

from the enemies surrounding a terrestrial nursery. The third and last stage is represented by the protective coloration, a device which has been almost universally adopted by nidifugous birds, owing to its greater effectiveness."

The Hoatzin is taken as the main clew to the problem. In the structure of its wing "we have a revelation of a phase of bird-life hitherto unsuspected; inasmuch as its peculiar developmental stages, each with its period of functional activity, enable us to interpret the hitherto meaningless and puzzling characters seen in the wing of the fowl and turkey, and their allies. These constitute well-nigh invincible proofs of an earlier and universal arboreal existence, extending back to the time of the earliest known bird archæopteryx. Certainly the skeleton, especially the wing, lends the strongest support to this view. This carries us further back still, and suggests the conclusion that the reptile stock from which the aves are descended was probably also arboreal."

He explains that infant mortality could be reduced (1) by depositing the eggs on the ground, or (2) curtailing the activity of the young, the latter being produced by reducing the amount of food-yolk and inducing an earlier hatching period. But space will not permit us to give a synopsis of his many ingenious suggestions.—J. A. A.

Strong on a Case of Abnormal Plumage.¹—The case here described is that of an abnormal condition in the juvenal plumage of a hybrid between the Common Ring Dove (*Turtur risorius*) and the Red Ring Dove (*T. humilis*) of China, in which the remiges, rectrices and contour feathers were crossed by a subterminal band of paler color, in which the barbules were imperfectly developed. "It is significant," says the author, "that these abnormalities occur at uniform distances from the distal ends of the feathers throughout the whole plumage, and it seems reasonable to conclude that the conditions responsible for the abnormalities were constitutional, and affected the germs of all the feathers simultaneously, though in three different degrees of intensity." The abnormalities are ascribed to malnutrition at the time the juvenal plumage was developing. The character of the malformation is described in detail and illustrated with figures.—J. A. A.

Trowbridge on 'The Relation of Wind to Bird Migration.'²—In 'The Auk' for July, 1895 (XII, pp. 259-270), Mr. Trowbridge published an interesting paper on 'Hawk Flights in Connecticut.' The present paper contains further observations on the migrations of hawks in southern Con-

¹ A Case of Abnormal Plumage. By R. M. Strong. Biolog. Bull., Vol. III, No. 6, pp. 289-294, with 6 text figures. Nov. 1902.

² The Relation of Wind to Bird Migration. By C. C. Trowbridge. Amer. Nat., Vol. XXXVI, 1902, pp. 735-753, with 3 maps.