By: Mike Ashton

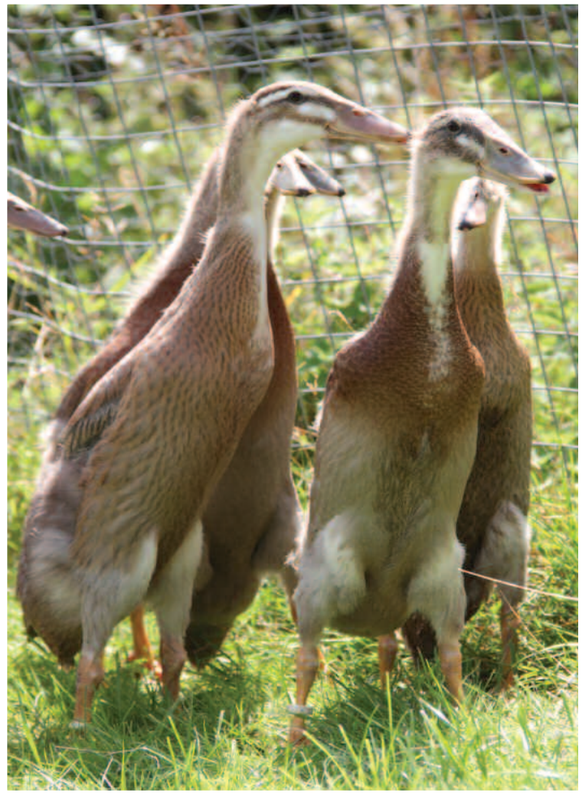
Appleyard Face Markings

Put simply, the Appleyard plumage in ducks is a modification of the Rouen Clair colour form. The main differences lie in extended areas of white on the body feathers, wings and, most strikingly, on the faces of both duck and drake. The gene thought to be responsible for this is the dominant 'mallard restricted' (M^R) allele.

Research on the triple allele series of the mallard pattern was published by R G Jaap (1934) and F M Lancaster (1963), although many of the phenotypes described appear to be from dark phase mallards. One would expect slight differences to occur using other phases, e.g. light phase shown in the standard phenotypes of both large and miniature Appleyards*.

A question forms the centre of this article: 'Is the Appleyard face marking a simple result of the M^R allele, or is it quite independent?' The reasons for the question are prompted by a series of anomalies.

1. According to an eminent waterfowl breeder, and associate of Reginald Appleyard, the drake sent to the artist Wippell had markings on one cheek only. There is a question of variability. However, an early photograph by Cyril Pilkington of a large Appleyard and one of the Appleyard bantam from 1953 show clear face-markings. Tom Bartlett was responsible for the development and breeding of the modern large and miniature versions and he based these varieties on the model of Wippell's painting (which shows the side with face markings.) Furthermore a number of Miniature Appleyard drakes shown in the late 1980s had no eye stripes or white cheeks.
2. It is possible for light phase mallards to show the Appleyard face markings (male and female) without any other signs of M^R. This was demonstrated very clearly at an international waterfowl exhibition in Tours in 2010. The male and female classes of the Challans duck (basically a white-bibbed Rouen Clair) had very broad, clear white eye stripes on the ducks and typical 'Appleyard' face markings on the males. There were no classic signs of M^R on the body and wings that we could see. These birds were all in full nuptial plumage.
3. In a successful attempt to replicate the 'Butterscotch' Call Duck plumage in large ducks we used an Appleyard drake with a pure Saxony female (Fancy Fowl Nov. 2010). It was only in the F^2 generation that homozygous blue dilution and homozygous M^R could be isolated, producing satisfactory large replicas of the 'Butterscotch'. However, some of the male birds (like the one in the photograph) had lost their face markings altogether whilst still showing the other elements of M^R.



Blue Trout eye stripe juveniles

These observations indicate that the face markings can exist without other restricted characteristics and, conversely, restricted characteristics can exist without the face markings. The answer to the initial question seems straight forward. Subject to further research and verification, it could be argued therefore that a 'face-marking gene' might be independent and not just part of the expression of the M^R allele. To these observations, one can examine additional evidence from breeders that extend the picture and give insight into possible ramifications.

We have noticed in recent years a fault creeping into flocks of healthy Trout Runners and Apricot Trouts. Some males appear to retain the speckling of grey/white in the head feathers and signs of eye stripes long after they have moulted from juvenile to nuptial plumage. Correspondingly broad, white eye stripes occur in the females alongside a tendency to have white feathers extending down the throat on to the breast. Crossing Apricots to normal Trouts illustrates the problem more clearly. (The juvenile Blue Trouts in the photograph are in stark contrast to the other Blue Trouts in the hatch.)

This is not a new phenomenon. I am sure this must have occurred to the annoyance of German breeders of the large Saxony ducks. In a talk given at Hasselt in 2002, Horst Kaltwasser is quoted as saying: 'He who wishes to breed females with superb head markings should use drakes for breeding who showed faint eye stripes (like the females) in their juvenile plumage. Also in the summer plumage of adult drakes these eye stripes can be noticed. Breeders who use this method for several years should however pay attention. Drakes of the following generations often do not "colour through" anymore in the face and the eye stripes of the ducks can become too large and the throat too pale. One should always be very cautious'. These remarks are by an experienced German breeder who has seen the problem at first hand and noticed the way it can develop.

To what extent these phenomena are connected to the face markings of the Appleyard remains speculative. Are they, as it seems, unrelated to MR and do they reflect variations on the expression of another gene?

The next stage in the process would be to formulate a working hypothesis, and then test it scientifically, if one has the resources. So far, the observations suggest a gene which can be relatively inconspicuous and then, given the right breeding combination, produce a more extreme and stable phenotype. I would tentatively propose an incompletely recessive gene (fm) that can be stable and clearly expressed in homozygotes but remain almost suppressed in heterozygotes. It would be inconspicuous (to the casual eye) in a contaminated flock but emerge blatantly when two heterozygotes are mated together.

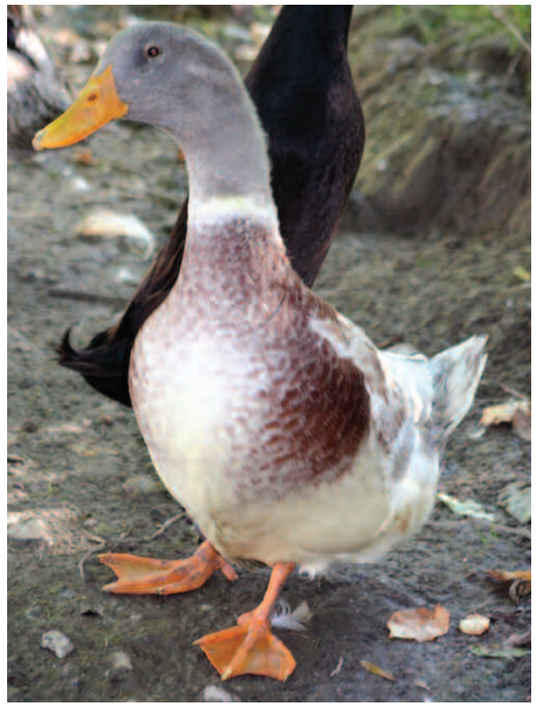
I use the word 'contaminated' in a practical sense. The 'gene' is a prime requirement for the standard Appleyard plumage (and the Challans/Nantais examples at Tours) but potentially a significant problem in the large Saxony and also Trout Runners. Cross-breeding with so-called 'Appleyard Runners' (that have emerged in recent years) might lead to even more problems in pure flocks—a typical danger with recessive genes. As a warning, I would argue that a basic grasp of Mendelian genetics by duck breeders can go some way to help understand such a problem and to avoid it.

*Note

I have not used the word 'Silver Appleyard' in order to avoid increasing the confusion where 'silver' is associated with the harlequin phase plumage (in light ducks, Silver Calls, Silver Runners and Silver Bantams).

Challans Duck

Challans Drake



Young Butterscotch drake approaching nuptial plumage