

Japanese (Grey) Thrush Kuro-Tsugumi (Jpn) *Turdus cardis*

Morphology and classification

Classification: Passeriformes Muscicapidae

Total length: 210-225mm
 Wing length: ♂ 111.3 ± 2.9mm (n = 60) ♀ 108.9 ± 3.1mm (47)
 Tail length: ♂ 75.7 ± 2.8mm (60) ♀ 72.4 ± 2.4mm (48)
 Culmen length: ♂ 20.7 ± 1.0mm (62) ♀ 20.3 ± 3.1mm (50)
 Tarsus length: ♂ 30.6 ± 0.9mm (62) ♀ 29.9 ± 1.2mm (51)
 Weight: 50-65g (There is a record of a female of 83.0g in early November.)

Total length after Clement (2000), the other measurements after the banding record (mean ± SD) in Kanazawa City in Ishikawa Prefecture by the author.

Appearance:

Japanese Thrush males are black on the upperpart and from the head to the chest. The head is sometimes clearly distinguished from the back, which is tinged with gray, but the difference is not readily discernible in a dark wood. The abdomen is scattered with black triangular flecks on a white ground. The bill and an area around the eye are yellow. Females are ocher on the upperpart and in the face. They are white from the throat to the abdomen with brownish black and orange flecks. Some young males are similar in plumage coloration to females. On rare occasions, females may have dark gray upperpart that look remarkably similar to young males.



Photo 1. Adult Japanese Thrush male (above) and female (middle). The female with a gray upperpart (below) had a brood patch in the abdomen and there was no change in plumage coloration over time.

Vocalization:

Japanese Thrushes call "Kyott" in a low voice and utter "Dzee" when flying. They call "Tsooo" or "Heee" intermittently in a thin high-pitched voice when predators approach the nest.

A full song (complete song) lasts for 2-4 seconds at a time. It is divided into the first and second halves, which are called a "whistle part" and a "trill part", respectively. But the trill part is often omitted. One bird has about 20 types of phrases in a whistle part. Some whistle parts consist of one phrase, such as "Kik-koke-kikk" and others are composed of the same phrase repeated 2-4 times, such as "Kiyoko, kiyoko, kiyoko". Two or more types of phrases may be used in one whistle part (Ishizuka 2006). A trill is a muttering note, such as "Tsrrin", "Tspiee, tspiee" and "Jijee", which is called a "twitter part" in Common Blackbirds *Turdus merula* (Dabelsteen 1984). One bird has about 70 types of phrases. Japanese Thrushes sometimes continue trills for several minutes consecutively when they (whether males or females) are close together, which suggests that trills play a major role in territorial defense and pair formation (Ishizuka 2006, Ishizuka 2008). Incidentally, caution is required when you distinguish Japanese Thrushes and Grey-backed Thrushes (*Turdus hortulorum*) in spring in the regions along the Sea of Japan because the two species are strikingly similar in both call and song (Ishizuka & Tei 2004).

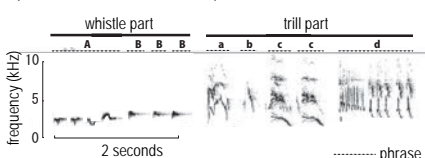


Fig. 1. Sonagram of a typical full song. The same letter of the alphabet represents the same type of phrase.

Distribution and Habitat

Distribution:

Japanese Thrushes breed throughout Japan. They also breed in the forests of lowlands north of the Hokuriku region, central Japan, but they generally breed in the woods of hills and

mountains at an elevation of 300-1500 m above sea level. Outside of Japan, on the other hand, they are assumed to breed in the inland area of Chinese continent (Yamashina 1981). They winter primarily from southern China to the northern part of the Indo-China Peninsula.

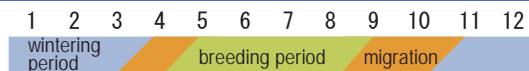


Photo 2. Nesting environment with abundant vines.

Habitat:

They breed in open woodlands as well as broad-leaved forests and conifer plantations. However, the breeding density varies greatly between similar-looking forests.

Life history



Breeding system:

Japanese Thrushes mostly return to the breeding grounds in late April, though it is not uncommon for them to arrive in the breeding sites around April 10 in central Japan. Single males sing in an open wood or at the edge of a forest all day long. However, they stop singing to guard their partner immediately after they have paired. The species is generally a monogamous breeder, but some males breed with two females (Ishizuka 2009b).

Nest:

Females start to build a nest in the woods with a thick bush layer in late April, while males move their song range from a forest edge to a forest interior. They prefer as a nest site the base of a dead branch covered with vines and climbing plants, such as Akebi (*Akebiae Caulis*), Japanese honeysuckle (*Lonicera japonica*) and multi-flora rose. They build a nest at a height of 1.7m on average above the ground, but they occasionally nest in a conifer canopy 5-10m in height as well. They build a cup-shaped nest using dead grass stems and roots and mixing some mud with them. Most nests have mosses attached on the outside. The nest is about 140mm in diameter and about 50mm in depth.



Photo 3. Nest built on an artificial structure.

Eggs, incubation and nestling periods and fledging rate:

The clutch size is mostly four eggs. The egg is scattered with reddish brown flecks on a pale blue ground. Females alone incubate eggs and nestlings. The incubation period is about 13 days. Males feed nestlings more than six times out of ten and tend to deliver a larger amount of food (a greater number of earthworms) to the nest at a time as well. Nestlings fledge about 12 days after hatching. Females begin to build a nest again 2-7 days after the nestlings have fledged. Some pairs fledge their nestlings successfully three times in one breeding season. (Miyazawa 1971). Japanese Thrushes usually breed until August. Most of them leave the breeding grounds in October and last birds usually in early November, but some birds exceptionally winter in Japan.

Diet and foraging behavior

Japanese Thrushes generally forage for insects, chilopods and earthworms on the ground, but occasionally capture flying insects in the treetops. They also eat the fruits of ivy (*Hedera rhombea*), honeysuckle (*Lonicera morrowii*) and cherry. They primarily feed earthworms to nestlings.

Topics of ecology, behavior and conservation

● Repertoire of songs and the number acquired females

There is no correlation between the variety of whistles or trills and the age or Japanese Thrush males. However, a male breeding with two females tended to have more various trills than a monogamous male breeder, while there was no difference in the variety of whistles between the two types of male breeders (Ishizuka 2009a).

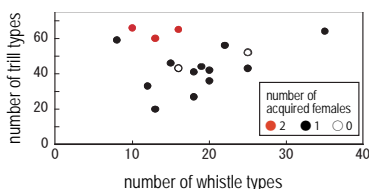


Fig. 2. Relationship between the number of types of whistles and trills and the number of acquired females in 17 males. The number of trill types is the number extracted from the 110 full songs of each male.

● Differences in song between single and mated males

Single males sing loudly at short intervals on top of a tree. They tend to add trills to their songs and change their types in rapid succession. Full songs represent 60-100% of the singing frequency. Mated males generally sing in a relatively quiet voice in a tree crown, however, because they sing in the vicinity (usually within 30m) of their partner or nest. They sing at long intervals and often omit trills, singing the same type of song repeatedly. Full songs account for up to 50% of the singing frequency. Field experiments can also show that there is a difference in the way of singing between mated and single males. For instance, mated males sing a full song with significantly higher frequency when their partner is temporarily isolated from them (Ishizuka 2008). About 30 minutes before sunrise, however, even mated males also sing all together in the same way as single males do. Even in the daytime, on the other hand, some mated males sing a song similar to that of single males in areas relatively distant from the nest. Some males own two separate singing areas and sing songs, going from one area to another, but their way of singing are different between the areas, if they breed with their partner in one of the areas (Ishizuka 2009b).

● Predawn singing excursion

Males sometimes sing at a distance of 300m-1000m from the nest before dawn. The faraway singing area of one male overlaps with that of another male, but they do not sing close to each other. Though another male sometimes silently approaches up to 1 or 2m from a singing male, the singing male usually do not chase him away. In addition, these singing males hardly ever show any reaction (territorial defense behavior) to the replayed songs of other males. This experiment suggests that the main purpose of singing far away from the nest is to attract the second female, but not to defend the territory. Since females are aggressively intolerant of each other, it is assumed that males have adopted a strategy to sing in areas distant from the nest to attract and acquire two or more females (Ishizuka in press).

● Soft whisper song

Males make soft whispering once or twice before and after feeding nestlings. Some males whisper more frequently just before they deliver food to the nest when females brood nestlings in it. Females leave the nest on hearing their whispers. On the other hand, males tend to whisper more often after leaving the nest when females are not present in the vicinity. Cases are on record where males whispered frequently when nestlings fledged (Ishizuka 2009c).

● Case of the extinction of a local breeding population

In the seaboard of Kanazawa City, Ishikawa Prefecture, Japanese Thrushes used as a nest site a shelterbelt composed primarily of Japanese black pines (*Pinus thunbergii*) and *Robinia pseudoacacia* in a wooded park. They usually nested in a site where a slanting dead tree leaned against another tree. Such a site was densely covered with vines as well. When the bush layer, vines, weeds on the forest floor and dead trees were removed as a part of the park management, their breeding habitat was not only deteriorated but the nests were also vulnerable to the predation of natural enemies, such as crows.

The motorway that runs through the woods opened around 2000. The area where Japanese Thrushes nested with high density was converted into mallet golf courses, and the forest floor was further cleared. The water vein of the dune was managed and the environment was simplified. Moorhen (*Gallinula chloropus*), Brown Shrike (*Lanius cristatus*) and Great Reed Warbler (*Acrocephalus orientalis*) ceased to breed. More than 30 pairs of Japanese Thrushes breeding there in the 1990s sharply declined and they have vanished since 2007.

It is assumed, one the other hand, that Japanese Thrushes were intermittently distributed along the seaboard from the base of the Noto Peninsula to Kanazawa City. There is also a possibility, however, that they began to decline around 1990 from the northeastern area toward the southwest. Since they also declined in some areas with almost no artificial modification, it is still unknown what caused them to vanish from these breeding grounds. Brown Shrikes and Japanese Thrushes seemed to decline in the similar habitat of Niigata City in the 1990s as well.

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

Author

Toru ISHIZUKA The Biodiversity Laboratory Earthworm



I am currently engaged in the habitat conservation of Latham's Snipes and Chestnut-cheeked Starlings in my hometown of Karuizawa, Nagano Pref., worrying about increasing alien Hwamei (*Garrulax canorus*). I have been monitoring the "Reduced habitats" of insects, fish and amphibians as well. I have written "Interesting private life of birds", "Forests have complicated reasons to be this way", etc.