

LETTERS TO THE EDITOR.

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Lord Morton's Quagga Hybrid and Origin of Dun Horses.

Will you allow me to suggest that some of the data which speculators upon the antecedents and the history of the horse have made much use of are not too trustworthy?

First, I would suggest that there is doubt whether Lord Morton's famous quagga hybrid is a hybrid at all. Agassé's portrait of it and of its sire and dam are to be seen in the museum of the Royal College of Surgeons in London. According to the portrait, the hybrid was a bay with black "points," the blackness mounting just to the pastern joint, as it does in many bays.

Chestnut has been shown to be recessive to all other colours; and a chestnut never has black "points." Prof. Cossar Ewart tells us that "in their body colour none" of his hybrids took after their sire, the Burchell zebra, a close relation to the quagga. Now, in Lord Morton's case, we have a chestnut mare producing a bay, a colour she certainly does not contain. Is that possible?

Again, we have a chestnut and a quagga, whose legs were white, or, at any rate, a dirty white, producing a foal with black "points." Is that also possible? Unfortunately, there is one disturbing element in what has just been put forward; but it is not serious. I understand that Agassé may have painted the "hybrid" from a drawing, not from the life. But in a case so critical, and with Lord Morton at least to keep him right, it is scarcely possible he could have given the "hybrid" a colour and "points" it did not possess.

Next, I would suggest that the dun colour in horses is not a reversion. In view of the fact that one of our greatest men believed in the dun reversion, and also that it led him and others to argue the primitive horse to be dun and striped, my suggestion may be held to be very presumptive. All the same, it must be made.

In April last, the Royal Dublin Society published a paper for me on "The Inheritance of Coat Colour in Horses," in which it was pointed out somewhat tentatively, because the evidence then at command was small, that dun is dominant to chestnut, black, bay, and brown, and recessive to grey; while its relation to roan was not clear. Since that time a considerable body of further evidence has been got, and it all confirms the original conclusion. Accordingly, a dun foal cannot be got unless one of its parents is either a dun or a grey or a dun roan. Greys are, therefore, the only colour that could throw dun "reversions."

My chief purpose in asking you to publish this letter is to beg for evidence on the points at issue from anyone who would be good enough to send it. What is wanted is evidence—

(1) As to the body colours and leg markings of hybrids between zebras (especially Burchell zebras) and chestnut horses, and

(2) As to the parentage of dun horses.

Perhaps it may be well to say that, if there is difficulty in distinguishing bays, duns, and chestnuts, the following can usually be relied upon:—Unless white "stockings" intervene, bays and duns have always black "points." In bays the colour of the nostril patch is nearly always lighter than that of the face, but in duns there is no distinct break between the colours of the nostril patch and the face. Chestnuts have not black "points"; their legs are coloured like their bodies.

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PROF. WILSON thinks the "bay" filly which Lord Morton says he obtained by crossing a chestnut mare with a quagga was not a hybrid, because he assumes that a chestnut does not contain a bay colour, and that the off-

spring of a white-legged quagga and a chestnut mare would not be likely to have black "points." Prof. Wilson also thinks "that the dun colour in horses is not a reversion," and that the primitive horse was not, as Darwin and others believed, "dun and striped."

The prevailing colour of all the wild Equidæ now living in Asia is dun, and the wild horse (*Equus przewalskii*) has dark points and usually a light muzzle. As crosses between varieties of Burchell zebras with white "points," and crosses between zebras and ponies have, usually, dark patches at the fetlocks, and as the body colour of zebra-horse hybrids is usually yellow, rufous, or leather-dun, it may be assumed that the remote ancestors of the modern zebras only differed in their coat colour from Prejvalsky's horse in being more richly striped.

The drawing of Lord Morton's filly by Agassé might be said to represent a bay or a bay-dun—that the filly was a bay-dun rather than a bay may be inferred from Lord Morton saying that in her colour, as well as in her form, the hybrid filly afforded "very decided evidence of her mixed origin." A light chestnut Iceland pony mare in my stud produced a bay-dun with dark "points" to a yellow-dun Prejvalsky stallion, and a richly striped yellow-dun Highland mare produced first a dark bay with dark "points" and then a light bay (also with dark "points") to a chestnut thoroughbred (Diplomat). I am hence not surprised that Lord Morton's chestnut Arab produced a filly of a bay or bay-dun colour to a quagga.

It has hitherto, so far as I know, not been pointed out that there are two kinds of duns, viz.:—(1) duns without either a dorsal band, shoulder or leg stripes, and (2) duns with a dorsal band and, as a rule, more or less distinct bars on the legs—sometimes also with zebra-like markings on the face, neck, shoulders, and trunk, and spots on the hind quarters. Duns without stripes of any kind are now and again obtained when a grey is bred with a black or with a bay. The dun colour in these unstriped horses is apparently not a reversion. Moreover, the offspring of two unstriped yellow-duns may be bay or brown.

Yellow-duns with a dorsal band and at least vestiges of leg bars are, in all probability, either the descendants of a long line of dun ancestors or are reversions. Owing to the elimination of duns by breeders—the Arabs thought duns only fit for Jews to ride—there probably does not exist to-day a yellow-dun thoroughbred, but now and again one sees a well-bred yellow-dun hunter with distinct leg bars—a descendant, perhaps, of the dun mare or the dun Arab which figure amongst the ancestors of Touchstone.

That dun is latent in some bays and blacks was proved recently by a black Shetland mare from Unst producing to a bay Arab (Insaf), with a dorsal band and leg bars a richly striped yellow-dun. There are striped white, yellow, leather, and mouse duns. I have obtained a striped white dun from a red-roan Arab mare and a yellow-dun Norse stallion; a striped yellow-dun from a bay Sumatra stallion and a mouse-dun Shetland-Welsh mare; a striped leather-dun from a yellow-dun Highland stallion and a chestnut Shetland-Arab mare; and a mouse-dun from a yellow-dun Highland stallion and a black Highland mare.

My crossing experiments do not support the view that chestnut never contains bay or that yellow-dun is always dominant with chestnut, bay, brown, and black—they on the whole support the view that characters are "patent" or "latent" rather than, as Mendelians say, "present" or "absent."

As to the colour of hybrids between a Burchell zebra and chestnut mares, I have little to say. A chestnut polo-pony mare produced three hybrids. In the first two (twins) the body colour at birth was of a rufous tint, and the stripes of a faint reddish-brown colour. When full grown, the body colour was of a leather-dun hue, the stripes being a slightly darker shade of the same colour. In the third hybrid the body colour, golden-dun at birth, was eventually a dark yellow-dun. The stripes in this third hybrid are of a brown colour, and extremely well marked on the neck and limbs. Dark-brown patches at the fetlocks represent black "points."

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