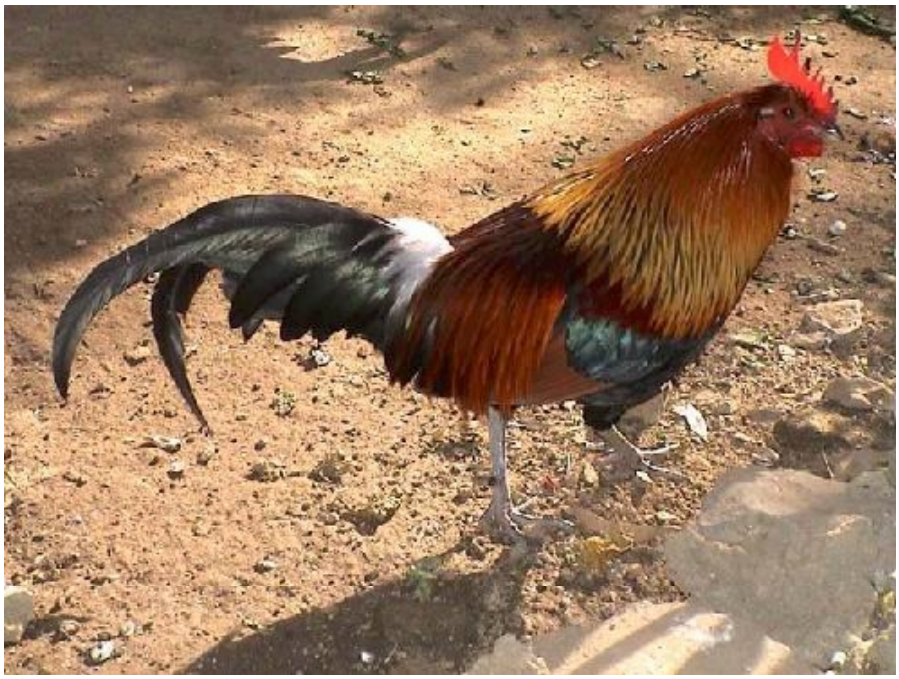
Red junglefowl – What is pure and what is not?

The Red junglefowl, *Gallus gallu*s, is found from Northern India to Indonesia. There are five sub-species:

- *G. g. spadiceus* - SW Yunnan, E Arunachal, Myanmar, Thailand (except East), Peninsular Malaysia and N Sumatra.
- *G. g. gallus* - Cambodia, C and S Vietnam, C and S Laos, E Thailand.
- *G. g. jabouellei* - N Vietnam, SE Yunnan, Hainan.
- *G. g. murghi* - India, Nepal, Bhutan & Bangladesh.
- *G. g. bankiva* - S. Sumatra, Java & Bali



Male Red junglefowl, Himachal Pradesh, N. India Photo John Corder

Supposedly, all domestic poultry is descended from the Red junglefowl, with records of domestication dating back more than 5,000 years. In most areas where wild Red junglefowl still exist, free-ranging domestic poultry can also readily be found, which has resulted in hybridisation. Several knowledgeable researchers have even conjectured that pure Red junglefowl might be the rarest pheasant species in the world, or even may possibly be extinct. In January 1996, Lehr Brisbin Jr, wrote in Tragopan, “I fear the possibility that this unique wild ancestor of a worldwide multi-billion dollar industry might be quietly slipping into genetic extinction before we become aware of and can appropriately respond to the situation.”

Hybridisation with domestic poultry has probably been happening for thousands of years, so it is unlikely that we could examine 18 th , 19 th or 20 th century museum skins of Red junglefowl to provide DNA evidence of what actually constitutes a pure Red junglefowl.

Some of the key findings on determining pure birds were described by Jean Delacour in *The Pheasants of the World*. However, his book was written in the middle of the 20 th century, so he might not have been describing pure birds. In any event, there are a number of areas of conjecture where there is insufficient clarity. In addition to Delacour’s evidence, the water is sometimes muddied by those who may or may not have described pure birds in terms of justifying the birds that they themselves keep.

I am quite certain that I do not have the expertise to add much to the debate about pure characteristics, but during recent visits to Northern India it was quite obvious that domestic poultry in that area did not seem to range freely in the same way that I have seen in many other Asian countries. When discussing this with local people, they have told me that there are far too many predators to let loose their poultry into the surrounding countryside. Leopards, Leopard cats and large snakes were all quoted as common poultry killers. Leopards seem to be quite common around Himalayan villages, often feeding on any village dog that does not have a protective spiked collar. One male leopard appeared on a garage roof of the Chail Palace Hotel whilst hunting monkeys when I was staying there in November, and it was probably no more than about 10m from

me. These predators would have existed in even greater numbers if we were to go back in time, so perhaps any wild Red junglefowl in this area might not have had the opportunity to hybridize with domestic stock.

According to the poultry industry, some 24 billion domestic chickens exist in the world at any one time – that is four for every human on the planet. With the current outbreaks of disease such as avian flu, when we read of millions of chickens being slaughtered, pure Red junglefowl may provide the only genetic base to "re-create" domestic poultry stocks. In addition, reading back numbers of WPA News, we can.find clear evidence where different species of junglefowlhave already been used in finding medical advances in the treatment in humans of leukaemia, AIDS and malaria. As the organisations with responsibility for all of the world's galliformes, surely PSG and WPA should take leading roles in determining what is, and what is not pure Red junglefowl.

Female Red junglefowl, Himachal Pradesh, N. India Photo John Corder

Whenever I have seen wild Red junglefowl, whether it be in Malaysia, Indonesia, Thailand, Vietnam or India, they have always been extremely flighty and difficult to observe. In my limited field experience, they seem to be the most prone to flightiness of all the pheasants, which must make it very difficult to undertake any form of detailed field study in comparison with domestic poultry. However, at the beginning of the 1980s, a group of wild Red junglefowl was rescued from the wild and housed in some aviaries belonging to the Himachal Pradesh Forest Department in N. India. These aviaries, at Kharion, are located in the foothills of the Himalayas at around 2,500m.

Red junglefowl nest in bamboo thicket. Photo John Corder

The birds bred well in captivity, and they and their progeny continue to live in the six large Kharion aviaries. These birds immediately struck me as being very different from the so-called Red junglefowl I was used to seeing in captivity in Europe. They are incredibly wild, flying at the least disturbance and are small and slim. The males have a very abbreviated last syllable to their crow. From my limited knowledge, they appeared to show many of the characteristics of what I had read about pure junglefowl. I read as much as I could find about pure junglefowl and was helped considerably by Jack Killeen in the UK and by Ludo Pinceel, Chairman of the European Junglefowl Group.

I have tried to assemble a list of characteristics of pure junglefowl; these are not definitive or necessarily complete, but they have given something of a yardstick against which to measure the Kharion birds.

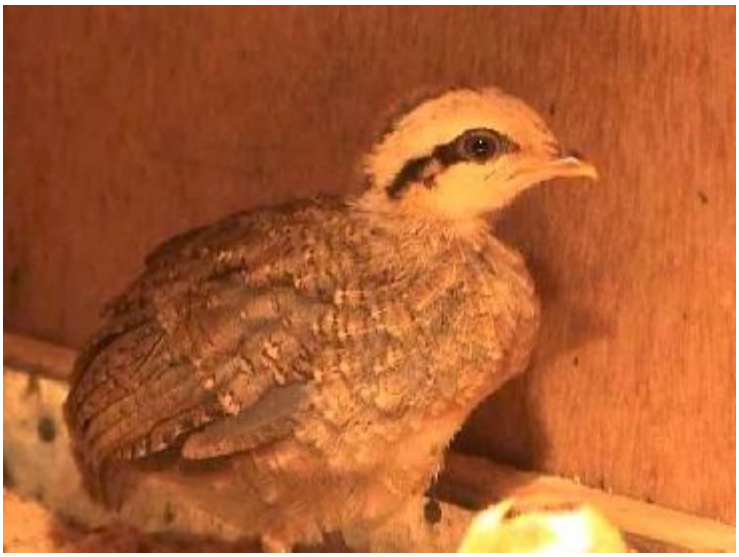
Red junglefowl chicks at 4 about days at Shimla Bird Park. Photo John Corder

Possible characteristics for pure male Red junglefowl

1. The crowing call is much abbreviated, cut off short on the last syllable.
2. There is a white patch at the base of the tail.
3. It has a small, long-legged appearance and is very lively.
4. The tail is not upright, but goes backwards, not a lot above the horizontal and sometimes lowers.
5. It has an upright stance, very lively, extremely active and taking to flight readily. When frightened it looks very slim.
6. Eclipse plumage means different things to different people. A mallard drake looks very like a female in its eclipse plumage; only the bib colour doesn't change. A male Red junglefowl does not have this total eclipse, but has a partial eclipse. This is seen in the loss of the cape, whilst it moults out, and in a dulling of the feathers, especially those of the breast - in some areas it seems almost black. None of this is noticeable in the female.
7. There does not seem to be a reliable definition about the white or Red lobe colouration. However, any variation in birds from the same clutch or area might well mean that 2 races have been bred together, whether naturally or in captivity. Birds in Northern India all seem to have Red lobes, whereas in Malaysia they are usually white.
8. It has quite dark grey legs. Inconsistency in the colour of the toenails or shanks is also likely to indicate inter-race breeding or hybridisation with domestic birds.
9. In Delacour's book, Pheasants of the World, the black eye-stripe on downy chicks goes through the eye, but then might go up or down. Further investigation is necessary, but inconsistency might well indicate hybridisation. Jack Killeen made observations with the chicks hatched from the eggs brought to the UK from Nepal – and found inconsistency at the end of the eye-stripe. Therefore he felt they may not have been pure.
10. Ludo feels that only two elongated central tail feathers (sickle feathers) were present in all pure male junglefowl that he tested, and that more indicates hybridisation.

Possible characteristics for pure female Red junglefowl

1. Has no comb; however, a vestigial comb could often be found in birds tested by Ludo, and in Himachal birds the comb was sometimes visible and sometimes not on the same bird.
2. Lays a small clutch of eggs, no more than 6, but usually less. Domestic poultry lay many more, so hybridisation will normally result in an increased number of eggs.
3. It is a small, slender bird with no width across the shoulders.
4. The legs are quite a dark grey, whereas those of domestic stock are much lighter, or chicks from the same hen might have legs of different shades of grey.
5. An example of the posture might be seen in domestic poultry – compare a Dutch Bantam (in the Black/Red or Gold style) with the stance of a Brown Leghorn. The former is much nearer to Red junglefowl.



Red junglefowl chick at about 4 weeks; Shimla Bird Park. Photo John Corder

Possible characteristics for pure RJF chicks

1. Can fly very early, maybe beginning at 4 to 6 days
2. Stay very close to their hen, following her instinctively
3. Extremely active, much more so than

poultry or even most pheasant chicks. At this stage I should state clearly that I am sure that my lists are not definitive. I am no expert in this field and feel sure that others will wish to have an input to this discussion.

In order to shed more light on the Himachal birds, the following strategies are being adopted during the present breeding season. A number of pairs have been together to monitor egg numbers laid by single hens. The dates that eggs are laid are also being recorded. So far, hens that have begun parent-rearing have laid clutches of only 3 to 5 eggs. Young chicks will be examined closely and photographed, particularly to obtain a record of the eye-stripe. The males' partial eclipse plumage will be monitored and photographed.

In WPA News, May 96, Lehr Brisbin Jr. wrote, "…These birds are extremely wary, flighty and impossible to exhibit satisfactorily anywhere under any conditions in which they will be disturbed by public visitation. They need to be kept in secluded facilities…" What has proved very interesting in Himachal Pradesh is that the birds in Kharion aviaries are unbelievably wild, panicking and flying at the least disturbance. This is exactly the sort of behaviour that Lehr Brisbin describes. However, some of the progeny of these birds have been relocated to another large aviary in the State capital, Shimla. Here, the birds have been placed in a walk-in aviary and have frequent contact with members of the public. Within seconds of seeing them, some of the more confident birds were eating peanuts that I happened to find in my pocket (like any pheasant breeder). The behaviour of the 2 groups of birds was amazingly different and Jack Killeen felt that he was looking at 2 different types of bird. However, I have been assured that the Kharion birds were used as the founder stock for the junglefowl in this aviary. Like many other pheasant breeders, we have often found that frequent association with people will usually result in birds becoming habituated and no longer stressed by human presence. Those who went on the Post Symposium.Tour to Sarahan in April had an opportunity to see and judge this for themselves.

A very recent, parallel study of Red junglefowl in the same area by WPA's South Asia Field Officer, Dr. Rahul Kaul, has come to the same conclusion that pure Red junglefowl still appear to exist in N. India, and are represented by the birds currently in captivity.

I am particularly grateful to Jack Killeen and Ludo Pinceel for their input to many of the characteristics I have listed here. However, I should state that some of the views expressed here are my own and that universal agreement is not yet forthcoming. I do not consider myself to have a great deal of expertise in this subject but do hope that this article might eventually allow WPA to identify critical factors so that we might then be in a position to offer expert advice to others who need it.

John Corder