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III. Note on the Honduras Piebald.

By KARL PEARSON, F.R.S.

The first report of this piebald with photographs was, I believe, brought back to Europe by M. le Comte Maurice de Périgny. Professeur R. Blanchard published an account based on the Comte de Périgny's data in the *Bulletin de la Société française d'Histoire de la Médecine*, t. ix. p. 213, Paris, 1910. Through the courtesy of the Comte de Périgny I have been provided with copies of his photographs, which will appear in the Second Part of the *Monograph on Albinism* soon to be issued by E. Nettleship, C. H. Usher and myself, and are reproduced as Plates X. and XI. here. This piebald boy is of much interest because he belongs essentially to the "classical type," illustrated in paintings of the 18th century, and no living piebald of this type had so far come to our knowledge, although we had in the First Part of our monograph given many illustrations of early cases.

But there is further scientific interest in this piebald because he supports the point of view emphasised by me in the monograph referred to, that when a pure race is crossed with a mixed race—a hybrid between races with markedly different degrees of pigmentation—then piebalds are likely to appear *de novo*. On this ground it seems to me idle to speak of piebaldism as a Mendelian unit character, and it is idle equally to talk of it as a latent unit character, for there is no evidence at all that it ever occurred before in the pure races whose crossing leads to these piebalds. In the present case the mother has Mexican and negro blood, the Mexican being already a mixture of Spanish and American Indian. She thus combines black, red and white races. The father is a coal-black pure African. But several of our piebald pedigrees show that it is sufficient for piebaldism when a pure red or white is crossed with a pure dark race and then the hybrid be mated again with either pure race, the produce of this second cross may be a piebald. The light race may be merely an albino variety of the dark race, and in several of our dark race pedigrees we find such piebalds occurring in stocks wherein albinism has occurred also. Indeed given an albino occurring in a dark race it seems possible from the hybrid between normal and albino by crossing again with normal or albino to produce almost every shade of colour as well as every variety of piebaldism. If such cases occur in man and axolotl, it seems unnecessary to seek in the ancestry of the albino for possibilities of either piebaldism or colour, as for example has been done in the case of mice. There is no reason to suppose brilliant colours latent in the normal axolotl, nor piebaldism latent in the normal man. At any rate where there is no evidence of it before the crosses take place, it is more reasonable to suppose it a product of the crosses themselves.

Without entering fully into a matter which will shortly be discussed at length elsewhere, I would point out that when a hybrid is formed between a black dog which has bred true for many generations and an albino of another race, this hybrid is either black or black with white markings on chest, never in our experience so far a true piebald, but when this hybrid is crossed again with the albino, we obtain at once not only black dogs, or black dogs with white markings, but black and white piebalds, lilac and white piebalds, rusty black dogs, red dogs, and albinos; possibly as the work goes on other types will appear also. Much the same changes seem to arise from like crosses not only in mice and axolotl but also in man.

In the case of our present piebald we have the father a pure coal-black negro and his brothers and sisters are like him, the mother is a mixture of negro and Spanish-Indian blood; she has a fair skin, black eyes and long black hair, and brothers and sisters are fair skinned like her. There are six children; the three eldest are boys aged 11 years, 9 years, and $7\frac{1}{2}$ years

Lisbey, the Piebald Boy of El Cayo, British Honduras. From a photograph taken for K. Pearson, through the courtesy of Robert H. Franklin, Esq., July, 1912. Lisbey's Father, Mother, and three younger sisters are shown.

Lisbey, the Piebald Boy of El Cayo, British Honduras. From a photograph taken for K. Pearson, through the courtesy of Robert H. Franklin, Esq., July, 1912. Plates VIII and IX compared with X and XI indicate that the frequency and relative size of the colour patches appear to have altered.

Lisbey, the Piebald Boy of El Cayo, British Honduras. From a photograph most kindly provided by M. le Comte Maurice de Périgny. Lisbey is shown with his Father. Front view, 1908. Reproduced from Pearson, Nettleship and Usher's *Monograph on Albinism*, Part II.

Lisbey, the Piebald Boy of El Cayo, British Honduras. From a photograph most kindly provided by M. le Comte Maurice de Périgny. Lisbey is shown with his Father. Back view, 1908. Reproduced from Pearson, Nettleship and Usher's *Monograph on Albinism*, Part II.

respectively, the last being the piebald ; the three youngest are girls aged 4 years, 2 years, and 9 months respectively. These last three children together with the piebald are given in Plate VIII. The grandparents were all "normal," i.e. not piebald. Plate VIII. suffices to show not only the difference in colour between father and mother, but the range of colour in the three daughters.

As soon as I had seen M. Blanchard's account of this piebald boy I wrote to the District Commissioner, at El Cayo, Mr R. H. Franklin, and he most kindly sent me the fuller particulars here given, as well as arranged to have the family photographed for me. He tells me that the youngster is the pet of the place as well as its "curiosity" and that he is quite an intelligent boy. He was born on December 1st, 1904, at Peten in Guatemala and the reason his parents give for his piebaldism is "that owing to an eclipse of the moon on the night of his birth, he caught it in the head and it scattered over his body." There was no eclipse of the moon on that date nor any near it.

One point further may be emphasised with regard to this boy. In our Monograph on Albinism, p. 248, Plate I (23)—(26), we deal with the case of a piebald boy from Papua and we give photographs taken at nine years interval. The dark patches have grown larger, but they have not increased in number nor in relative size. In the present case a careful comparison of the dark patches on the legs and arms of this Honduras piebald boy in the recent photographs (Plates VIII. and IX.) of July 1912 and those of the Comte de Périgny of some four years earlier (Plates X. and XI.), shows with almost absolute certainty that the relative area of dark pigmentation has considerably *increased*. This remarkable fact renders the boy of special interest, and it is to be hoped that in still later years photographs of him may be obtainable for comparison with the present series.

IV. Selection and Intermediates in *Bacillus coli*.

By LEONARD KEENE HIRSHBERG, M.A., M.D.

In the course of some other work on a strain of *Bacillus coli*, taken from the rectum of a Scotch collie, and planted first in beef tea on October 5th, 1911, transplantations and agar plates were made of these organisms with the original purpose of studying what has been hitherto called involution forms. The course of this work directed my attention to the possibility of these forms being dependent upon the quantity and quality of the pabulum or nutrient material furnished to the bacteria, and hence these so-called involution forms being actually types of polymorphism.

Incidentally observations were made, in view of the claims made by the biologists represented by Professor Castle of Harvard on the one side, and Professor H. S. Jennings on the other, along the lines of possibly selecting races of long, short, and various intermediate generations of this colon bacillus. If it had proved possible to select a type of long, intermediate, or short bacilli, that had remained within the limits of the select mode without reverting back or possessing the power to generate all the types, it would have strengthened the work of Professor Castle on such higher animals as rats, with their manifold and necessarily complexly interrelated factors. As it is, however, after making two hundred and twenty transplantations of colonies of this strain of organisms, and trying to generate true long, short, thin, narrow, and intermediate types for both length and thickness, I find at the conclusion of that part of the work that there is absolutely no ground in my experiments supporting selection as an element in generating a particular type of these bacteria.

Placed in suitable nutrient media, at room temperature, these bacilli divide very rapidly by simple fission. From twenty minutes to half an hour is the average time of division, yet if we