

White-cheeked Starling Mukudori (Jpn) *Spodiopsar cineraceus*

Morphology and classification

Classification: Passeriformes Sturnidae

Total length: 238mm (225-243)
 Wing length: ♂ 128.9±2.8mm ♀ 124.9±2.6mm
 Tail length: ♂ 65.9±2.2mm ♀ 62.5±2.9mm
 Culmen length: 26mm (24-27) Tarsus length: 30mm (27-31)
 Weight: 23.0g (18.0-26.0)

Measurements after Enomoto (1941), except for the wing and tail lengths measured in Sagami-hara, Kanagawa Prefecture (♂ = 272, ♀ = 299) by the author.

Appearance:

Males and females are similar in plumage coloration. The back is dark brown and the belly is gray. The crown, wing and tail are tinged with black. There is an irregular white patch from the crown to the cheek. The bright orange leg and bill contrast sharply with the darker plumage. The white rump stands out well when flying. In the breeding period, the two-tone plumage become more distinct and the leg and bill also increase in vividness in males. In females, on the other hand, the whole plumage including the leg and bill is less vivid than males. The plumage difference in the two sexes is discernible when they are perched side-by-side, but not so distinguishable when a bird is alone due to individual variation.



Photo 1. Male (above) and apparently a female (below).

Vocalization:

White-cheeked Starlings have a wide variety of vocalization, ranging from "Kyur-kyur" to "Jah-jah". A high-pitched call of White-cheeked Starlings is used as one of the measures to expel them from their urban roost (See "Roost"). This vocalization is called a "distress call", which they utter when they are captured by a predator.

Distribution and Habitat

Distribution:

White-cheeked Starlings breed in Mongolia, the Russian Far East (Primorskii and Siberia) northern China, the Korean Peninsula and Japan, and winter in southern China, Taiwan and southeastern Japan. They are year-round residents in most regions of Japan, but they are not abundant south of Kyushu (the southernmost main island). They used to be a summer resident in Hokkaido (the northernmost main island) and left the breeding grounds in autumn. In recent years (at least after 2003), wintering birds have increased in the southern and central areas of Hokkaido.

Habitat:

White-cheeked Starlings occur in farmland, pastures, orchards, woodlands around a village, parks, gardens and golf links from lowlands to hills.

Life history



Breeding system:

The breeding period is from late March to July. They breed once or twice a year. Though they are generally monogamous,

they rarely breed in polygamy. It is assumed that they may form a pair before the breeding season starts because pair confirmation behavior is observed in a wintering flock. Fierce disputes frequently arise over favorable nest sites in March. They establish their breeding territory within a several meter radius of a nest.

Nest:

White-cheeked Starlings build a nest in tree hollows in an open wood, old nest holes of a woodpecker, shutter cases of a house, gaps in a tiled roof and a stone wall. They lay dead grass and fallen leaves in a nest and line an inner cup with feathers, fur, cellophane paper and fragments of nylon.

Egg:

The clutch size is 4-7 eggs and larger in the first breeding than in the second breeding. The egg is generally pale bluish green, but the coloration, size and shape vary from one bird to another.



Photo 2. Eggs of White-cheeked Starlings.

Incubation and nestling periods:

Both males and females incubate eggs, but females alone during the night. Eggs hatch in about 12 days. Males and females feed nestlings, which fledge about 23 days after hatching. Fledglings spend about a month with their parents in a family flock. When they become independent, they feed in a juvenile flock and form a summer roost with adult birds.

Roost:

The colonial roost of White-cheeked Starlings consists of a summer and winter roosts. A large flock of White-cheeked Starlings presents a magnificent spectacle when they are circling the roost site before going to roost in the evening from summer to autumn. In summer they used to roost in bamboo grass thickets, coppices and reed beds in suburban areas. In winter, on the other hand, they used bamboo groves instead when reed beds were dead and coppices were bare of leaves. In recent years, however, they have started to use roadside trees as a summer roost in urban areas, and they have caused friction with city dwellers because of their noise and feces. Therefore, various measures have been adopted to drive White-cheeked Starlings out of their roost. As a result, they have changed their roost from deciduous trees to ever-green trees and further to man-made structures, such as billboards on top of buildings and electric wires. In addition, they have more frequently come to use the same site as a roost in both summer and winter as they shift their roost to man-made structures.

Diet and foraging behavior

White-cheeked Starlings are omnivorous. The diet include earthworms and insects as well as cherries (early summer), the seeds (autumn) of dogwoods, *Sophora japonica* and *Ligustrum japonicum*. They also eat peaches, pears, grapes, apples and persimmons, but not *Citrus* fruits. In autumn and winter they visit farmland in a large flock and insert the bill into the soil to forage for insects walking on the ground.

Topics of ecology, behavior and conservation

● Brood parasitism within species

There are four parasitic bird species, such as Common Cuckoos (*Cuculus canorus*) and Lesser Cuckoos (*C. poliocephalus*) in Japan that parasitize other species nests. Some other birds, on the other hand, deposit their eggs in their conspecific nests, which is called "intraspecific brood parasitism". In this intraspecific parasitism, parasites also leave it to their hosts to incubate their eggs and raise their nestlings. More than 200 bird species are known to commit

intraspecific brood parasitism in the world, but many more species are suspected of intraspecific parasitism. White-cheeked Starlings are known to be an intraspecific brood parasite in Japan. I set up 180 nest boxes to study the breeding ecology of White-cheeked Starlings in a golf course in Sagami-hara City, Kanagawa Pref., central Japan. The study showed that intraspecific brood parasitism occurred in about 20% of the nests, which was a relatively high rate among intraspecific brood parasites. When parasites deposited their eggs in the nest of the hosts which were at the egg-laying period, the parasitic eggs hatched in the same rate as those of the host and the parasite hatchlings fledged. The eggs deposited at the early incubation stage (the first day), on the other hand, hatched later and therefore the hatchlings were smaller than those of the hosts, with lower survival rate (fledging cases were few). The eggs deposited at the late incubation stage did not hatch due to the shortage of incubation days (Fig. 1). Parasites need to deposit their eggs when the hosts are at

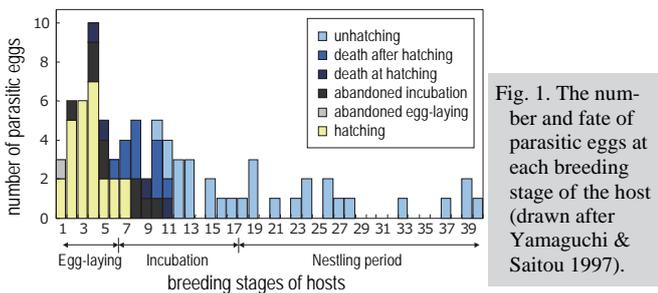


Fig. 1. The number and fate of parasitic eggs at each breeding stage of the host (drawn after Yamaguchi & Saitou 1997).

the egg-laying stage. However, they also deposit their eggs in the nests of the hosts which are at the incubation stage, which suggests that they deposit their eggs opportunistically rather than in the appropriate time based on their careful observation.

It is assumed that brood parasitism has some effect on hosts because they must incubate more eggs and raise more nestlings than they would otherwise do. Thus I compared hatching and fledging rates between unparasitised and parasitised pairs. There was no significant difference in hatching rate between the pairs, which suggests that brood parasitism has no effect on the incubation of hosts. However, the fledging rate was significantly reduced in the parasitised pairs, which shows that brood parasitism has a great impact on the chick-raising of hosts (Fig. 2).

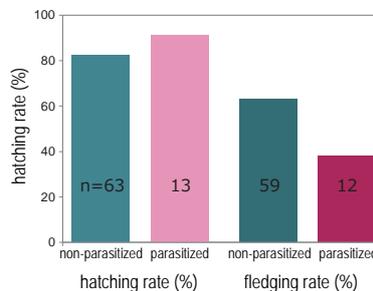


Fig. 2. The rates of hatching and fledging in the parasitised and non-parasitised nests (from Yamaguchi & Saitou 1997). Figures in bars show the number of nests.

It should be natural that White-cheeked Starlings remove deposited eggs from the nest or defend the nest against brood parasites because brood parasitism may have a negative impact on the breeding performance, but none of them were observed to take these counter-measures.

When I experimentally removed some of the nest boxes and deprived some pairs of their breeding opportunities, the proportion of parasitized nests increased, which suggests that the pairs which would otherwise breed normally deposit their eggs in the nests of other conspecific pairs.

● Relationship of White-cheeked Starlings to people

White-cheeked Starlings were once considered to be a useful bird because they ate a large amount of insect pests. Since the 1960s, however, they have started to inflict damage on fruits such as pears, and therefore they are generally regarded as a pest bird nowadays. In recent years, White-cheeked Starlings roosting in urban areas

have generated friction with city-dwellers, which attracts more attention from the media from summer to autumn every year than their crop damage. In their roost sites of busy streets, for instance, measures such as the large-scale pruning and netting of roadside trees and the replay of their distress call have been adopted to drive them away. However, they do not move to suburban areas but only shift their roosts a short distance to nearby roadside trees, man-made structures and the busy streets of neighboring towns. These efforts often disperse their roost sites and exacerbate the situation. Although the municipality and residents of the original roost site may be satisfied when White-cheeked Starlings move to other areas, this is not the solution of the problem from a global point of view. It is only a stopgap measure. Some municipalities have been recently trying to find a way to coexist with White-cheeked Starlings by leaving less troublesome roosts alone, instead of expelling them thoroughly.

● Hybrid of White-cheeked Starlings and Red-billed Starlings

In addition to White-cheeked Starlings, Sturnidae is represented in Japan by Chestnut-cheeked Starlings (*Agropsar philippensis*), Red-billed Starlings (*Spodiopsar sericeus*), Daurian Starlings (*A. sturninus*), White-shouldered Starlings (*Sturnia sinensis*) and Common Starlings (*Sturnus vulgaris*). There is an observation record of birds similar in plumage coloration to a hybrid of White-cheeked Starlings and Red-billed Starlings in Japan. A female White-cheeked Starling and a male Red-billed Starling were observed to enter the same nest hole and feed the nestlings in Sukumo City, Kochi Pref. in 2009. The young which were assumed to be a hybrid of the two species fledged from this nest. Red-billed Starlings have been observed since 2007 in this city, which suggests that there was a good chance that both the species would interbreed because they share a common habitat and ecology. I would like to pay attention to breeding between the species of Sturnidae including Red-billed and White-cheeked Starlings in other areas in the future.

Literature

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I studied White-cheeked Starlings in graduate school. It was hard on me to carry out a research in the field from morning till evening every day in the breeding season. But looking back now, I really feel that I was very happy in those days when I could be deeply absorbed in the study. Nowadays, I wish to keep studying with an inquiring mind.
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