

which (*griseola*) proves to be only a slightly differentiated subspecies of *C. passerina*. For many years, or until the custom came in of recognizing subspecies, the real status of *griseola* was that of a synonym of *passerina*, which up to a recent date² had a commonly recognized range extending from the warmer parts of the United States south through the West Indies, Central America and South America to Paraguay and Peru, thus including the type locality of *griseola*. When the original *passerina* came to be divided into numerous subspecies, *griseola*, as recognized by recent leading authorities, became *Chamepelia passerina griseola*.

In my paper cited above I stated that I could "see no reason why *Columbina griseola* = *Columbina passerina griseola* (Spix) may not be properly taken as the type of *Columbina*, in accordance with rule *d* of Art. 30 of the International Code respecting the equal availability of species and subspecies as types." I find it is now questioned whether this statement, owing to its form, can be taken as really designating a type for *Columbina*, and take this opportunity of stating that this was its intention. To leave no doubt, I may here add: *Columbina* Spix, 1825; type *C. griseola* Spix = *Columbina passerina griseola* Spix.

But there are other complications hovering about the type of *Columbina*, and about the propriety of the above designation, on the ground that the question is one partly of zoology and partly of nomenclature. In other words, that *griseola* may not be a subspecies of *passerina* but possibly a distinct species, or a subspecies of some other species. This question could not well have arisen except for a mistake made by Bonaparte, in 1854, and followed by nearly all authors for the next half century. He recognized and described a species under the name "*griseola* Spix" which was not only not the *griseola* of Spix but bears to it no very close relationship, it being in reality the *Columba minuta* of Linnæus. To this extent,

² Cf. Salvadori, Brit. Mus. Cat. Birds, XXI., 1893, p. 477.

and no further, is the type of *Columbina* a question of zoology; for the type of *griseola* Spix is still extant and proves to be a young female of the *passerina* group, or of "*passerina*" as formerly recognized.³

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ANOTHER SEX-LIMITED CHARACTER IN FOWLS

IN view of the number of sex-limited characters recently recorded, the report of another one may be of interest even though the experiment has not yet gone beyond the first generation.

The Brown Leghorn fowl has nearly the same color as the wild *Gallus bankiva*. It is a sexually dimorphic breed, with black and reddish or yellowish-bay the chief colors in the male, and with the female lighter in color and showing a characteristic black and yellowish-brown pepper-and-salt pattern on the back and wings. The Columbian Wyandotte has both sexes white, with black in the neck, wings and tail.

When these two breeds were crossed there were three different classes of birds in the F₁ generation. There were brown females resembling the Brown Leghorn females, and gray males and females resembling the Columbian Wyandottes but having considerable black mixed with the white ground color, thus giving a grayish effect. These came in the following way:

Brown Leghorn ♂ + Columbian Wyandotte ♀
= 10 gray ♂ and 8 brown ♀.
Columbian Wyandotte ♂ + Brown Leghorn ♀
= 9 gray ♂ and 3 gray ♀.

It will be seen that these results agree with Goodale's experiment,¹ since the gray males show considerable red or brown on their backs, as was the case with the corresponding birds in his cross between White Rocks and Brown Leghorns.

The gray females, however, unlike his barred F₁ females, also show a little brown, though this is not conspicuous. They also show some

³ Cf. Hellmayr, Abhandl. d. II. Kl. d. k. Akad. Wiss., XXII., Abb. iii, 1906, p. 697.

¹ Proc. Soc. Exp. Biol. and Med., Vol. 7, No. 5, May 18, 1910.

of the Brown Leghorn pepper-and-salt pattern. The F_1 brown females are yellower on the fore part of the back and wings than are the Brown Leghorns. They seem to resemble some of Goodale's F_1 brown females, but none are as dark as some of his. Perhaps such would have appeared if a larger number had been raised.

These results show that the gray pattern behaves as the barred and brown ones have already been shown to do. The results may be explained as the others are. Represent the gray factor by G, the brown by B, and femaleness by F. Assume that both G and B are spurious allelomorphs to F.²

The representation will be

Brown Leghorn ♂ — gBf gBf	}	produce {	gBf Gf — gray ♂.
Columbian Wyandotte ♀ — Gf gF			gBf gF — brown ♀.
Columbian Wyandotte ♂ — Gf Gf	}	produce {	Gf gBf — gray ♂.
Brown Leghorn ♀ — gBf gbF			Gf gbF — gray ♀.

Nothing has yet appeared to show the composition of the Columbian Wyandotte with regard to B.

Several years ago a Columbian Wyandotte male was mated to a female of the Silver Laced Wyandotte breed, which has black wherever the Columbian has it and also has the feathers of the back, breast and shoulders white, edged or laced with black. The F_1 birds were nearly typical Columbians, one of the males being near enough to that color to win a prize as a Columbian at a poultry show. Some of the females, however, showed black edging on the tips of some of the feathers of the back. One of these was mated to a Columbian Wyandotte male, and the result was practically the same as in the F_1 generation. Unfortunately, this cross was not made in the right direction to bring out the sex-limited character, but the result agrees well with that described above.

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² Goodale's work (mentioned above) has shown that B is sex-limited.

THE AMERICAN ASSOCIATION FOR THE
ADVANCEMENT OF SCIENCE
THE FORTY-THIRD GENERAL MEETING OF
THE AMERICAN CHEMICAL SOCIETY
AND SECTION C

THE forty-third general meeting of the American Chemical Society and Section C of the American Association for the Advancement of Science was held at Minneapolis in the Chemistry Building at the University of Minnesota, December 28–31, 1910. The first general meeting was called on Wednesday morning.

About 300 members and guests registered for the meeting. Approximately 275 of these were members of the society. The meeting was a thoroughly good one from the consideration of attendance, number and quality of papers, and the generally good time which every one enjoyed because of the generous hospitality of our hosts.

The council of the society met on Wednesday afternoon and Thursday evening, when the general business and election of officers were considered.

Wednesday evening the Minneapolis Section of the society extended a complimentary smoker to the visitors at the Commercial Club. Complimentary luncheons were also prepared for the visitors during each day of the session.

On Thursday and Friday afternoons excursions were made to the Minneapolis flour mills, International Stock Food Factory, St. Anthony Falls Power Company, the linseed oil and paint companies. On Saturday afternoon the visitors enjoyed a free excursion to the many points of interest about Minneapolis and St. Paul.

The following papers and addresses were given before the general meetings:

"A Universal Law," President W. D. Bancroft.

"Report for the International Committee on Atomic Weights," F. W. Clarke.

"The Lost Arts of Chemistry," W. D. Richardson.

"The Basis of Industrial Efficiency," Arthur D. Little.

"Synthetic Metals from Non-metallic Elements," Herbert N. McCoy.

"Progress in Food Chemistry," H. E. Barnard.

"Mechanism of Cell Activity," Carl L. Alsberg.

"Waste Wood and some of its By-products," Geo. B. Frankforter.

"The Formation of Carbohydrates in the Vegetable Kingdom," Wm. McPherson.