

# HYBRIDS

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Above: Golden pheasant x Common Pheasant cross, offered for sale at a merchant in Ceylon.  
Photo: André van der Wielen.

Text: Elly Vogelaar and Hein van Grouw.

Photos: Hein van Grouw, with courtesy of the National Museum of Natural History NATURALIS, Leiden The Netherlands.

Crossings of different 'Varieties' (or 'Breeds') within a Species - the resultant Progeny usually called a 'cross-breed' or 'mongrel' - are not exceptional. (for instance: Backyard poultry). These crosses, mostly accidental, are usually nothing to get excited about and not much valued except when part of a planned breeding programme to create a new 'Breed' or introduce new features, such as Colour or Markings, into an existing Breed.

However, a crossing between two different SPECIES is another story! Throughout the history, the existence of such 'Hybrids' has always triggered our fantasy. We have gathered some information for you on Fowl 'Hybrids'.

There are several reasons why they did these crossings. In earlier days, especially around the nineteen hundreds, but before that time as well, these experiments were done for scientific purposes. One tried to do various crossing for economical reasons; some hybrids made a better "product". Apart from that, there have always been hybrids which came into existence spontaneously in

nature, for example the hardly choosy drake in a duck pond, or a lonely pheasant male in a chicken coop. Another reason to cross was beauty. Or sometimes necessity, because of the lack of a fitting partner/mate, or just sheer ignorance.



**Left and above right: Mounted skins of Hybrids from Domestic Fowl x Green Junglefowl.**

**From a scientific point of view**  
Crossings were mainly done from a scientific point of view, to establish the relationship between the different species. Back then, the idea was - according to an

acceptable biological rule – that only animals that are very closely related, the ones belonging to the same species, could reproduce and have fertile offspring. Looking back, this rule did not seem exactly right. In those days not everything concerning the relation between species was known, thus all sorts of crossings were experienced. Scientists each had their own 'speciality'; in the poultry sector we had - around 1900 - for example Hutt and Lancaster, who left a lot of documentation concerning their experiments. The Dutch poultry specialist Houwink also did a lot of research in this area. He reported, among other things, crossbreeds of the Ceylon Jungle Fowl and the Sonnerath Fowl with tame fowl. Mounted skins are still to be seen in Naturalis, the Museum of Natural History in Leiden. Houwink in those days had a 'test garden' as he called it, in which a diversity of species were crossed, not only poultry but later on also horses, donkeys, bees and so on.

Ayam Bekisar, a male hybrid between Green Junglefowl (*Gallus varius*) cock and domestic bankivoid game hens, can still be found in Java and Komodo. They are known for their very loud crowing.



**Right: Study skin of a cross Sonnerath Fowl x Bankiva Fowl; one of Houwink's experiments.**

**Left: Noted at the wooden label: Date of death of this bird (14 December 1922), the file number by**

**Houwink (270-1) and the file number of both parents.**



From a diversity of documentation we are able to get a good idea about those hybrids, and also about the problems they had with getting the different species to mate, as artificial insemination did not exist yet. There is a lot to read about crossings between pheasant and chicken, guinea fowl and chicken and peacock and chicken.



**Left and below:  
Mounted skins of  
hybrids from  
Common pheasant x  
domestic fowl.**

Mostly one tried to mate a cock from a different species to domesticated poultry hens. They were housed next to each other in coops so they could see each other. Such a cock, for instance a pheasant, would be



fed with seeds which would make him more eager to mate, and was put with chickens when they were producing a good number of eggs. Sometimes the mating was successful, but often enough the hens wouldn't accept him and even peck him to death. Brown and Allen reported that in 1830 there were already hybrids from pheasants x chickens in possession of the London Zoological Society. They were kept together for a long time but had no intention of mating; the conclusion was that they would be unproductive between themselves.

However, every now and then off-spring from the hybrids was produced. In more than one book we are told that the London Zoological Society had an exhibition in 1831 and 1836 of such 'Second Cross (F2) Hybrids'. Still, if this was only mentioned two times during all those years, one can say that this phenomenon is almost impossible. The Agricultural Gazette of July 1848 also stated that one of the most successful breeders managed, after a lot of failures, to produce a few F2 chicks from a mating between hybrids, but they died before they were fully grown.

The Zoological Society had more hybrids. In 1848 they had 2 hybrids out of a crossing between Jungle Fowl/Sonnerath cock and a Red Bantam; they resembled the Bankiva Fowl a lot. They had also produced a male hybrid from Sonnerath hen x Game Fowl cock, which differed in voice, plumage and carriage, from any Common Fowl. This rooster however was not sterile and fathered a number of chicks, but he was so aggressive that he killed one hen and severely injured others.

Furthermore, the Society was in the possession of hybrids from Guinea-fowl x domesticated chicken, also infertile. The feathering didn't have the Guinea Fowl

'pearls' anymore, but was sort of barred in a whitish and grey colour, with something between a ruff and a hackle around the neck.

Nearly always it is stated that the born hybrids are mainly males. The many mounted skins of hybrids that are preserved in museums all over the world, do seem to be males. This was however not always ascertained.

**Right: Mounted skin of a Hybrid from Common pheasant x domestic fowl.**

The new scientists (around the year 2000) did check the sexuality of the hybrids and found out that their sexual organs were practically undeveloped. They don't mention difficulties in mating, maybe because they had chosen for the combination Pheasant hens and – in this case - New Hampshire cocks, instead of the reverse cross.



By studying these Hybrids, a better insight of the heredity of the many genes was obtained. One learned that with the pheasant as sire, fertility was higher than with the fowl; hatchability of fertile eggs, however, was similar, 42% and 41% respectively. And it was also ascertained that the death of many embryos and young chicks was caused by *exencephaly*. (A condition of partial or complete protrusion of the brain through the skull). The incidence of this malformation in hatched chicks was 12 times more in crosses with the fowl as sire than in the reverse cross.

**From an Economical Point of View**

The fact that hybrids were a better product was something which had been discovered much earlier.

Anthony van Leeuwenhoek had already mentioned, in 1683, that crossing wild rabbits and tame rabbits would give a better economical product. If you crossed a large tame white female with a wild male, the young would turn out wild coloured and could be sold as a wild rabbit. They had more meat on them than the real wild version and wild rabbit meat was more costly than tame rabbit meat. So to crossbreed them was economically wise a good thing, even though they were infertile.

In his *Histoire Naturelle des Oiseaux* (1770) Buffon gives a detailed definition of a 'new kind': the Cocquar, also named as *Faisan bâtard* (mongrel pheasant). They were defined as a mix of pheasant and an ordinary chicken. Buffon describes this bird same as they do much later, with the red circle around the eyes and the tail of the pheasant and the colour and feathering as the Common Fowl cock. He

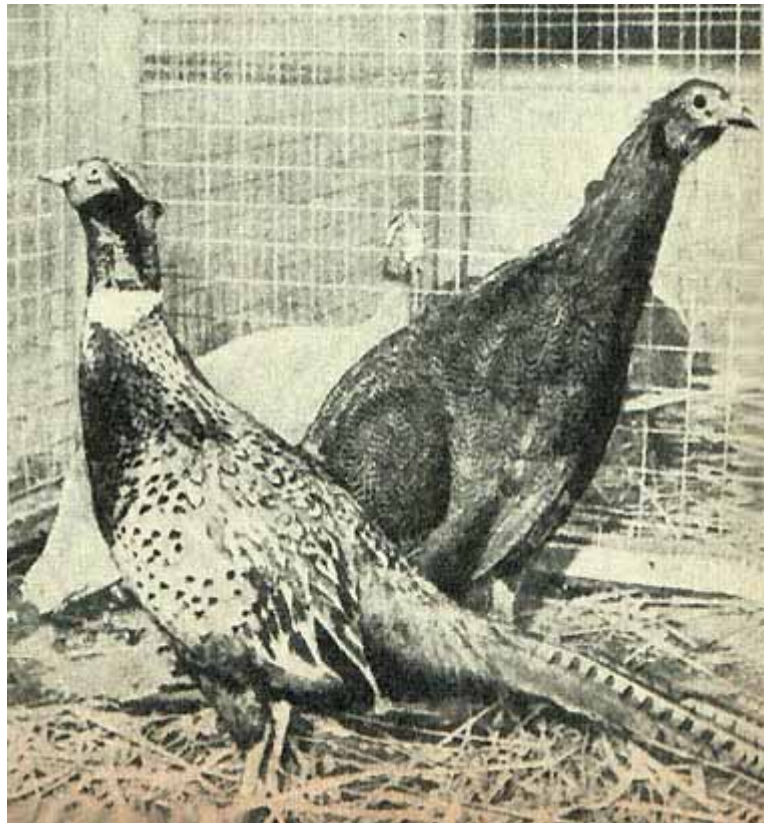


mentions that these hybrids are infertile, they are smaller than a normal pheasant and in his eyes not an economical product, but that they are bred a lot in Germany because they do profit from them and they are very tasty.

The hybrids 'being smaller' is not in accordance with other documentations. In 1869 Lewis Wright writes in his book *The Practical Poultry Keeper*, that if you cross a rather small pheasant rooster with an ordinary chicken, the hybrid always turns out larger than the mother. Today we still have the same experience.

**Right: A peculiar hybrid from a Torquatus pheasant cock and a lavender Guinea hen. The three birds were exhibited at a Poultry Exhibition in France, around 1965.**

**Photo: Archives Avicultura.**



One experimented to improve, but a lot of it did not succeed. For instance, hybrids from Guinea-Fowl x Chicken are often mentioned for their meat, but come and go because of the fact that they never became an economical success. What did become a success was the crossing with the Muscovy Duck, *Cairina moschata* and the tame mallard *Anas platyrhynchos*, which are two different species. These hybrids turned out to be especially good for production and favoured economic profit. They grow fast, have a lot of meat on them and are good egg layers. They are incapable of breeding in a line, but the females will pair with the common drake and produce a good sort. In *The American Poultry Book* of 1861 we can read that mating between a male wild goose (*Branta Canadensis*) and a tame female goose (*Anser anser*) produced superior hybrids with a good market value. They had a perfect flavour and were therefore much wanted.

**Right: Mounted skin from 1862, of a Hybrid from Pintail x Wigeon.**

### By Accident

Hybridization does happen in the wild as well. We all know of the hybrid ducks, by crossings for instance mallard and teal. With these hybrids the 'other' parent is often easily recognised by the colour and marking of the feathers, at least it shows in the male offspring; the females do resemble each other a lot.

Especially the Mallard is known to mate with other duck species.





**Above: Hybrid from Pintail x Mallard and from van Pintail x Teal.**



**Above: Hybrid from Shoveler x Pintail and from Shoveler x Mallard.**



**Above: Hybrid from Mallard x Wigeon and from Mallard x Teal.**

**Below right: Hybrid from Teal x Mallard. All these mounted skins are from before 1900, but crosses like this still happen today.**

This is the reason for which in Australia it is forbidden to keep Mallards – that are not a native species there - unless they are pinioned. One wants to keep the Australian duck species as pure as possible. In Europe a similar situation has arisen; the population of White-headed ducks (*Oxyura leucocephala*) in Spain is being threatened by mating



with (escaped) Ruddy Ducks (*Oxyura jamaicensis*). Ruddy duck breeders are morally in charge to keep their fowl on the premises by pinioning their birds to prevent from escaping.



In captivity it can also occur that by accident Hybrids are born, for instance because of the fact that there is not a suitable mate. The most well known hybrids are between the Golden pheasant or Silver pheasant x the Common Pheasant.

**Left: Mounted skin of a Hybrid from Common pheasant x Silver pheasant.**



**Right: Hybrid from Common Pheasant x Golden pheasant.**

But we also know the stories about the lonely pheasant male in a chicken coop that mated a chicken hen or the (sometimes wounded) wild goose which lands in a flock of domestic geese and next breeding season chooses a partner from them.

One of the nice things of the internet is that we can now show such things in a very simple way to a lot of people. On [www.feathersite.com](http://www.feathersite.com) you will find an

extraordinary collection of Hybrids, such as Peacock x chicken, Pheasant x chicken, Guinea Fowl x chicken and such. Most of the owners are able to tell which species were involved. Especially the hybrids from the Naked neck X Guinea Fowl crossings are bizarre, although these probably did not happen by accident, but through the owner's intervention. Natural History Museums often have examples of these hybrids in their collection.



**Left: One of the 3 hybrids that hatched from a cross between a pheasant male and an OEG bantam hen. The Ringneck male was 'familiar' with the chickens as it had been raised by a broody with chicks. Photo: Ruth Renner, New Zealand.**

**Right: Hybrid from a cross between a Peacock and a Guinea hen.**

**Photo: Archief Avicultura.**

**Below: Offspring of a cross between a white domesticated Goose and a Mute Swan, also called: Swoose. The type and neck remind of the swan; the head resembles the goose. Photo from 2001 by Nico van Wijk (NL).**



### **Because of Beauty**

Of course it was inevitable that one started crossing species because of beauty and the colouring of the feathers. We can see these examples regularly at Bird Shows, (the hybrid class). Or the Spalding peacock; a Hybrid of a crossing

between the Green Peacock (*Pavo muticus*) from Malaysia and the Blue Peacock (*Pavo cristatus*) from India, which is known mostly in America for its beautiful colour. They are named after Mrs. Spalding from California who helped with the creation of this hybrid. They really are an average between the two species, not only in colour, also in toughness and temperament. Spalding peacocks are fertile and can be used for breeding, although the offspring in the F2 will vary in the amount of blue and green 'Blood'.

**Right: Mounted skin of a Spalding Peacock.**

### **Not so harmless**

Happy to say that 9 times out of 10 the results of these experiments are infertile. Many species developed a natural 'barrier' to prevent reproducing with other kinds. If the amount of chromosome pairs does not fit, there will be no offspring. However, if it does fit, hybrids





can be produced. We may infer that in Hybrids the chromosomes from each of the parents may lie side by side in the body cells and divide normally, but when it comes to the period of fusion in the germ-cell, they will not unite or else unite incompletely.

It all seems so innocent and harmless, but some species miss the so called "inbuilt" barrier. Especially close related kinds can produce fertile offspring. It means a risk for (genetic) impureness on both sides. This holds for the Spalding peacock, but also for the hybrids between the Collared Turtle Dove (*Streptopelia Decaocto*) and the Barbary/Ringneck Dove (*Streptopelia risoria*) or the Grey Lag (*Anser anser*) and the Swan goose (*Anser cygnoides*).

Also the Duck hybrids mentioned earlier are fertile, with the exception of the offspring of the Muscovy x Mallard.

Another example is the crossing between the Lady Amherst and the Golden pheasant. The Lady Amherst pheasant (*Chrysolophus amherstiae*), named after Lady Amherst, who imported this species from China to England, appeared to be able to successfully mate with the Golden Pheasant (*Chrysolophus pictus*) and their offspring was fertile.

In the beginning, when these birds were imported to Europe there was a shortage in female birds, because these were weaker or died earlier. This was the reason that Golden Pheasants females, which were more hardy, were mated to the Lady Amherst pheasants males.

Due to this the worldwide population of Lady Amherst pheasants in captivity is impure.

broodage van  
*Chrysolophus pictus*  
*Chrysolophus amherstiae*  
 x *Chrysolophus pictus* ♂  
 S. S. Aladus, Gronsveld  
 4 March 1919



**Left: Hybrid Cabot Tragopan.  
 Insert: This is how a pure Cabot Tragopan looks.  
 Photo: André v.d. Wielen.**



Same thing happened with the Tragopan. This however was mainly out of ignorance, because the hens of the different species are very much alike. One intends to have a true couple but creates a hybrid. Once the mistake is made, it will be more and more difficult to select the pure kinds from the hybrids.

This article is certainly not meant to encourage you. Let's keep everything as pure as it should be. Many species are already rare in nature and in captivity and it is our duty to preserve them.

*"Man, as he extends his dominion over earth and ocean, is generally a Destroyer, occasionally an Enslaver, and so far a Protector; hence, sometimes even a Selector and Improver, but never a Creator". Rev. Edmund Saul Dixon, 1857.*

**Below: Hybrid from Guinea cock x Naked Neck hen, 7 months old.**

**Photo: [www.feathersite.com](http://www.feathersite.com) by H. S. Wong.**



With our thanks to the National Museum of Natural History NATURALIS, Leiden The Netherlands. [www.naturalis.nl/](http://www.naturalis.nl/)

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