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Heterochrosis in the Crimson-Breasted Parrot, *Pyrrhulopsis splendens*.

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Colour metamorphoses in parrots have long been recognised by zoologists, and the alterations, both congenital and acquired, seem to follow definite rules to which there are few exceptions. As the writer has observed a well-marked example of deviation from the usual chromatic changes, it may be interesting to report it, together with a drawing in colour of the bird itself by a careful and competent New Zealand artist, Mr. Cedric Bulling.

The writer, who has examined about a hundred of the larger Fijian parrots, had his attention drawn, some months ago, to the presence in the pectoral plumage of a parrot from Kandavu—an island that furnishes practically all the supplies of the Crimson-breasted Parrot (*Pyrrhulopsis splendens*) for cages—some yellow spots. These occurred as scattered, buffy maculations affecting the free half of the plume. At the time these alterations, though evidently abnormal, were not regarded as sufficiently widespread or plain enough to warrant further enquiry. Shortly afterwards a second example appeared in a bird about three years old, with rather lighter green upper parts than the typical Kandavan species. The back showed a few *light orange* spots; in front there were more numerous *yellowish* maculations, and in places the red feathers were wholly suffused with yellowish.

This individual was certainly smaller in all dimensions than the ordinary adult female. Applying the vulgar test* of sex—size and shape of the head—the bird was probably a male, and on repeated (estimated) measurements, is less than 16 inches in

*This method of diagnosis, uniformly adopted by Fijian aviculturists, is based upon the observation that adult male birds have distinctly *flat*-crowned heads; females, on the contrary, definitely *round* heads. So far as the present writer has tested it, the finding is correct.

length. An important character is a well-marked *orange* tuft of uropygial feathers. This parrot was in the best of health, and the present owner had had him under observation for more than two years.

He was of an affectionate disposition, and proved to be an excellent conversationalist. The colour changes have been closely followed since they began to show on the bird's breast and back two years before. Since that date they have slowly increased in size and numbers. The tail and wings are as yet unaffected by the xanthochroism.

The individual pictured in the coloured plate has the yellow and orange markings more widespread and more fully developed. This parrot was brought from Kandavu as a fledgling less than a year ago. The immature plumage began to show the colour alterations first on the back; they then spread rather equally to the wings, abdomen and tail. The eyes are reddish brown; the mandibles present the normal black colour with the lighter, greyish base of a young bird. The general coloration can now be called yellow suffused with green. The hind-neck and back are covered with about an equal number of light green and yellow feathers, but in the upper tail coverts yellow predominates. Several of the primaries have both webs almost completely white, and three rectrices have lost most of their blue coloration, one being nearly white, the other two ashy grey. In the opinion of the owner, who is much interested in the peculiar plumage of his bird, the colour changes in the upper surface of the body have recently advanced so rapidly that in a few months, if the rate of change continues, he will have on his hands a yellow and white parrot.

The chromatic alterations in respect of both colours have always shown themselves at the feather tip, thence advancing uniformly to the base. As in the case of the other two subjects, this bird has always been healthy and lively, of a good disposition, and a good talker.

Without attempting to discuss this case of mixed albinism and xanthochroism, a task already undertaken by Deane, Toppan, and others, as regards birds in general and by Gadow, Penzeln, and Meyer, in respect of heterochrosis in the parrot family, the problems that arise when two or more different processes are taking place in the same individual are doubly difficult of explanation, especially when the subject is (or is to all appearances) free from any other form of disease.

The writer would be much interested to learn if any of his colleagues have studied similar cases of double heterochrosis in any of the parrot genera.