

committee of award from among the several essays offered. It will be printed in an early issue of *The Condor*.

We hear that Mr. E. R. Kalmbach of the U. S. Biological Survey has been working on the problem of controlling blackbirds in the Imperial Valley. These birds have responded very favorably to the irrigation and cultivation of that territory; their numbers are now so great that damage to certain crops is reported to be heavy.

After five years of active field work in the state of Washington for the U. S. Biological Survey, Mr. George G. Cantwell, of Puyallup, has resigned, as of date January 1, 1922. During a good deal of this time Mr. Cantwell has served as assistant to Dr. Walter P. Taylor in the latter's vertebrate survey of the state.

COMMUNICATION

PROBLEMS CONCERNING DESERT BIRD-LIFE

Editor *THE CONDOR*:

I have had opportunities in the last few years of studying the ornithology, and the fauna generally, of some of the deserts of the Old World. I have come to the conclusion that the desert birds are particularly worthy of study from an ecological point of view because they live in an environment which has been unspoiled by man and because their reactions to their peculiar environment are, in some cases at any rate, very easily observed. I have also come to the conclusion that the accepted interpretation of some of the most obvious features of desert life requires revision. May I appeal to your readers to send me any facts, or any ideas, which bear on such problems as the following, so that I may compare our Old World fauna with yours. Eventually I hope to publish a summary of my results.

1. The surface of the desert soil heats up to a very high temperature in the daytime and cools very rapidly at night. Do birds which nest on the ground in American deserts commence incubation as soon as the first egg is laid? Have you any birds which lay right out in the open without the shelter of a bush, as is done by Coursers, Stone Curlew and Sand Grouse with us? Some of these birds lay in May, or even in June and July, at the very height of summer, and it is difficult to see how the eggs avoid being cooked if incubation is not continuous from the date the first egg is laid.

2. I should be grateful for information as to the water supply of the chicks of desert birds. Our Sand Grouse fly a very great dis-

tance to water, once a day, and the males saturate the breast feathers with water and bring it back to the chicks, who drink from the breast. We know nothing about the water supply of other desert chicks; but one presumes that their requirements are high, because only by evaporation can they keep their bodies cool.

3. The prevalent color of desert birds is of course roughly that of their environment; this is true also of their chicks. I am inclined to think that it is not true of the eggs. The egg of such a bird as the Stone Curlew, or Courser, is of the familiar type characteristic of the ground nester, but it is not specialized in the direction of being paler or less blotchy. It is in fact a typical ground breeder's egg, not a typical desert breeder's egg. What do American oologists say?

4. We regard the sandy color of desert birds as protective, and so it is, under certain circumstances. With us, many desert birds are running about feeding in early morning and late evening; the sun is low and they cast long black shadows and are quite conspicuous. In these cases the protection must at any rate be very incomplete. Then, again, our Eagle Owl is a powerful bird, nocturnal, and found over a large part of western Asia and Europe and North Africa. Many subspecies are described, and the desert ones are all pale and more or less sandy in color. Of what possible value is this to the bird? Does the theory of protective coloration fit the facts as regards birds in North American deserts? Have you any species of birds in America which produce red forms on red desert, gray on gray desert, pale on sandy desert, etc?

I have trespassed too far on your space already. If any American ornithologist is good enough to write to me, to discuss these problems or furnish me with facts, I shall be extremely grateful. Would my correspondents remember that I am quite ignorant of American birds, and furnish scientific names, and state even the obvious facts which *you* all know?

I remain, Sir, yours,

P. A. BUXTON,

Government Laboratory, Jerusalem, Palestine, February 27, 1922.

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

FEBRUARY.—The regular meeting of the Northern Division of the Cooper Ornitholog-