

Langd, believed by Mr. Ridgway (see this Bulletin, Vol. V, p. 237) to be a hybrid between *Helminthophila pinus* and *Oporornis formosa*, may be counted as a third example of like character, to say nothing of the several probable cases cited by Mr. Brewster in the paper above referred to by Mr. Townsend.—J. A. ALLEN.]

NOTE ON EXCEPTIONS TO THE LAW OF INCREASE
IN SIZE NORTHWARD AMONG NORTH AMERICAN BIRDS.

BY J. A. ALLEN.

The law of increase in size northward among North American birds and mammals is so much the rule that the exceptions to it are conspicuous from their rarity. In considering some years since the few strongly marked examples among mammals of the converse of this law I was led to formulate the following propositions:

“(1) *The maximum physical development of the individual is attained where the conditions of environment are most favorable to the life of the species.* Species being primarily limited in their distribution by climatic conditions, their representatives living at or near either of their respective latitudinal boundaries are more or less unfavorably affected by the influences that finally limit the range of the species. . . .

“(2) *The largest species of a group (genus, sub-family, or family, as the case may be) are found where the group to which they severally belong reaches its highest development, or where it has what may be termed its centre of distribution.* In other words, species of a given group attain their maximum size where the conditions of existence for the group in question are the most favorable, just as the largest representatives of a species are found where the conditions are most favorable for the existence of the species.

“(3) *The most ‘typical’ or most generalized representatives of a group are found also near its centre of distribution, outlying forms being generally more or less ‘aberrant’ or specialized. . . .*”*

*“Geographical Variation among North American Mammals, especially in respect to size.” Bull. Geol. and Geogr. Surv. Territories, Vol. II, No. 4, July, 1876.

The various families of North American Mammals were reviewed in illustration of these propositions, which they seemed to abundantly support. The only species showing a marked increase in size southward were members of the genera *Felis*, *Procyon*, and *Sciurus*. The first- and last-named have their centre of development and largest species in Southern Mexico and southward, while *Procyon* belongs, with the exception of a single species, to a family wholly tropical.

As birds, with exceedingly few exceptions, are migratory at the far North, and are thus able to escape the wintry severity of the Arctic and Subarctic regions, they are less likely to present the double decadence in size implied in the first proposition above-quoted, and really shown in some mammals. Yet the cases of decrease in size northward among the *Anatidæ* referred to by Mr. Ridgway in the last number of the Bulletin (Vol. VIII, p. 62) may fall under this head or may be viewed as only coincidences.* The few marked cases among North American birds of increase in size southward seem to occur among certain genera of Oscines which are either for the most part tropical or belong to tropical groups. Perhaps the most striking case is that of *Catherpes mexicanus*, with its two small northern races, *conspersus* and *punctulatus*. Again *Thryothorus ludovicianus* has a large southern race (*miamensis*) in Florida. The genus *Thryothorus* is mainly tropical in its distribution, and belongs, like *Catherpes*, to a subfamily chiefly represented in the American tropics.

The yellow-throated, black-masked section of the genus *Geothlypis*, a group also mainly tropical, affords several illustrations in point. *G. trichas*, the only species of the section having a wide range in North America, is the smallest of the group, with a large race in Mexico and another large race in the Bahamas. *G. poliocephala* is represented by a small race in Mexico and a larger one in Central America. *G. equinoctialis* is represented by a large race in equatorial America and a smaller one in Brazil.

In *Pyranga*, the only North American genus of a tropical American family, *P. æstiva* of the United States is represented by a larger race (*cooperi*) in Mexico. *P. saira*, of equatorial

* So far as the distribution and breeding ranges of *Fulix marila* and *F. affinis* are known to me they seem to hardly fall into the category here cited.

America, has a smaller northern race in Central America. *P. hepatica* of Mexico has, according to Mr. Ridgway, a smaller southern race in Paraguay. In reference to this latter case, and to *Geothlypis poliocephala*, decrease in size southward south of the equator is equivalent of course to decrease in size northward north of the equator.

The instances of decrease in size southward in North American Oscines above-noticed—and they embrace all the marked ones that I now recall—seem to be explainable under and illustrations of the first proposition above cited. In general, North American birds belong either to northern or cosmopolitan types, with a few pertaining to distinctively tropical American groups which are represented with us by a few outlying members; and it is among these that we note the exceptional increase in size southward.

Geographical variation in size in birds has been hitherto discussed chiefly in reference to those of North America, but that the law of decrease in size southward also holds for the birds of Europe and Asia is indicated beyond question, but not at present perhaps equally demonstrable. That south of the equator there is, as there should be on general principles, an increase in size southward among conspecific forms is also susceptible of illustration, but it is beyond the province of this note to enter upon the subject here. Later there may be occasion to take up the matter in detail.

BIRDS OF THE LOWER URUGUAY.

BY WALTER B. BARROWS.

It was in the early days of July, 1879, that the writer entered the waters of La Plata and through the chilly mists which were driven before a stiff "pampero" beheld the great flocks of Gulls and Terns which, during the winter months, make these waters their home. Two months later he was set down in the darkness of early morning on the muddy shore of the west bank of the Rio Uruguay, about 200 miles north of Buenos Aires, at the old town of Concepcion del Uruguay. In the immediate vicinity of this