preserving the California Quail which is disappearing in spite of all efforts made in its behalf.

After showing that conditions of food and shelter have not changed and that natural enemies such as predacious Hawks, foxes, etc., have decreased equally as fast as the Quail, if not more so, he seeks for some other cause and we think has found it in the increasing lack of available water. Young Quail in the downy stage must have water within walking distance which Dr. Grinnell estimates as within 400 yards, and when every possible source of water is being piped to irrigate thirsty ranches and even seepage is being caught by underground pipes scarcely a drop is left available for the little birds which probably die at an early age. As Dr. Grinnell says "water supply available in the dry season is a factor delimiting not only human but certain other vertebrate populations in the arid southwest" and if the humans are going to take it all the Quail and probably other species would seem to be doomed.—W. S.

**An Outline of Bird Study.**[1]—The General Biological Supply House of Chicago is issuing a series of scientific pamphlets "each of which is prepared by a scientist whose training lies in the special field presented." One of these recently issued is entitled 'An Outline of Bird Study,' and is by C. Blair Coursen. It consists of brief accounts of the principal activities of the bird student with a series of questions or "study suggestions" following each, and in an appendix a list of books, periodicals, ornithological associations and bird study material with addresses where information may be obtained.

The chapter headings are: The Value of Bird Study—covering economic ornithology; How to Study Birds—field study, recording data etc; Birds in Nature—distribution, migration and nesting; Birds in the Class Room—classification, structure and molts; Activities for the Individual Bird Student—bird houses, feeding and photography; Activities for the Bird Class—winter feeding, sanctuaries and bird banding.

The pamphlet seems to be an admirable introduction to the study of birds and should be especially useful to beginners who have no one at hand to help them.—W. S.

**Recent Papers by Dr. Chapin.**[2]—Dr. Chapin has presented a popular account of his late expedition to Uganda, central Africa, in 'Natural History' which is exceedingly interesting reading.

Of a more technical character is his review[3] of the African Cookoos of the genus *Cercococcyx*, in which is described a new species from Ruenzori

[1] An Outline of Bird Study. By C. Blair Coursen, 1928. General Biological Supply House, Chicago, Ill., pp. 1–47, numerous illustrations. Price $1.00, $10.00 per dozen.

[2] Ruenzori from the West. By James P. Chapin. Natural History, XXVII, No. 6, pp. 615–627.

[3] The African Cuckoos of the Genus *Cercococcyx*. By James P. Chapin. Amer. Mus. Novitates No. 313. May 16, 1928, pp. 1–11.

*C. montanus* (p. 6) and a description[1] of a new Waxbill, *Estrilda nigriloris* (p. 1) from the Belgian Congo.—W. S.

**Lowe on the Phylogeny of the Ostrich.**[2]—In this paper Dr. Lowe presents the results of his extensive studies of the Struthious birds including the structure of their feathers, bony skeleton, muscles etc. as well as a consideration of the distribution of the group both in time and space.

Without considering his points in detail we may state briefly the author's conclusions which are that instead of having degenerated from a flying ancestor the Ostrich-like birds represent a perfectly natural group descended from some common ancestor which left the main avian stem before flight had been attained and that any degeneration or specialization that has taken place in the Ostrich forelimb has been degeneration from a primitive non-volant sauropsidan forelimb and not from a volant-carinate wing. He considers that the characters which constitute the general make up of the Struthiones are almost invariably primitive and indicate an early phase in the evolution of the true bird and to regard them as degenerate or retrogressive is not justified by the evidence; also that the plumage of adult Struthiones is prepennal down and has not reached a more advanced stage than that of the downy chick of the common fowl.

The *Archaeopteryx* he considers left the avian stem at an earlier (more reptilian) stage than did the Struthiones, while the Tinamous diverged at a very much later epoch. Instead of considering, as some have done, that the several groups of Ostrich-like birds—Emus, Rheas, Kiwis, etc., left the main avian line at successive periods Mr. Lowe thinks they all descended from a common ancestor and would regard them as forming a subclass sharply differentiated from all other birds.

Mr. Lowe's paper is one of extreme interest and his conclusions seem to be entirely warranted by the evidence which he produces.—W. S.

**Annotationes Ornithologiae Orientalis.**[3]—Under the above title Mr. Toku T. Momiyama has issued the first number of a journal to be devoted to ornithology of the far east (pp. 1–141). The papers in this issue are all by Mr. Momiyama and consist of "Some New and Unrecorded Birds from Japanese Territories, I.," "On *Cynchramus yessoensis*" and "Systematic Lists of the Birds of Quelpart Island." While the articles are mainly in Japanese the 25 new forms described in the first paper are reprinted in English.—W. S.

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[1] A New Species of Waxbill (*Estrilda*) from the Southeastern Congo. ibid. No. 308, April 24, 1928, pp. 1–3.

[2] Studies and Observations Bearing on the Phylogeny of the Ostrich and its Allies. By Percy Roycroft Lowe. Proc. Zool. Soc. London, 1928 (April 16), pp. 185–247.

[3] In aedibus Athenaei Ornichologici Momiyamici 1146 Sasazka, Yoyohata-mati, Suburb, Tokyo. Dec. 27, 1927.