

February 24th, 1936

My dear Ford,

I am delighted to hear that you are co-operating with de Beer in a study of the embryology and genetics of hernia and its modifications. If you can possibly make an occasion to lunch with me here some day I should like to show you both such specimens as I have; namely, transparencies and one skull of young herniated birds, and a transparency of a herniated hen, which I killed at 18 months, after breeding to show that she was homozygous for crest. This last has bone extending much further up the hernia, leaving the largest aperture at the apex and several lacunae at the sides. It thus resembles Darwin's figures of Polish skulls in the lacunae, but not in the median arch of bone which he found. Darwin's specimens were presumably fully adult birds.

If my one specimen is typical, the main modification in the Polish breed would seem to be the ^{production} ~~modification~~ of the median arch, with, possibly - though of this I am much more doubtful, some exaggeration of the dome. This may, however, certainly be very large in

herniated Wild stock. The crest feathers in the Polish have, of course, been enormously increased, and are long and stiff, so introducing some mechanical problems in the region where they are inserted.

A further point of great interest in any experiments with Polish is the nature of the Polish comb. Unfortunately, if crossed ^{only} with Silky, this will be obscured by Rose, and probably also by Pea, since many show Silkies have walnut combs. Could you find it possible also to outcross the Polish to a single combed breed? At face value Davenport's F_2 data on the linkage of Polish comb with crest is convincing enough, though far too many birds must have been classed as chicks or embryos, and Davenport failed to ^{note} ascertain that the crest itself does considerably modify the comb by shortening it, and, when single, bending it sharply at the back, so that, using single combs, it is easy to recognise the chicks which are going to develop crests. If, however, the Polish comb, which is generally Y shaped in the heterozygote, is genuinely linked with crest, it should show linkage also with Pile and Frizzle. Consequently an outcross with single combed Frizzles or Piles would prove, or disprove, linkage and, if linkage is present, the Frizzle cross should establish the order of the genes. I forget whether all Polish are white: but, if so, this is a drawback to using Pile

though a recessive white could certainly be used, since
in
in back-crossing the Frizzle the homozygous Frizzles are,
I believe, easily distinguishable. Let me know
when you can come and talk about this further.

I am enclosing the address from which I last
got Silkies. They cost only 7/6 or 8/6d each, being
fairly widely advertised for use as broodies, especially
for hatching pheasants.

Yours sincerely,

Address

D Shppard
Kilsall Lodge
Staple grome
Taunton, Somerset.