

QUISCALUS QUISCULA IN LOUISIANA.

BY FRANK M. CHAPMAN.

THE ENLIGHTENING series of grackles from Avery Island, southern Louisiana, which Mr. E. A. McIlhenny presented to the American Museum of Natural History some years ago, shows, as I have already reported,¹ that the prevailing form of that region is not the Florida Grackle (*Quiscalus quiscula quiscula* Linn.), but Stone's Grackle (*Quiscalus quiscula stonei* Chapm.). Mr. McIlhenny now sends us an additional lot of birds, collected during the past breeding season, which confirm the identity of the southern Louisiana Grackle and for the first time give us a station on or near the boundary of the breeding range of pure *æneus* in that state. The facts are so definite that they form a valuable contribution to our knowledge of the range and relationships of these birds and, pending further studies, they seem worthy of independent publication.

The birds were collected in May by W. E. Nolan, under Mr. McIlhenny's direction, from the New Orleans region westward to Lake Arthur and northward to Baton Rouge, Bunkie and Boyce. They may be identified as follows: Chef Menteur, 10 miles east of New Orleans, Florida Grackle, 1; intermediate toward *stonei*, 2. Isle Bonne, 10 miles south of New Orleans, Florida Grackle, 1; intermediate towards *stonei*, 2. Morgan City, 65 miles southwest of New Orleans, Florida Grackle, 2; *stonei*, 4; intermediates, 3. Abbeville 60 miles westward of Morgan City, *stonei*, 3, intermediate toward Florida Grackle, 1. Lake Arthur, 35 miles west of Abbeville, *stonei*, 1; intermediate toward Florida Grackle, 1.

Southern Louisiana, therefore, as far as our material goes, is an area of intergradation between the Florida Grackle and Stone's Grackle with the latter increasing in numbers, relatively, as we go westward. We have yet to learn where *æneus* first appears in this direction.

Northward, the first station from which we have specimens is Baton Rouge, on the east bank of the Mississippi, 50 miles north of Morgan City. Eight specimens previously recorded from this locality showed it to be a point of intergradation between *stonei* and *æneus* with the intergrade (*ridgwayi*) as the prevailing form. Mr. Nolan's specimens confirm this condition; four of them are *stonei* and two *ridgwayi*, making the record from this locality stand: *stonei*, 5; *ridgwayi*, 6; intermediate toward *æneus*, 2, *æneus*, 1.

It is evident that we are now nearing the range of *æneus* and from our next station, Bunkie, 70 miles northwest of Baton Rouge and an equal distance north of Abbeville, 8 specimens are pure *æneus* with no trace of

¹ The Auk, Jan. 1935, pp. 26, 27.

that variation which characterizes the bird we have been wont to call the 'Purple' Grackle.

Mr. Nolan continued his explorations to Boyce, 45 miles northwest of Bunkie. Here he secured 10 male and 10 female Grackles, all typical Bronzed Grackles. From this point, if we should continue our journey northward to Great Slave Lake, westward to the Rockies, and southwestward to the valley of the Rio Grande, we should find only Bronzed Grackles. But if we should go from Bunkie to Baton Rouge we should find that within a distance of 70 miles the intergradation of *æneus* with the 'Purple' Grackle is so complete that only one of fourteen birds is typical of the first-named form. Here is food for thought.

The intergradation of these birds within a surprisingly short distance has long been known. But from no other area have we data showing this passage from one form to the other in so narrow an area and so definitely. As far as I am aware, there are no topographic or climatic conditions in the region between Baton Rouge and Bunkie which would account for their intergradation through environmental factors, or explain why their ranges should meet in this area.

As I have stated in an earlier paper on the relations of these birds, the evidence indicates conclusively, to my mind, that they intergrade by hybridization wherever their breeding ranges adjoin, and the product of this hybridization, whether in Louisiana or Long Island, is always *ridgwayi*. These new data support this belief.

But, as I have before remarked, to hybridize, these birds must come together, and to come together they must have been apart. When we find the ranges of the Bronzed and 'Purple' Grackles separated by the Alleghenies we have a topographic reason for existing boundary lines. But there are no mountains between Baton Rouge and Bunkie. Why then should the ranges of these two birds meet there? Why did not *æneus* range farther east or *quiscula* farther west? To answer these questions we should know where each form started from and the conditions controlling its extension of range.

What prevented *æneus* from ranging eastward in southern Louisiana over the route which the Boat-tailed Grackle, for example, has apparently followed? Accepting as a working hypothesis the theory advanced in my recent article ('The Auk,' Jan., 1935, p. 21) that during the last Glacial Period the Purple Grackle was confined to Florida, the obvious answer is because *quiscula*, in its post-glacial range extension, was already in possession of the ground.

Similarly, we may surmise that *stonei* did not extend its range into northern New York and northern New England because *æneus* was already established there.

If, however, it should be said that *stonei*, a geographical representative of the Florida Grackle, normally reaches the northern limit of its range in southern New York and southern New England in the Carolinian Fauna, so also we may say that *æneus* is of southern origin and no better suited to life in northern latitudes than is *quiscula*. Admitting this, the form to arrive first would be the one to occupy the territory.

All of which is speculation, but speculation inspired by such facts as these Louisiana Grackles contribute toward the solution of our problem. Given sufficient contributions of this nature and some day speculation may become interpretation.

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