hope will not gain credence with the ornithological public. Storer asserts that because the Dodo of Mauritius and the Solitaire of Rodrigues are structurally different and are found on widely separated islands that would preclude rafting of a large flightless bird, the Dodo and the Solitaire were derived independently from flying ancestors and should be accorded the status of separate families. He speculates that if and when remains of the large "didine" bird(s) of Reunion (as yet known only from old contemporary reports) are found, that "they will prove to be unrelated either to the Dodo or the Solitaire," and that they may have been "derived from rails or some group other than pigeons."

He goes on to cite the work of Luttschwager as proposing the descent of the Dodo and Solitaire from rails. I have examined Luttschwager's papers on this subject (*Zool. Anzeiger*, 162: 127-148, 1959 and "Die Drontevogel" in Die Neue Brehm-Bucherei series, 1961) and find them less than convincing. The characteristics of Dodos and Solitaires that Luttschwager gives as differing from typical doves and as resembling flightless rails are mostly those that may be attributed to flightlessness and are not useful indicators of relationship. Nowhere does he offer convincing evidence that the didine birds are derived from rails and indeed this would be most difficult to do since they are *not*. The skeletal elements of the Dodo and Solitaire that I have examined are so markedly columbiform that to postulate any other origin seems preposterous to me. Even the vestigial wing bones retain a remarkable resemblance to columbids, despite their loss of function.

As to the "separate evolution" of the Dodo and Solitaire, this is true for at least part of their history, as they are different birds found on different islands. But bear in mind that although pigeons and doves have reached many isolated islands, nowhere save the Mascarenes, have they differentiated into large flightless forms. It is not unreasonable to assume that the Dodo-like birds of the Mascarenes were derived from a common columbiform ancestor which colonised all three islands before having lost the ability to fly and that these species are more closely related to each other than to any other known taxa. Contrary to Storer, I would be most surprised if the didine bird of Reunion proves to be anything other than columbiform.—Storrs L. Olson.

84. Genetic polymorphisms of esterase isozymes of the plasma in two species of doves, their hybrids and backcross hybrids, and in other species of Columbidae. L. G. Boehm and M. R. Irwin. 1970. *Comp. Biochem. Physiol.*, 32: 377-386.—Electrophoresis of plasma esterase shows that there are nine phenotypes in *Streptopelia senegalensis* and one in *S. risoria*. Separate alleles are postulated for each pattern; dominance relationships are not known. Nineteen other species of columbids were examined and each could be distinguished on the basis of esterase pattern.—Joel Cracraft.

63. The genus *Sarothrura* (Aves, Rallidae). S. Keith, C. W. Benson and M. P. Stuart Irwin. 1970. *Bull. Amer. Mus. Nat. Hist.*, 143: 1-84. \$3.50.— On the African continent there is only one truly successful genus of rails; this being the genus *Sarothrura*, containing the minute crakes known sometimes as "flufftails". Like most rails, these are secretive in disposition and knowledge of their taxonomy, distribution, ecology, and habits has been sparse, scattered, and largely confusing. This situation has been greatly rectified now and the information is summarized and considerably augmented in usable fashion in the paper reviewed here. The authors' thoroughness is indicated by their examination of virtually every specimen of *Sarothrura* in existence, which, among other things, has enabled them to compile excellent range maps for each species, showing actual specimen localities. One also feels confident that most, if not all, pertinent references have been consulted and included. Another fine feature of the paper which adds much to comprehension and aesthetics is the two-page color plate depicting dorsal views of both sexes of all nine species in the genus; doubly useful in that in almost no single museum are there specimens of all nine available for comparison at a glance.

A number of taxonomic changes from Peters' Checklist have been made, mostly lumping of subspecies. On the specific level, the authors remove *ayresi* from *Coturnicops* and place it in *Sarothrura*, while combining *S. antonii* with *S. affinis* (= *lineata* in Peters). A peculiar sort of synonymy is given in Table 5, which assigns the various names used for populations of *Sarothrura* to currently recognized species, although there is no indication here of which subspecific names are in good standing. The spelling *lugens* is not included in this list nor is there any reference to grounds for its emendation (no doubt justifiable) to *lugens*. Each species is treated separately and in each account is included what is known about distribution, habitat, food, breeding, subspecies, movements, voice and behavior, in addition to range maps and tables of measurements. Among the original contributions of the paper are the detailed (almost painfully so in some cases) descriptions of voice, including sonograms of 6 of the 9 species — a notable accomplishment when dealing with such a recondite group. Aside from voice, however, the data on behavior are aggravatingly scanty (no fault of the authors) and information on displays, courtship, etc. is practically nil. There is no attempt made to explain the striking sexual dichromatism (an exceptional condition in the Rallidae) nor to explain such anatomical peculiarities as the conspicuous, fluffy tail of certain species. The authors cite ecological differences to explain all but one instance of sympatry. In the exceptional case they theorize that *S. rufa* and *S. lugens* are in direct competition to the detriment of the latter. The terminal section of the paper contains a "probable phylogeny" which the authors readily admit is "advanced with considerable diffidence." Four species groups are recognized in the genus, one of which (*ayresi-watersi*) in my opinion is almost certainly artificial. I disagree with much of this phylogeny and there are relationships outside the genus that the authors have not discussed which shed considerable light on the matter. I will hope to say more about this in a later paper, a task that I would have been unwilling or perhaps unable to perform without this clarifying and much needed summation of the genus and for which the authors are to be commended.—Storrs L. Olson.

