

72. ***Hylocichla guttata auduboni***. AUDUBON'S HERMIT THRUSH.— Two taken in Rocky Canyon, Oct. 11, 1906.

73. ***Hylocichla guttata nanus***. DWARF HERMIT THRUSH.— One taken on the Mimbres — Black Canyon Divide, Oct. 5, 1908.

74. ***Planesticus migratorius propinquus***. WESTERN ROBIN.— Common over all the area, but not noted above 8000 feet.

75. ***Sialia mexicana bairdi***. CHESTNUT-BACKED BLUEBIRD.— A number seen at the Alum Camp Oct. 16, 1907.

76. ***Sialia currucoides***. MOUNTAIN BLUEBIRD.— Common over all the area, latest date being Oct. 17, 1908.

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## THE HAWAIIAN LINNET, *CARPODACUS MUTANS* GRINNELL.

BY JOHN C. PHILLIPS.

IN 'The Auk' for June, 1912, Mr. Grinnell gives a new name to the introduced linnet of the Hawaiian Isles. I propose to discuss briefly both the name itself and the specific value of the form named.

In the first place, the word itself, *mutans*, implies a very definite condition, namely, a sudden germinal variation expressed in the soma as a Mendelian dominant, dominant because it is not possible to conceive of a recessive character, getting the upper hand in the wild unless it is of marked selectional value.

The word mutation means "the act or process of changing" but in the biological sense which it has had since the time of de Vries, a very definite meaning has been given to it, often theoretical perhaps, but nevertheless quite clear. Unfortunately the word has been misapplied to little understood types of variation,—for instance, to rare Mendelian combinations, to the loss of one or more characters from the germ cells, to the products of disease, etc., etc.

The name *Carpodacus mutans*, then, would imply that the following experimental conditions must hold. First the new form must breed true, or as true as the old, even when taken back to its original continental range. Second, in crosses with typical orange

birds of ancestral stocks, it must behave as a dominant, or at least as a partial dominant. Neither of the above premises is likely to hold good.

Now as to the value of these imported Hawaiian Linnets in a racial sense. Mr. Grinnell discusses the change in caged Linnets (University of Cal. Pub., Vol. 7, p. 179) and shows that yellow birds result from red, after a short period of confinement. This appears to be a well known fact with various red birds. The case of the European Linnets is mentioned by Finn in the *Avicultural Magazine* for June, 1906. Mr. Bangs informs me of like cases from his own experience with Crossbills, Redpolls and Purple Finches and with a Cardinal in confinement. The Cardinal did not go so far off color as the Crossbills. The so-called Japanese Robin (*Liothrix luteus*) which is brilliantly colored on the chest, throat, and primaries with orange and scarlet-vermilion, turns more or less olivaceous all over after a few moults according to Mr. Bang's experience. We have all seen the dirty white color which American Flamingoes take on in zoölogical gardens.

Is it not thus highly probable, as Mr. Grinnell himself has suggested, that a diminished tyrosine oxidation is responsible for both the caged and the Hawaiian birds. The general environmental complex of the Hawaiian Islands is an intricate problem, but the fact that other American insular areas, Guadalupe and San Benito Islands, show a rather high percentage of yellow or orange birds is suggestive as Mr. Grinnell says of some special insular effects. The occurrence of *some* yellow or orange birds (percent hard to estimate for reasons given Mr. Grinnell on p. 182) in the normal habitat of the species, shows that its color elaborator is in a state of delicate adjustment, that is, it is not always allowed to continue its action up to the ultimate crimson color. We can well imagine, then, that a very slight diminution in the activity of the enzyme might produce the observed results in Hawaii, and might not these results be of entirely extrinsic origin? It is certainly easier to apply a theory of this sort than to hunt about for a deeper one.

On page 184 Mr. Grinnell calls attention to the fact that eight or ten years ago there were many red or crimson linnets in the islands. The data upon which this suggestion is founded are not quite

sufficient for the purpose, but if this is so there has been a change since that time, and the case is a very curious one.

In the Museum of Comparative Zoölogy there is a series of twelve male and six female Linnets collected by Flood Bros. on Molokai in 1895 fifteen years before Mr. Grinnell's series was taken by Miss Alexander on Molokai, Oahu and Maui. This series shows (provided it was taken at random) that the species was at that time nowhere near stability, and that there was almost as great a range of color as in birds from Arizona and other parts of the southwest, only the average color is of a much lighter shade. Three of the males are poppy red to orange vermilion (Ridgway's Manual of Colors, 1886), three of them are orange to orange vermilion, five are orange to cadmium-orange, and one is pure cadmium yellow. In most of these birds the feathers are of mixed tints, that is, at least two colors occur on one bird. Most of these birds, then, are well off color. There is no individual of the deep crimson type. As a whole this series does not differ very markedly from Mr. Grinnell's as far as one can judge without comparison. The colors, being so subtle and mixed are not easily described.

In the last paragraph of his paper Mr. Grinnell says that at the present time "to assert emphatically any particular factor or group of factors as the prime stimulus does not seem justifiable." The name however, *C. mutans*, does assert or at least imply a definite variation of an intrinsic, or germinal nature. The question as to whether this slight alteration in a character already unstable is deserving of special recognition in our nomenclature is an open one, and certainly not for the writer to decide. It was the name itself which first appeared to him as inappropriate.