

# Copper Pheasant Yamadori (Jpn) *Syrnaticus soemmerringii*

## Morphology and classification

Classification: Galliformes Phasianidae

Wing length:	♂ 205-230mm	♀ 192-219mm
Tail length:	♂ 415-952mm	♀ 164-205mm
Culmen length:	♂ 23-31mm	♀ 22-26mm
Tarsus length:	♂ 57-69mm	♀ 53-60mm
Weight:	♂ 943-1348g	♀ 745-1000g

All measurement values are of subspecies *Syrnaticus soemmerringii scintillans* after Kiyosu (1978).

### Appearance:

Plumage colors of Copper Pheasants vary between subspecies. In general, however, male is reddish brown on the upper and underparts with black, chestnut, yellow and white lateral bars in the long tail (Photo 1). In the subspecies of the southern Japan (*S.s. soemmerringii* and *ijimae*), the plumage is generally darker with dark red brown and black horizontal bars in the tail. The southernmost subspecies (*ijimae*) has broad white fringes to feathers of rump. On the other hand, all of females have generally inconspicuous brown as female Green Pheasants, but tinged with grayish brown or reddish brown. A reddish brown tail with a white tip is characteristic of the female plumage. The females of *soemmerringii* and *ijimae* are darker than those of the other subspecies as in the males.



Photo 1. Male Copper Pheasant *Syrnaticus soemmerringii scintillans*.

### Vocalization:

Copper Pheasants hardly ever call. When alarmed, however, they occasionally utter a low "Kuk-kuk" tone or a high pitched "Kyuk-kyuk" and "Kichik-kichik" calls. Males make a loud sound by the wing-whirring display (drumming), especially during the breeding season, to threaten any approaching enemies.

## Distribution and Habitat

### Distribution:

The Copper Pheasant is an endemic species of Japan and distributed as a resident in three (Honshu, Shikoku and Kyushu) of the four main islands. In the snow-covered regions, however, some individuals descend to lower altitudes during winter. The Copper Pheasant is divided into five subspecies based on male plumage coloration, tail feather patterns and other features. Of Copper Pheasant subspecies, *scintillans* is distributed from the Kansai region up to Aomori Prefecture, northernmost Honshu. *intermedius* occurs in the Chugoku region and Shikoku, while *subrufus* ranges in a part of Yamaguchi, Ehime and Kochi Prefectures as well as the Boso, Izu and Kii Peninsulas. *soemmerringii* and *ijimae* are found in central to northern Kyushu and southern Kyushu, respectively. In addition, there is a small number of introduced populations in Hokkaido, northernmost main island and other islands such as Awaji, Shodo, Sado and the Oki Islands.

The classification of *S.s. scintillans*, *intermedius* and *subrufus* in particular has been frequently questioned among some overseas researchers as well, however, because the borderline between the subspecies is indistinct, the distributions of different subspecies are continuous in some regions and plumage colors vary greatly between individuals in the same population.

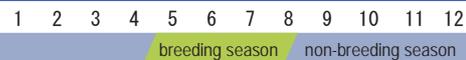
In addition, the presence or absence of a white part of the rump in particular frequently plays a decisive role in distinguishing *soemmerringii* from *ijimae*, but some birds have a considera-

bly smaller white part in the boundary zone between the two subspecies ranges (Kawaji 2004). Confusion between the two subspecies poses a problem to game hunters and government officials concerned every year because *ijimae* has been removed from game bird list since 1979 due to the population decline. Since subspecies classification could become a major issue in conservation and social scenes in the future, genetic analyses are currently underway (Sakanashi et al. 2006).

### Habitat:

Copper Pheasants are a forest dweller, generally preferring a broad-leaved forest. But they also occur in conifer plantations, such as Japanese cedar and cypress. They occasionally bathe in the sun and dust in grasslands of a cutover.

## Life history



### Breeding system:

Copper Pheasants are assumed to be polygamous like Common Pheasants *Phasianus colchicus* (Kiyosu 1978), but a recent study suggested that they were monogamous (Takahashi 2011). The male is frequently observed to jealously guard a single female for a long period of time in the field. The female exclusively incubates and primarily takes care of the chicks. In the Kanto region, central Japan, males are engaged in a fierce battle of jumping and kicking each other around the end of March. After such struggles, the male usually moves about with a female.

### Nest and egg:

Copper Pheasants make a nesting depression 20-30 cm deep on the ground under a fallen tree, at the base of a large tree and in grasslands at a forest edge. They lay a small amount of tree leaves and dead grass on the bottom of a depression as nest lining.

The clutch size is usually 7-10 eggs. The mean egg size is 47.4 mm by 35.4 mm. An egg weighs 31.9 g on average and it is uniformly light tan in color.

### Incubation and nestling periods, and fledging rate:

A female usually incubates eggs for about 24 days. The chicks leave the nest a few hours after they hatch and move with their mother, feeding by themselves. The young learn to fly to some extent about two weeks after hatching, but it is assumed that they spend a few months primarily with the female parent. When you approach a small young bird in the field, the female parent may show threat behavior (a vigorous mock attack) or feign injury. Juveniles grow almost to their full size about half a year after hatching, when they are not distinguishable from adults. A group consisting of multiple males and females are occasionally observed in this period, but it is unclear whether they are all the members of the same family. Some adults start to pair as early as late September.

## Diet and foraging behavior

Since Copper Pheasants are a game bird, the crop contents of individuals shot in the hunting season were studied (Ogasawara 1968, Kobayashi 1996). The crop contents consisted primarily of vegetable matter including green leaf stems, such as ferns and bamboo grasses, the acorns of oak and beech and the berries of mistletoe and *Ophiopogon japonicus*. The author also detected ferns at a high rate in the crops of a few dozens of Copper Pheasants in winter (Kawaji & Yokoyama 2009). In addition, it is remarkable that fruits and dead leaves of Japanese cedar *Cryptomeria japonica* were found in their crops as well. It is known that Copper Pheasants are frequently observed in conifer plantations. It is assumed,

therefore, that they use the plantations not only as a shelter but also probably as a feeding ground.

It is known that the chicks and young birds need a considerable amount of food of animal matter to grow normally in captivity, but the diet of the wild population is poorly understood in the breeding season. Copper Pheasants are also observed to peck at the ground while foraging for food, but they frequently tear off fern and other leaves, which suggests that they prefer leaves. When mistletoe bears its fruits, they also peck at the fruits on the tree.

## Topics of ecology, behavior and conservation

### ● Decline in the number of hunted Copper Pheasants and the issue of release

Although Copper Pheasants are an endemic species of Japan, they have long been hunted as a game bird. However, recent decrease in the number of hunted birds has aroused anxiety that Copper Pheasants may have declined in the wild. Captive-raised birds have been released primarily in eastern and northern Japan since 1973 to restore the wild populations (Fig. 1). However, the study of the survival rate of released birds was far from satisfactory because it only depended on the leg band recovery of hunted birds. The telemetry study of released birds showed that the survival rates varied with seasons and sexes. Therefore, more effective release approaches that take this result into consideration are needed (Kawaji et al. 2009). In addition, Copper Pheasants are classified into five subspecies based on such features as plumage coloration and tail feather morphology, but the possibility of genetic contamination has been pointed out because it is suspected that non-native subspecies were released in some areas in the past. In addition, Copper Pheasants were released in regions originally free of them, such as Hokkaido, northern Japan and Sado Island, Niigata Prefecture. The released Copper Pheasants may have some impact on the local ecosystem (Kawaji 2002).

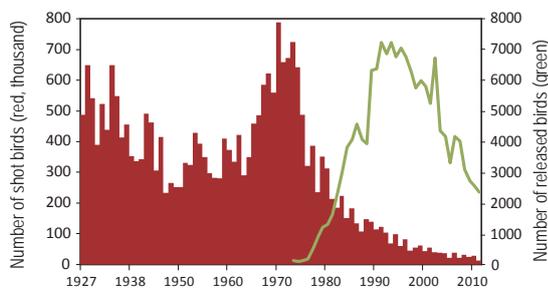


Fig. 1. Changes in the number of hunted and released Copper Pheasants. Y axis represents the number of birds shot (left) or released (right), and X-axis the year.

### ● Home range

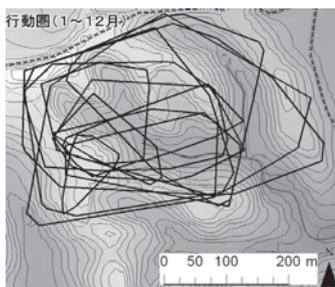


Fig. 2. Home range of a male Copper Pheasant from January to December.

Monographs of pheasants have carried no description of the home range of Copper Pheasants. The telemetry study of a male Copper Pheasant showed that it ranged in an area of about 10 ha throughout the year in a favorable habitat with an adequate supply of food (Fig. 2). They probably have a fairly large home range in a habitat with adverse conditions, such as heavy snowfall in winter. Copper Pheasants do

not show a strong preference for high tree layer. Since they are assumed to favor a habitat with lush ferns in winter, it is pointed out that forest floor vegetation plays as an important role as overstories in their habitat.

### ● Roost

It is said that forest pheasants usually roost on a tree at night except for a female incubating in a nest on the ground. This is regarded as a means to avoid nocturnal predators, such as carnivorous terrestrial mammals.

The male with a transmitter mentioned before roosted on the ground as well (Kawaji 2006). However, the ground roost of this male was located on a flat area above a steep slope on the side of a forest road, and therefore it could readily escape by rushing down the slope even if it is attacked from behind while sleeping. Due to the difficulty of direct observation of forest pheasants, such as Copper Pheasants, descriptions of roosting behavior are extremely limited. Further biotracking studies are expected to reveal some new aspects of Copper Pheasant ecology in the future.

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Languages of literature cited other than English: [J] in Japanese, [J+E] in Japanese with English summary.

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Since I first saw a beautiful male *Symraticus soemmerringii ijimae* in the woods in the vicinity of Kagoshima City, southern Kyushu where I lived several decades ago, I had wanted to study mysterious Copper Pheasants sometime. However, I moved to Sapporo, Hokkaido, northern Japan where the species does not occur originally. One day when the idea of studying Copper Pheasants started to slip my mind, an acquaintance of mine brought me a "weakened pheasant", which was a male Copper Pheasant (*S. s. subrufus*) to my surprise. I took this incident as some sort of fate and have begun to study this species since I moved to Tsukuba, Ibaraki Prefecture, central Japan. Since I feel my legs have become noticeably feeble lately, I am looking forward to meeting some young researchers who can run up steep slopes as fast as Copper Pheasants. Why not join me in a pheasant study? It is a lot of fun.



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