

Birds Iconography in the *Lalitavistara* Relief of Borobudur Temple: A Study from Biological and Cultural Perspective

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ABSTRACT.— In panels of *Lalitavistara* Relief of Borobudur Temple, sculpted birds that are not yet clearly known for their both species and meanings. This research was conducted by observing 120 panels and recording the emergence of bird species. Furthermore, birds were identified based on morphology, behavior, and habitat preferences, then adjusted to the context and storyline of the panel. There were 22 bird species spread across 31 panels with a total of 133 individuals. Green Peafowl (*Pavo muticus*) was the species that had the most individual appearances, followed by Rock Dove (*Columba livia*). The Green Peafowl is a symbol of elegance and luxury, but can also be a symbol of arrogance when showing off its beautiful tail feathers. The Rock Dove is a symbol of news bearers, affection and loyalty. The presence of birds and other fauna is not only a complement to the panel room, art decoration, or the casting of artistic expressions, but implies a deep meaning to be conveyed. Bird behavior can be a time marker of the scene according to the natural behavior of the birds. Bird species can also indicate place the panel scene occurs. The presence of birds and other fauna species presents a new perspective and new dimension on how to tell *Lalitavistara* story relief.

KEY WORDS: Borobudur, *Lalitavistara* relief, bird

INTRODUCTION

Borobudur Temple is a laboratory that has various aspects and dimensions that are interesting to be studied. The condition is because Borobudur Temple holds very high aesthetic, cultural, artistic, architectural, and spiritual values (Cahyandaru, 2013). Based on the similarity approach to *Kawi* letters and other inscriptions, this temple is estimated to have been built around 750-850 AD (Krom, 1927) during the reign of the Wangsa Sailendra Dynasty (Kusen, 1984-1985; Gunarto, 2011) and is a complex building with distinctive characteristics, so it is not possible to adapt every system known from the literature and use it as an interpretive basis for its constructions (Kempers, 1959). Many sides of the story are still unable to be described so it is interesting to be examined more thoroughly, one of which is about the

appearance of various fauna in the relief sculptures of the Borobudur temple.

Borobudur Temple is composed of 1460 story reliefs' panels that are divided into 5 story groups, namely *Karmawibhanga*, *Lalitavistara*, *Jataka-Avadana*, *Gandavyuha*, and *Badracari* (Kusen, 1984-1985; Istari and Sulistyanto, 2015; Puspitasari et al., 2010). Each panel consist of *wimba* or image (Tabrani, 2018) which forms a story scene. This scene then relates to each other so that it forms a series of storylines. Therefore, the Borobudur temple and its reliefs are a book, and to be able to understand the existing of whole story of the panel relief, each scene in one panel is read from right to left or *pradaksina* (Harto, 2014; Tabrani, 2018,). Because each panel relief is a series of interconnected stories, it becomes important to understand the details of each *wimba*, including *wimba* flora and fauna to understand the whole storyline.

One of the interesting and unannounced components of the panel is the presence of bird *wimba* in the *Lalitavistara* relief of Borobudur Temple. Allegedly, the appearance of bird carvings in the story panels is not only limited to the casting of artistic expression by an artist, or limited to complementing the space of the panel, but there are very high aesthetic values, and harmonization of art, culture and science. Suropto and Pranowo (2001) have identified some of the panels relief and revealed there are seven species of birds in the relief of Borobudur Temple, but the position of existence in the panel relief and the species of bird identified cannot be explained clearly so it is very difficult to link it with the story of relief, even though the accuracy of the species identification and validation of the name of the species becomes important because each of bird has a different narrative and will influence the narrative of the panel story as a whole.

In the context of biological sciences, especially morphology, ecology, and ethology, birds are one of the biotic components that make up ecosystems that have distinctive forms, roles, and behaviors. Therefore, its appearance in a habitat or environment in a panel story scene can provide a variety of information such as why the bird species specifically appeared in the relief panel, or where and when (morning, noon, or night) the scene occurred. The sculptors in telling the story of the presence of birds in the panel relief are certainly full of meaning and its appearance along with other biotic components can also give an idea of the balance of an ecosystem. Furthermore, one of the characteristics of birds is fauna that is known to have a distinctive and specific sound or chirping in each species, then the various biological aspects of the bird will become very meaningful when it can be combined with the context of the whole story of the panel.

Febrianto and Idris (2016); Suropto and Pranowo (2001) have listed and described the faunas sculpted in the relief story of Borobudur Temple, but identification is only done to the fauna that is commonly found and easily distinguished from other species such as lions, fishes, horses and elephants, so the discussion of its appearance in the panel is not fully disclosed the species of fauna that are revealed so that it is less able to describe the relationship of fauna position in the panel and its relationship in each panel. Furthermore, in the *Lalitavistara* relief of Borobudur Temple, the entire of mammals has been revealed and discussed following the meaning of the story of its existence by Achmadi et al. (2020) and Rusdianto et al. (2020) while the relief of flora has been discussed by Metusala et al. (2020); but the complete study of the existence of the meaning of birds in the story of *Lalitavistara* has not been revealed. Therefore, this study will reveal the species of birds in *Lalitavistara* relief from the point of view of zoology, ecology, and ethology in detail in 120 panel's relief, then adopted by the narrative of the panel story. The results of this study are expected to complement previous research related to the description of the existence of fauna in the relief story of Borobudur Temple, as well as complete the storyline or scenes that occur in each panel, especially *Lalitavistara* Relief.

MATERIALS AND METHODS

The research methods adopt the research method that has been done by Achmadi et al. (2020) and Rusdianto et al. (2020). Screening of bird appearance is carried out on 120 *Lalitavistara* panels relief located on the wall of the aisle I of the top row of Borobudur temple. The observation was done by observing directly all the reliefs of *Lalitavistara* Borobudur Temple (Fig. 1), as well as the photos from the documentation of

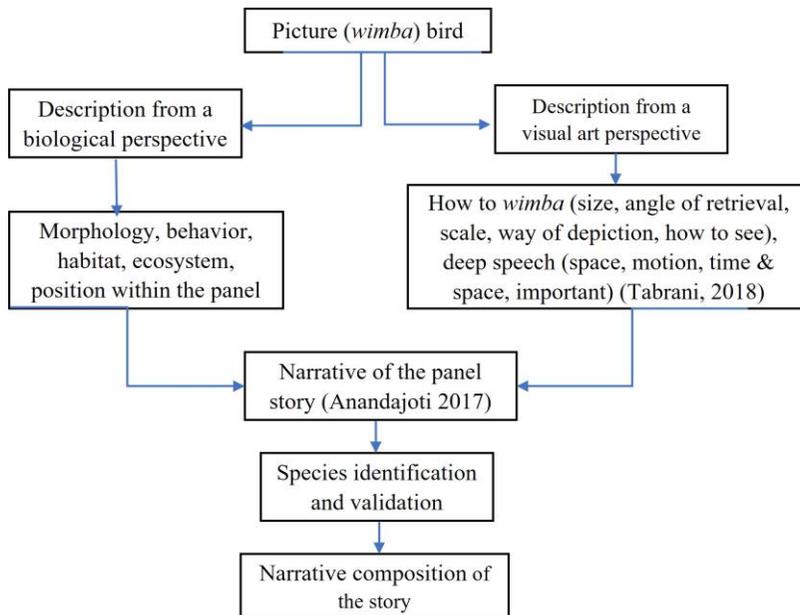


FIGURE 2. Method of identification and analysis of bird *wimba* in *Lalitavistara* relief of Borobudur Temple.

relief a sequential storytelling work, the image must be read consistently from right to left to understand the content of the story coherently and comprehensively. Events or scenes in each panel will form a series of stories that can be understood using fade-in, dismix, representative or shifted techniques. Therefore, the image of a bird is an important component of the scene because it can convey a message of where or when the scene occurred.

The description of the appearance of birds from a biological and visual-art perspective is then combined with the context of the whole story as narrated by Anandajoti (2017) by adding a narrative about the image of birds. The combination of bird narrative with the context of the panel story will produce a new, more detailed narrative without changing the narrative of the core story. The method as a whole can be seen in Fig. 2.

Analysis of the presence of bird species is divided and grouped based on five stages of

Bodhisattva life travel stories as revealed by Anandajoti (2017) namely:

1. Conception and Pregnancy (MPK code, panel number BLD1A, I 1, to BLD1A, I 27)
2. Birth and youth (MKM code, panel number BLD1A, I 28 to BLD1A, II 52)
3. Signs and renunciation (MLD code, panel number BLD1A, II 53 to BLD1A, III 69)
4. Meeting and striving (MPP code, panel number BLD1A, III 70 to BLD1A, IV 95)
5. Awakening and teaching (MKP code, panel number BLD1A, IV 96 – BLD1A, IV 120)

To find out the pattern of distribution and meaning of the placement of birds in each *Lalitavistara* panel relief especially related to the story of *Lalitavistara* as explained by Anandajoti (2017), then to emphasize and know the species of bird that becomes the main core in the narrative of the story in each round of the story *Lalitavistara* in the analysis using PCA and Curtis cluster analysis using Bray Curtis similarity index. Statistical analysis using PAST software (Hammer et al. 2001).

RESULTS

In long story panels such as *Lalitavistara*, it is one of the main texts of Buddhism which tells stories about Buddha in all the early stages including from when He was invited in His last life in the Tusita heaven to teaching at the Deer Park at Rsipatana Varanasi (Anandajoti, 2017). The results of this study will describe the iconography of birds which we discussed in two sub-themes, namely panels and distribution of bird species, as well as bird species and their meanings.

The Panels and Bird Distribution.

The results of identification of bird species located in relief *Lalitavistara* found 22 species spread across 31 *Lalitavistara* panels or only 25% of the total *Lalitavistara* panel (120 panels). The total of individuals revealed there are 133 individuals with the most species appearing in the panel are Green Peafowl (*Pavo muticus*) (29 individuals), followed by Rock Dove (*Columba livia*) (27 individuals), Doves and Pigeons (Columbidae) (16 individuals), and Sparrows (Estrildidae) (13 individuals). While the fewest bird species appear are White-vented Myna (*Acridotheres javanicus*), White-bellied Woodpecker (*Dryocopus javensis*), Red Junglefowl (*Gallus gallus*), Swiftlet (*Collocalia* sp.), and the Forktail (*Enicurus* sp.) with each appearing as many as one individual. The number of bird species and their distribution in each panel can be seen in Table 1. Birds are the fauna that most appear in relief *Lalitavistara*, both in the number of species and the number of individuals than other fauna groups such as mammals, fish, and reptiles.

The appearance of the bird out scaping began from the presence of Doves and Pigeons (Columbidae), which appeared in the panel of BLD1A, I 8; where the panel told about the scene of Queen Mahamaya who asked permission from King Suddhodana to start doing desolating and living a holy life and doing acts of virtue (Anandajoti, 2017).

The exposure relief of Pigeon on the right of the panel indicates that the incident occurred in the morning or can also give the meaning of carrying messages or news and the form of a flying bird outing is inseparable from the arrival of messages or news of the desire to start and a breakaway to live a holy life. Furthermore, the appearance of bird relief ended at the panel number BLD1A, IV 117 in the form of out exposure relief, namely Long-tailed Parakeet (*Psittacula longicauda*) and Green Peafowl (*Pavo muticus*). Panel BLD1A, IV 117, which tells of Buddha leaving Varanasi and heading to the Deer Park, was in the park to meet five auspicious groups of five monks (Anandajoti, 2017). Buddha's meeting with the virtuous recluse as the story lasted all day, and it began in the morning, ended in the afternoon as shown by the Long-tailed Parakeet which was revealed in the center-right position on the left. The peak of Buddhist talks is expected at midday as the symbol of the Green Peafowl's appearance (*Pavo muticus*) as a symbol of chastity and majesty revealed in the middle of the panel on the tree.

From a total of 133 individual birds spread across 31 panels, Green Peafowl (*Pavo muticus*) is the most commonly found bird species as many as 29 individuals spread across 15 panels, followed by Rock Dove (*Columba livia*) which appeared as many as 27 individuals spread across eight panels. However, if look at the index caught in each panel, Rock Dove (*Columba livia*) is the species with the highest caught index of 3.38, followed by Long-Tailed Parakeet (3), Cattle Egret (*Bubulcus ibis*) (2.5), The Lesser Whistling-duck (*Dendrocygna javanica*) (2.5), and Sparrow (Estrildidae) (2.17) (Table 1).

The panel that has the most bird species can be seen in the panel of BLD1A, III 74 (5 species) while the panel that reveals the number of individual birds can be seen in the panel of BLD1A, II 37; which is as many as

TABLE 1. Species and distribution of birds in the five stages of *Lalitavistara* Relief

| Symbol | Class/Family/Species | English name | Number | | Story stage | | | | | Position (side) | | |
|---------------------|-------------------------------|--------------------------------|--------|------|-------------|-----------|-----------|-----------|-----------|-----------------|-----------|-----------|
| | | | Panel | Ind. | MPK | MKM | MLD | MPP | MKP | Left | Center | Right |
| A | Accipitridae | Eagles | 3 | 5 | | | | 3 | 2 | 2 | 2 | 1 |
| B | <i>Acridotheres javanicus</i> | Javan Myna | 1 | 1 | | | | | 1 | | 1 | |
| C | <i>Amaurornis phoenicurus</i> | White-breasted Waterhen | 1 | 2 | | | | | 2 | | 2 | |
| D | <i>Bubulcus ibis</i> | Cattle Egret | 2 | 5 | | | | | 5 | | 5 | |
| E | Aves | Aves | 1 | 1 | | | | 1 | | 1 | | |
| F | <i>Columba livia</i> | Rock Dove | 8 | 27 | | 14 | 6 | 6 | 1 | 14 | | 13 |
| G | <i>Copsychus saularis</i> | Oriental Magpie-robin | 1 | 2 | 2 | | | | | 1 | | 1 |
| H | <i>Corvus enca</i> | Slender-billed Crow | 1 | 2 | | | | 2 | | 1 | | 1 |
| I | <i>Dendrocygna javanica</i> | Lesser Whistling-duck | 2 | 5 | | | | 5 | | 2 | | 3 |
| J | <i>Dendrocygna</i> sp. | Ducks | 1 | 2 | | | 2 | | | | | 2 |
| K | <i>Dryocopus javensis</i> | White-bellied Woodpecker | 1 | 1 | | | | 1 | | 1 | | |
| L | <i>Egretta garzetta</i> | Little Egret | 2 | 2 | | | | 1 | 1 | 1 | | 1 |
| M | Estrildidae | Sparrows | 6 | 13 | | | 1 | 12 | | 8 | 3 | 2 |
| N | <i>Gallus gallus</i> | Red Junglefowl | 1 | 1 | | | | 1 | | 1 | | |
| O | <i>Loriculus pusillus</i> | Yellow-throated Hanging Parrot | 1 | 2 | | | | 2 | | 2 | | |
| P | <i>Cinnyris jugularis</i> | Olive-backed Sunbird | 2 | 4 | | | | 2 | 2 | 4 | | |
| Q | <i>Pavo muticus</i> | Green Peafowl | 14 | 29 | 2 | 10 | 5 | 9 | 3 | 9 | 9 | 11 |
| R | <i>Psittacula alexandri</i> | Red-breasted Parakeet | 4 | 8 | | | | 7 | 1 | 3 | 2 | 3 |
| S | <i>Psittacula longicauda</i> | Long-tailed Parakeet | 1 | 3 | | | | | 3 | 1 | 1 | 1 |
| T | <i>Collocalia linchi</i> | Cave Swiftlet | 1 | 1 | | | 1 | | | | | 1 |
| U | Columbidae | Doves and Pigeons | 9 | 16 | 5 | | | 6 | 5 | 3 | | 13 |
| V | <i>Enicurus</i> sp. | Forktails | 1 | 1 | | | | 1 | | 1 | | |
| Total number | | | | | 9 | 24 | 15 | 59 | 26 | 55 | 25 | 53 |

nine individuals. Furthermore, when viewed from the identification of the bird species revealed, all of them are species of active birds during the day, and none of them is found that are usually active at night. In this identification, because Pigeon has several species, we identify the Pigeon into two groups: Pigeons carved around buildings and settlements identified as Rock Dove (*Columba livia*) and Doves and Pigeons (Columbidae) that are carved around trees in forest areas.

The birds exposed and related to their preferred habitat, such as the water-based bird species, are the most common birds found in the *Lalitavistara* panel. There are five species of birds that live in the water: The White-breasted Waterhen (*Amaurornis phoenicurus*), Cattle Egret (*Bubulcus ibis*), Lesser Whistling-

duck (*Dendrocygna javanica*), Ducks (*Dendrocygna*), and Little Egret (*Egretta garzetta*).

Gautama Buddha's life journey can be divided into 5 stages: MPK (Conception and Pregnancy), MKM (Birth and youth), MLD (Signs and renunciation), MPP (Meeting and striving), and MKP (Awakening and teaching). Comparing to other stages, the bird species that are found in the MPP (14 panels, 15 species, and 59 individuals) while the least found bird species are in the MKM (4 panels, two species, and 24 individuals) (Table 1). In the MPK, the most common species were Doves and Pigeons (Columbidae) (5 individuals), while for the MKM, MLD, and MPP the greatest number of individuals for each stage were Rock Dove (*Columba livia*) (14 individuals), Rock Dove (*Columba livia*)

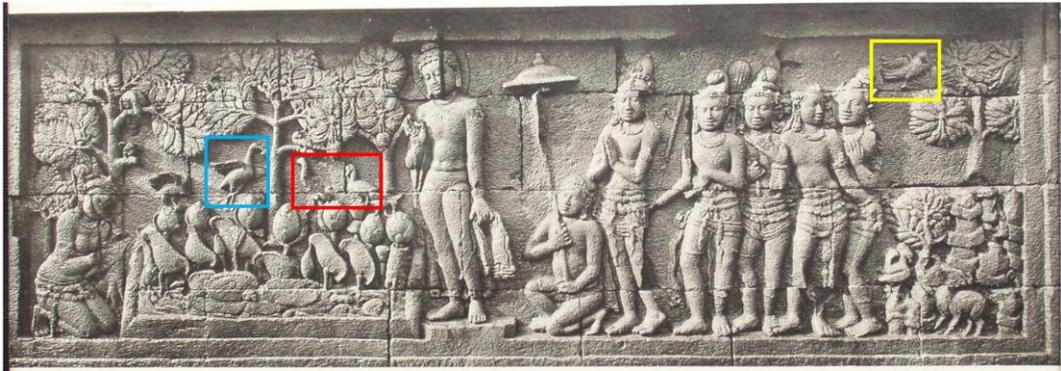


FIGURE 3. The appearance of Eagles (yellow square), Cattle Egret (red square), Lesser Whistling-duck (blue square) on panel BLD1A, III 82. Photo source: Borobudur Conservation Office

(6 individuals), and Sparrows (Estrildidae) (12 individuals) respectively. While in the MKP stage, there are two species of birds that have the highest number of individuals, Cattle Egret (*Bubulcus ibis*) and Doves and Pigeons (Columbidae), five individuals each (Table 1). The value of the index of individuals and species in each panel is most in the MKP.

The bird's outcrop position is divided into three positions: the bird's appearance in the right, middle and left panel positions. This position's appearance is a marker of the time of the incident in the morning, afternoon, and evening, but some positions have their meaning as discussed in the description of the meaning of birds' appearance below. The majority of bird appearances were in the left position as many as 55 individuals and 17 species, while those exposed on the right were 53 and 13 species of individuals (Table 1).

Appearance of The Bird and Its Meaning Eagles (Accipitridae) (Fig. 3)

The Eagles (Accipitridae) can be recognized by their curved and robust beak to rip the flesh of their prey, a pair of legs equipped with strong and sharp claws for gripping prey, and are known to have sharp eyesight to stalk and hunt their prey. It is a carnivorous bird whose main diet is small mammals such as mice, squirrels, snakes, lizards, and fish. Generally, prefer habitats with tropical rain forest

ecosystems that are always green, in the lowlands and higher places.

The Eagles (Accipitridae) is exposed in three panels, BLD1A, III 81, BLD1A, III 82, and BLD1A, IV 115 panels with a total of five individuals. In Jawa, there are 22 species of Eagles, includes the Javan Hawk-eagle (*Nisaetus bartelsi*), Changeable Hawk-eagle (*Nisaetus cirrhatus*), and Black Eagle (*Ictinaetus malaiensis*). The Eagles in Hindu culture means close to the Garuda bird as the vahana of Lord Vishnu. Garuda in the Ramayana story has the name *Jatayu* as a symbol of liberation (Kirno, 2012-2013). Biologically in the food chain system, Eagles are top predators and become determinants in maintaining the balance of other species' population dynamics such as frogs, snakes, and rats.

On panel BLD1A, III 81, a pair of Eagles sculpted on the left. This panel tells of the scene of the village chief's daughter donating food to the Bodhisattva (Anandajoti, 2017). The Bodhisattva is standing on the right side of the panel, then on the left side of the panel is a settlement with a building indicating the village's direction. A pair of Eagles are soaring around the roof of the building. Ecologically, Eagles sometimes found around settlements looking for food in the form of livestock. His presence on the left panel with

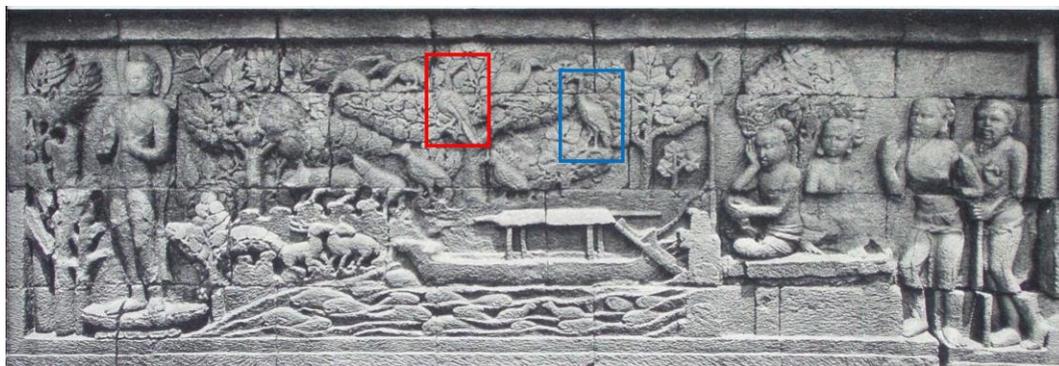


FIGURE 4. The appearance of the Green Peafowl (red square) and White-breasted Waterhen (blue square) on panel BLD1A, IV 115. Photo source: Borobudur Conservation Office

soaring activities indicates that the scene occurred in the afternoon. At mid-morning, it is common to follow the upward turbulence winds. The appearance of paired eagles on the BLD1A, III 81 panel indicates a fertility and the high flight indicates immortality in Nirvana.

The Eagle's presence on the panel BLD1A, III 81, indicates that the story occurs in the afternoon then the Eagle flies to the left indicating that the story happens in the evening at the village head's house. The story continued to the next panel, BLD1A, III 82, the Eagle shows in the right-position indicating that the story scenes start in the morning when a girl is offering rice porridge. Bodhisattva takes rags from the corpse of Radha who just died and was subsequently washed. The existence of the Eagle can be interpreted that the Bodhisattva is ushering towards Nirvana. The presence of two individual Eagles in panel BLD1A, IV 115 perched on the tree while Buddha was crossing the Gangga River and ask a boatman to take him across. However, the boatman asked for the fee while the Buddha could not pay the fee. Finally, the Buddha crossed the river with his own inner strength (Anandajoti, 2017).

The presence of Eagle on the riverbank, in the middle of the panel, indicating the story happens during the early morning hours in the primary forest near the water when Buddha's

crossing in the Gangga River. After crossing the water, the time already afternoon indicated by the Green Peafowl (*Pavo muticus*) presence on the left side. Apart from the Eagle, this panel also includes the White-breasted Waterhen (*Amaurornis phoenicurus*), Cattle Egret (*Butor ibis*), and Green Peafowl (*Pavo muticus*) to indicating near water habitat.

White-breasted Waterhen (*Amaurornis phoenicurus*) (Fig. 4)

The White-breasted Waterhen (*Amaurornis phoenicurus*) can be identified by its slender shape with a short tail, while beak and legs are relatively long. This animal has the habit of its tail standing upright when walking and has a loud and shrill voice. Generally, live solitary or in groups in small numbers. These birds like wetlands and bush areas such as rice fields, riverbanks, and lakes, with a diet of worms, water insects, seeds, and lizards. When disturbed by humans' presence, this bird will run fast and fly short into the bush or grass to hide. In Indonesia, the distribution area is Sumatra, Jawa, Borneo, Sulawesi, and Moluccas.

Two individuals of the White-breasted Waterhen (*Amaurornis phoenicurus*) can be found in panel BLD1A, IV 115. Two individual birds exposed in the middle of the panel, above the tree canopy, indicate the story occurred in the middle or during the day.



FIGURE 5. The appearance of White-vented Myna (yellow square) on panel BLD1A, IV 102.
Photo source: Borobudur Conservation Office

In general, the White-breasted Waterhen bird can be found in swamp grass, rice fields, mangrove forests, ditches on the side of the road or in wetlands, and water. His presence in this panel along with other bird groups such as Eagles (Accipitridae), Green Peafowl (*Pavo muticus*), and Cattle Egret (*Bubulcus ibis*), confirms that the location of the panel scene is in the forest near a river or water source.

White-breasted Waterhen (*Amaurornis phoenicurus*) in the *Lalitavistara* indicate when the story occurred during the day, and the position of the bird indicates the natural habitat near the water. This bird's existence in the panel is a symbol following its behavior, which can run fast when disturbed by humans. In this story, Bodhisattva, who is on a spiritual journey, is disturbed by the boat manager asking fees to cross the river. Running fast can be symbolized that the Bodhisattva with his inner strength can quickly cross the river without having assisted by the boat that prioritizes fees. In the end, this condition was discovered by Bimbisara King, and freed hermits from fees for crossing rivers. Its presence with several other bird species and mammals confirms that the story scenes in panels occur in forest areas close to water sources.

White-vented Myna (*Acridotheres javanicus*) (Fig. 5)

The White-vented Myna (*Acridotheres javanicus*) is quite difficult to distinguish from other species of the genus *Acridotheres*, and it can be distinguished by size is not too large and has a short crest. These birds generally inhabit in grasslands, settlements, agricultural land to grazing areas. This bird habit is perching on the buffalo's back to look for an insect at the buffalo body. In Indonesia, the distribution is quite wide, especially in Sumatra, Jawa, Sulawesi, and Bali.

The White-vented Myna (*Acridotheres javanicus*) in the *Lalitavistara* story appeared on panel BLD1A, IV 102, one individual. His appearance in the middle of the panel simultaneously confirms that the Bodhisattva meeting with a group of ascetics takes place during the day. It is said that recluses are experiencing mental turmoil due to many cold weather conditions, but they are astonished and questioned about the serenity of the Bodhisattva who is calm and comfortable (Anandajoti, 2017). The symbol of comfort can be described as a White-vented Myna's presence because this bird is an intelligent bird that can mimic other birds' chirping or human voices even though the sound is not melodious.

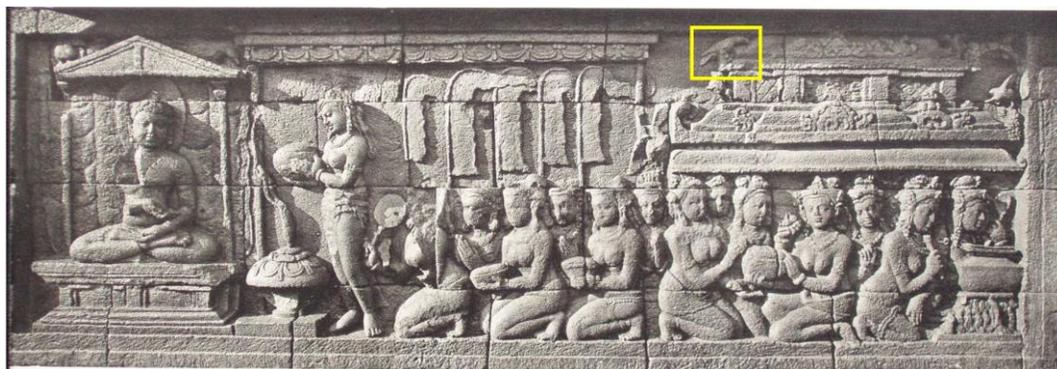


FIGURE 6. The appearance of Slender-billed Crow (yellow square) on panel BLD1A, III 84.
Photo source: Borobudur Conservation Office

Slender-billed Crow (*Corvus enca*) (Fig. 6).

The Slender-billed Crow (*Corvus enca*) is a Passerine bird of the family Corvidae. This species can be recognized by its fairly large posture and, large beak. These birds generally inhabit lowland, forest, and forest edge habitats with a diet of fruits and insects. In Indonesia, the distribution area is wide, including Sumatra, Jawa, Borneo, Bali, Sulawesi, and Moluccas. The Slender-billed Crow (*Corvus enca*) is often associated with myths as bad news or a harbinger of impending trouble. Even the presence of Slender-billed Crow (*Corvus enca*) is often associated with death. Meanwhile, several scientific studies have shown that the Slender-billed Crow (*Corvus enca*) is a bird that has high intelligence (Madge and Christie, 2020) so that it becomes an intermediary as a teacher for humans.

There are only two Slender-billed Crow (*Corvus enca*) found in the BLD1A, III 84 panels. This bird is carved on the right and left of the roof building. The panel's story was Sujata prepares milk rice for Bodhisattva and from the presence of a Slender-billed Crow (*Corvus enca*) gives the symbol of time. The Slender-billed Crow (*Corvus enca*) appears on the right or a story scene in the morning and appears on the left panel or a story scene in

the evening. The symbol of this time can be explained that the Sujata in giving and preparing milk rice for the Bodhisattva occurs in the light of day.

Furthermore, crows' appearance that has high intelligence with a large brain volume shows disciplined and intelligent, especially in disseminating information on dangers and sources of food in their groups. This behavior gives meaning to the presence of Bodhisattvas who have high intelligence also. So, it becomes worthy for the Bodhisattva becomes an intermediary or teacher for humankind. The story's scene is very suitable, in the giving of milk rice by Sujata, which can only be intended and addressed to humans who have high intelligence and can teach like a Bodhisattva. The presence of two individual The Slender-billed Crow (*Corvus enca*) in this panel seems to imply the meaning of intelligence, based on the brain size, possessed by the Bodhisattva who will be the teacher and guide of truth for His followers.

Oriental Magpie-robin (*Copsychus saularis*) (Fig. 7)

The Oriental Magpie-robin (*Copsychus saularis*) is a small passerine bird of the family Muscicapidae can be recognized by its pointed beak and not too long. Generally, inhabit lowland habitats such as plantations,



FIGURE 7. The appearance of Oriental Magpie-robin (yellow square) and Wild Pigeon (red square) on panel BLD1A, I 9. Photo source: Borobudur Conservation Office

yards, parks, and secondary forest edges with insect as the main food. People know this bird by the local name *Kacer* or *Kucica Kampung*. In Indonesia, this species is widely distributed, starting from Sumatra, Jawa to Borneo.

The Oriental Magpie-robin (*Copsychus saularis*), which is more commonly known by the community as the *kacer* in the *Lalitavistara* panel only appears at the beginning of the story, two individuals in the BLD1A, I 9 panel. This panel tells of the goddesses who visited Queen Mahamaya, who had vowed to live a holy life. The message of the sacred vow is a message that all people and goddesses need to know because this vow provides a piece of beautiful information news filled with life's majesty. Such conditions can be interpreted as symbols like the *Kacer* bird's presence from the sound it makes.

Today, the Oriental Magpie-robin (*Copsychus saularis*) is an idol of the community because it can emit a sweet chirp or sing passionately in the morning and evening. The Oriental Magpie-robin (*Copsychus saularis*) is carved on the right of the panel, perched on the top of a tree canopy to forage for fruit. This bird's presence emphasizes the location of the story scene in a park around the palace, by the natural habitat of this species of bird that is often found around parks and settlements.

White-bellied Woodpecker (*Dryocopus javensis*) (Fig. 8)

The White-bellied Woodpecker (*Dryocopus javensis*) can be identified by its long and thick beak, with a crest with thick and relatively long hair, relatively long tail feathers, and sometimes dangling to touch the tree trunk. These birds generally inhabit forests in the lowlands to the mountains which have an altitude up to 1000 meters above sea level. Usually, these birds occupy secondary forest areas and mangroves with insect as the primary food. In Indonesia, this bird has a wide distribution area covering Sumatra, Nias Island, Jawa, Bali, and the northern Natuna Islands. This bird is known to have loud and shrill chirp sound with a tight tone and swish. Also known as a shy bird because it rarely shows itself.

This bird exposure in the *Lalitavistara* story only appears in panel BLD1A, III 85, one individual. Appears on the left side of the panel, flying above the branches. The panel illustrates that Bodhisattva's brings the bowl in the middle of the pane and goes to the river to take a bath, and the story occurs from noon to late evening.

These birds' solitary behavior that often flies while sounding, giving the signal to their partner seems following the story's contents. Sujata was feeding with a golden bowl to Bodhisattva, then asking what to do. Sujata



FIGURE 8. The appearance of the White-bellied Woodpecker (yellow square) and two Yellow-throated Hanging-parrot (blue square) at the BLD1A, III 85 panel. Photo source: Borobudur Conservation Office

answered that the bowl had been given, and all its use depends on the Bodhisattva (Ananjodi 2017). The birds' presence in this panel confirms that the location of the incident is in the forest, and his dynamic behavior indicates the timing of the panel story from noon to evening.

Yellow-throated Hanging Parrot (*Loriculus pusillus*) (Fig. 8)

Yellow-throated Hanging Parrot (*Loriculus pusillus*) is a small species of parrot in the Psittaculidae family. This species is a group of small, agile parrots. Based on *Lalitavistara's* carved panels, it is quite challenging to distinguish Yellow-throated Hanging Parrot from other species of the *Loriculus* genus. However, it is traced based on its appearance at Borobudur Temple, where small parrot in the tree canopy hanging down, it is most likely that this is Yellow-throated Hanging Parrot. Yellow-throated Hanging Parrot has a green body colour with a tail and upper part of the tail cover red, and yellow fur around its neck. This bird is one of the endemic birds in Jawa and Bali. This bird lives in Jawa and Bali's forests with an altitude of up to 2,000 m above sea level with flowers, flower buds, and small fruits as the main food.

Two individuals of Yellow-throated Hanging Parrot were sculpted in panel BLD1A, III 85. In this panel, Bodhisattva

holding a gold bowl in which the food was given from Sujana. The Bodhisattva then goes to the Nairanjana River (pictured on the panel's right side) to take a bath and cool off (Anandajoti, 2017). The Yellow-throated Hanging Parrot is carved on the panel's left as if it was about to perch on a tree canopy. This panel also carved two species of mammals, the Binturong (*Arctictis binturong*) and the Russa Deer (*Rusa timorensis*) (Rusdianto et al. 2020). The presence of Yellow-throated Hanging Parrot and two species of mammals simultaneously complete the story that the Bodhisattva was about to bath in the morning in a clear river in a forest area. Referring to these birds' behavior, these birds are generally communal in large numbers and often fly together and perch on the tree canopy to find food. Because it is often communal, this bird will give a noisy sound effect at mealtime. The bird in the panel is on the left and time marker for the scene occur in the afternoon. The presence of this bird is revealed on the left side of the panel along with the presence of the White-bellied Woodpecker (*Dryocopus javensis*) and Green Peafowl (*Pavo muticus*)

The symbol of purity, with the presence of the Green Peafowl (*Pavo muticus*), is like the presence of the Bodhisattva. The habit of foraging for food from the noisy Yellow-throated Hanging Parrot is inseparable from

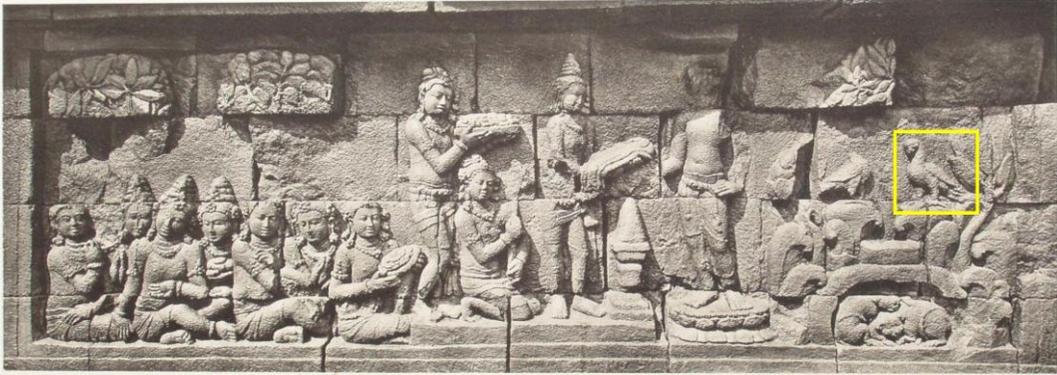


FIGURE 9. The appearance of Ducks (yellow square) on panel BLD1A, III 68. Photo source: Borobudur Conservation Office

the story on this panel to prepare Sujata meals, and its followers will undoubtedly make noise because of the food prepared for the Bodhisattva, and the presence of the Woodpecker which is usually solitary like the result that a golden bowl gives to the Bodhisattva its use depends on himself.

Lesser Whistling-duck (*Dendrocygna javanica*) (Fig. 3)

The Lesser Whistling-duck (*Dendrocygna javanica*), is a whistling duck species that breed in the Indian subcontinent and Southeast Asia. They are nocturnal feeders that may be found in flocks around lakes and wet paddy fields during the day. This species is recognized by its broad, flat beak, with webbed feet. Short legs with narrow-pointed wings. The body is smaller than the duck. In Indonesia, the area of distribution includes Sumatra, Jawa to Borneo.

In *Lalitavistara's* story, the species of *Dendrocygna javanica* appeared on panels BLD1A, III 77 and BLD1A, III 82 with five individuals exposed on both panels and showed suitability with the main habitat around the waters. On panel BLD1A, III 77, the duck's position is to the right of the panel, that it can be said to be a clue to the beginning of the story starting in the morning. While on panel BLD1A, III 82, the duck exposed one individual on the right, and two individuals are on the left panel telling the events of the

story activity scenes starting in the morning and ending in the afternoon. However, one individual of mammals, the Jawan Mouse Deer (*Tragulus javanicus*), on the panel's right (Achmadi et al. 2020), a nocturnal animal, while sometime this duck also often looks for food in the dark or before Sunrise. Two individuals of duck on panel BLD1A, III 82, give the meaning of a paired male and female, gives the meaning of fertility and loyalty (because if the partner dies, the partner will mourn for a long time). According to the breeding pattern, this bird also symbolizes peace, loyalty, and having abundant offspring, which will have a large number of eggs and hatchlings. The presence of duck in the panel BLD1A, III 77, signifies that the Bodhisattva will be successful in managing his asceticism and meditation. The Lesser Whistling-duck (*Dendrocygna javanica*) in the two panels confirms that the panel story scenes took place in a forest area near the water.

Duck (*Dendrocygna* sp.) (Fig. 9)

The Ducks (*Dendrocygna* sp.) can be recognized including having the shape of a blade beak, a long neck that makes it easy to scavenge for food in water or mud, short legs, and webbed feet to make it easier to swim. Ducks are an animal that is widespread in the world. Generally, live in rivers, lakes, swamps to rice fields with grass, water plants, fish,



FIGURE 10. The appearance of Ducks (yellow square) on panel BLD1A, III 68. Photo source: Borobudur Conservation Office

insects, small amphibians, worms, and small mollusks as the main food.

Two Ducks (*Dendrocygna* sp.) in the *Lalitavistara* story panel were only found in the panel of BLD1A, III 68. It is revealed that a pair of ducks facing each other on the right part gives the meaning of fertility and affection and at the same time tell that the story scene begins in the morning. The emergence of pairs can also mean that ducks' behavior in his life is often in groups. In this panel, the Bodhisattva wanted to change into a nice outfit with a suitable one, a deity disguised himself as a poor forest tramp and the Bodhisattva offered to change his clothes. The emergence of duck at the same time reinforces the panel story, as a symbol of life. Ducks' behavior is filtering food in the dirty mud, but the feathers are still clean. The cleanliness of the feathers is maintained because the duck's feathers are naturally coated with oil. The existence of a Bodhisattva can be interpreted as providing an example of an exemplary life like a symbol of a Duck's life, that in living life one must be able to choose what is good and what is bad. Duck feathers are also kept clean even when looking for food in the mud can suggest that even in a dirty condition, the mind and heart must be kept clean.

Furthermore, the duck's calm and gracefulness when swimming, but actually, the legs or the lower body parts are always busy pedaling at the same time, as the Bodhisattva teaches life that no matter how busy and difficult it is to stay calm and focus on happiness. A pair of ducks facing each other cannot be separated as an animal making out, discussing the life of tolerance, harmoniously in the joints of worldly life. In this panel, an outcrop of a dog appears, two individuals Jawan Tiger (*Panthera tigris sondaica*) (Achmadi et al., 2020; Rusdianto et al., 2020) which give the meaning of being a guard or the meaning of the existence of a duck that must be preserved and remain eternal like the symbol of a Tiger that is framed by a cage box in the panel relief.

Little Egret (*Egretta garzetta*) (Fig. 10)

The Little Egret (*Egretta garzetta*) is a species of small heron in the family Ardeidae can be identified by their medium body size, generally more prominent than Cattle Egret (*Bubulcus ibis*). During the breeding season, there is a characteristic that two thin white decorative feathers are extending on the nape of the neck, more chest hair, and back hair and dangling beyond the tail. These birds inhabit habitats in rice fields, rivers, riverbanks, and muddy areas with food in fish, frogs, crustaceans, aquatic insects, and

grasshoppers. Little Egrets are often seen standing still in the shallow too deep waters with their relatively long legs while suddenly pecking at their prey.

The Little Egret exposed on panels BLD1A, III 88, and BLD1A, IV 105, as many as one individual respectively. On panel BLD1A, III 88, Bodhisattva said that he was eating the leftover rice milk as charity from Sujata in a forest with a river in it. On this panel, the waters with lots of fish exposed an abundance of food and aquatic habitat with lots of fish. This species revealed on the right is seen standing with an elongated neck as if observing prey. This activity most likely occurs in the morning to evening when birds were actively foraging in their natural habitat. Such activity conditions are supported by evidence of the Ebony (negro) Langur (*Trachypitecus auratus*) and Banded Linsang (*Prionodon linsang*) (Rusdianto et al., 2020). Meanwhile, Ebony (negro) Langur is on the left of the panel and markers the story scene occurring in the afternoon. The presence of Little Egret (*Egretta garzetta*), Ebony (negro) Langur (*Trachypitecus auratus*), and Banded Linsang (*Prionodon linsang*) seems to complement the description of the location in the forest around the river or water source. Subsequently, the appearance of the Little Egret (*Egretta garzetta*) outcrop on panel BLD1A, IV 105, which was near a water source, and the panel scene contained the story of the Buddha receiving pure curd in lunar. The story scene of the curd-making process and giving it to Buddha occurs in the afternoon, as shown by the Little Egret symbol exposed on the panel's left.

The story scenes in the two panels generally give the same meaning, the loyalty of the people or their followers to the Buddha. Fidelity, which is symbolized by the presence of the Little Egret (*Egretta garzetta*), cannot be separated from the custom of the Little Egret matting, which adheres to the principle

of monogamous and is very loyal to its partner. Furthermore, Little Egret can also be interpreted as a symbol of the cohesiveness of life that needs to be side by side with whatever conditions, happiness or even difficulties. Such conditions follow these birds' behavior; they often fly migrating in groups according to the season and fly in groups with a "V" formation symbolized the cooperation and cohesiveness of the birds. The birds will feel light with the "V" formation because the strength of the wind will be divided. When the group leader feels that his power is reduced, it will be easily replaced by one of the birds that follow him so that the goal will be quickly achieved because of teamwork, and of course, the work will be completed faster than done individually. The long flight ability cannot be separated from being a symbol of long life and immortality (Kirno, 2012-2013).

Red Junglefowl (*Gallus gallus*) (Fig. 11)

The Red Junglefowl (*Gallus gallus*) can be identified by their posture, leg shape, terrestrial species, and carved spurs. Naturally, this species inhabits habitats in tropical forests with food in various seeds, grass and leaves, insects, and various small animals species. The area of distribution includes Jawa, Bali, to Sumatra.

Chickens, in general, are one of the animals that have a sense of time duration so that they will crowing at the same time every morning. Chickens are also the most accessible animal source of protein and do not have a social taboo in any religion. In some local beliefs in Indonesia, chicken is used as a ritual ingredient, for example, in the *Marapu* religion in Sumba. The role of chickens is vital in the process of worship.

The Red Junglefowl (*Gallus gallus*) was exposed on panel BLD1A, III 76, and on that panel told about the Bodhisattva doing austere asceticism, which five Rudraka students followed. The scene on the panel occurs at



FIGURE 11. The appearance of Red Junglefowl (yellow square) and a pair of Sparrow bird (red squares) at the BLD1A, III 76 panel. Photo source: Borobudur Conservation Office

night because it is sculpted together with several nocturnal mammals (Rusdianto et al., 2020). Red Junglefowl was found on the lower left side of the panel. On the whole left side of the panel also found Sparrows and Green Peafowl. Referring to the story scene that begins at night, such as an indication of nocturnal mammals' presence and ends in the afternoon indicated by the existence of Red Junglefowl (*Gallus gallus*), Sparrows (Estrildidae), and Green Peafowl (*Pavo muticus*). All meditation scene was carried out at least a full day or days. Biologically, every day the Red Junglefowl will sound simultaneous and follow the length and duration of day and night. The presence of Red Junglefowl can be interpreted as a time marker in the afternoon, and it can also be a time marker when to end his hermitage precisely when the chicken makes a sound. The presence of Red Junglefowl and several other bird and mammal species confirms that the story scenes at the panels took place in the wilderness.

Olive-backed Sunbird (*Cinnyris jugularis*) (Fig. 12)

The Olive-backed Sunbird (*Cinnyris jugularis*) can be recognized by its small size, with a long and sharp beak. This species of bird generally inhabits open forest areas in the lowlands, plantations to the highlands. Typically, live in small groups with their

favourite foods in the form of nectar and fruit. In Indonesia, this bird has a distribution area ranging from Sumatra, Jawa, Borneo to Bali.

The Olive-backed Sunbird (*Cinnyris jugularis*) carved on the panels of BLD1A, III 74, and BLD1A, IV 100 each were two individuals. On panel BLD1A, III 74, this species sculpted on the left of the panel appears to be actively sucking nectar from flowering plants. Then on panel BLD1A, IV 100, this bird is also carved on the left side of the panel and appears to be actively looking for food. In this panel, the brightness symbol's meaning becomes the central meaning, where on the panel BLD1A, III 74 it is a hope to get brightness. In contrast, in the BLD1A, IV 100 panel is a scene after gaining inner spiritual brightness so that the symbol of its existence in this bird's outcrop is placed on the panel appears on the left panel. This inner spirit is symbolized by honey, which is then absorbed by the Olive-backed Sunbird (*Cinnyris jugularis*) a symbol of humans who went on a spiritual journey and carried out the learning process. Honey can also be interpreted as science, just as in Islam with the concept of Prophet Adam as representative of the idea of universal science.

This bird is a honey-sucking bird from a lot of existing nectar. The brightness absorption symbol cannot be separated from the level of cleverness and intelligence of the



FIGURE 12. The emergence of Olive-backed Sunbird (yellow square), Red-breasted Parakeet (red square) and Rock Dove (blue square) on panel BLD1A, III 74. Photo source: Borobudur Conservation Office

Bodhisattva. He receives quickly both materially and mentally, while the result of the presence of enlightenment that he gets can be spread with a sweet voice like the nature and behavior of the Olive-backed Sunbird (*Cinnyris jugularis*).

Red-breasted Parakeet (*Psittacula alexandri*) (Fig. 12)

The Red-breasted Parakeet (*Psittacula alexandri*) can be identified by its short, bent beak and relatively short tail. This species likes habitats on the edge of the forest, plantations, and moor with food, such as fruit, seeds, rice, nectar, flowers, and buds. This species has seven subspecies, including *Psittacula alexandri fasciata* (North India to Nepal, Myanmar, Thailand, Indochina, and Hainan); *Psittacula alexandri abbotti* (Andaman Island); *Psittacula alexandri cala* (Simeuleu Island, west Sumatra); *Psittacula alexandri major* (Lasia Island and Pig Island, Sumatra); *Psittacula alexandri alexandri* (Jawa, Bali, southern Borneo); *Psittacula alexandri kangeanensis* (Kangean Island, Jawa); *Psittacula alexandri dammermani* (Karimunjawa Island, Jawa). This bird is known for its loud and shrill chirp, especially when perched in trees or when flying, and is communal.

The Red-breasted Parakeet (*Psittacula alexandri*) in the *Lalitavistara* story appears in four panels, namely BLD1A, III 72; BLD1A, III 74; BLD1A, III 90; BLD1A, IV 100 with a

total of eight individuals. This bird is still found in Jawa, easy to tame and known as an intelligent bird. The appearance of bird outcrops in the *Lalitavistara* story cannot be separated from the symbol of intelligence and easy learning from the surrounding environment. The story scenes on panels BLD1A, III 72, and BLD1A, III 74 narrated more about the Bodhisattva's intelligence and teaching. On panel BLD1A, III 72, because of the Bodhisattva's intellect through the exertion of his mind, Bodhisattva can easily succeed in a short time in mastering all the teachings of *Arada* taught to him. This intelligence is symbolized by the Red-breasted Parakeet's presence which easily mimics the surrounding sounds and chirping other bird species, although not as clear as the chirp of the Yellow-crested Cockatoo (*Cacatua sulphurea*), which has a more diverse chirping sound.

In the BLD1A, III 72, the birds are spread on all (right, middle, and left) sides of the panel, and the Bodhisattva story scene getting teachings from *Arada* is carried out a full day, starting in the morning and ending in the afternoon based on the behavior of Red-breasted Parakeet (*Psittacula alexandri*) which is active in the morning and evening. Based on the panel story BLD1A, III 72, the event or scene occurred at night, therefore the presence of Red-breasted Parakeet (*Psittacula alexandri*) can confirm that the beginning of



FIGURE 13. The appearance of Long-tailed Parakeet (yellow square) on panel BLD1A, IV 117. Photo source: Borobudur Conservation Office

the story occurred in the late afternoon. The conditions are the same as in the story scene in panel BLD1A, III 74. The panel tells stories about a teacher's intelligence to teach, showed with King Bimbisara asks to lead after the Bodhisattva gets enlightened and Red-breasted Parakeet (*Psittacula alexandri*) is placed next him. The Red-breasted Parakeet (*Psittacula alexandri*) position on the left side of the panel indicated a symbol of time, can also be interpreted as a story obtained from teaching.

Slightly different from the BLD1A, III 90, and BLD1A, IV 100, the bird appears on the right and left side of the panel. On panel BLD1A, III 90, where the grass cutter namely Svastika, gives a very suitable grass cut for the Bodhisattva's seat and the incident occurred in the morning. Simultaneously, in BLD1A panel III, 100 Red-breasted Parakeet (*Psittacula alexandri*) position on the left indicates an incident in the afternoon, which is also reinforced by the Russa Deer's presence (Achmadi et al., 2020). In addition to the meaning of Red-breasted Parakeet (*Psittacula alexandri*) in panel BLD1A, III 100, his presence in the left panel can also mean that the final result of the teaching will be enlightened. This condition follows the scene's value in the panel BLD1A, IV 100, where the Bodhisattva managed to cross from the ocean in the east to the west.

Long-tailed Parakeet (*Psittacula longicauda*) (Fig. 13)

The Long-tailed Parakeet (*Psittacula longicauda*) has distinctive bent beak shape and a long tail that can differentiate from the Red-breasted Parakeet (*Psittacula alexandri*). Long-tailed Parakeet is also known as Red Cheek parakeet because it has red hair around the side of the head and cheeks. However, this feature cannot be used in panel carvings as a comparison or differentiation with Red-breasted Parakeet. In Indonesia, this bird has a distribution area in Sumatra, Riau, Natuna Island, Andaman Island, and Borneo (del Hoyo, 2014) with habitat preferences in coastal and lowland areas, especially in open forests, plantations, mangrove forests, edges of tropical rain forests, secondary forests to the outskirts of city parks. It is estimated, The Long-tailed Parakeet arrived on the Jawa Island because of inter-island trade activities at that time.

The Long-tailed Parakeet (*Psittacula longicauda*) was exposed in the panel BLD1A, IV 117, with three individuals, one appearance each on the right, center and left side of the panel. In contrast to Red-breasted Parakeet's appearance in several panels, the Long-tail Parakeet (*Psittacula longicauda*) only appears in one panel, but its appearance has special meaning. On panel BLD1A, IV 117, the scene

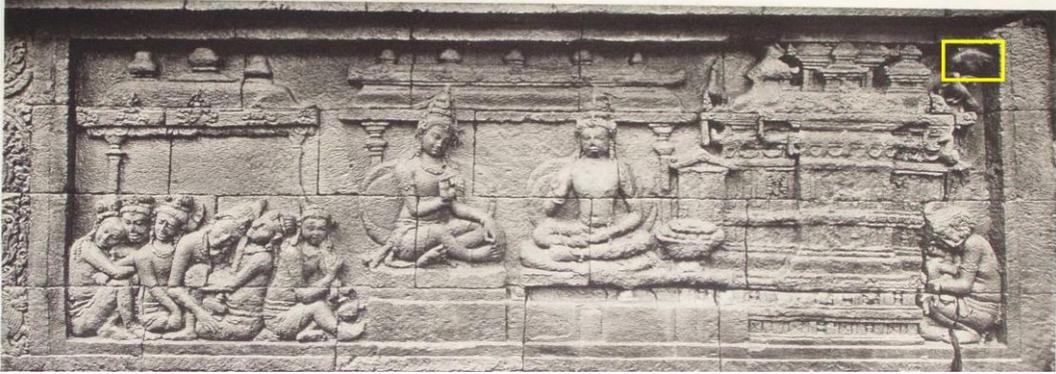


FIGURE 14. The appearance of Swiftlet (yellow square) on panel BLD1A, III 61. Photo source: Borobudur Conservation Office

tells of the Buddha's presence from Varanasi to the Deer Park in Rsiyatana and meeting five monks of virtuous ascetics. At first, the monks did not wish to greet and pay homage to the Buddha, but on the contrary, the monks lost their authority, and they immediately paid tribute to the Buddha and welcomed His arrival.

The presence of the Long-Tailed Parakeet (*Psittacula longicauda*) in the right, centre and left side of the panel indicates that in this panel story scene, the Buddha welcomes the old friend of the virtuous hermit for a full day, starting in the morning and afternoon and evening. Long-tailed Parakeet exposures as a time marker. Furthermore, according to the behavior, which often comes with large groups, flies fast, lives nomadically and has a sound that is heard continuously. Simultaneously, as parrots' presence gives the symbolic meaning in this story scene, the Buddha gave a massive, fast exposition of His teachings. The meaning of Long-Tailed Parakeet's presence is following the next story scene on panel BLD1A, IV 118, which tells the story of the Buddha doing the beginning of the first activity on his exposition. It summarized the four Ariya truths and the Noble Eight factors and laid the foundation for the following teaching. A long-tailed parakeet's sound constantly seems to give an excellent reward for all who believe, as stated at the end of the story on panel BLD1A, IV 118.

Cave Swiftlet (*Collocalia linchi*) (Fig. 14)

The Cave Swiftlet (*Collocalia linchi*) sculpture is quite challenging to distinguish with Edible-nest Swiftlet (*Aerodramus fuciphaga*). Cave Swiftlet (*Collocalia linchi*) tends to have a longer, spiky tail and prefers bright open habitats. Whereas Edible-nest Swiftlet (*Aerodramus fuciphaga*) live more often in dark areas, generally living in a colonized or grouped way.

Cave Swiftlet (*Collocalia linchi*) can be found in the *Lalitavistara* panel number BLD1A, III 61 as many as one individual, and revealed to the panel's right. This panel tells about dialogue between the Bodhisattva and the King, who asked to leave the palace searching for detractors. It is said that the King tried to prevent Him by offering whatever He wanted. Then the Bodhisattva asked that He could not be sick, old, dead and eternal wealth. The King could not grant the request and be forced to allow the Bodhisattva to leave the palace. Cave Swiftlet (*Collocalia linchi*) found on the roof of the palace hall and its presence on the right, along with Green Peafowl (*Pavo muticus*) and Sparrows (*Estrildidae*). These three species have different meanings, but all of them show same time frame during the middle of the night. This is reinforced by the behavior of the three species of birds that are perched on top of the palace.

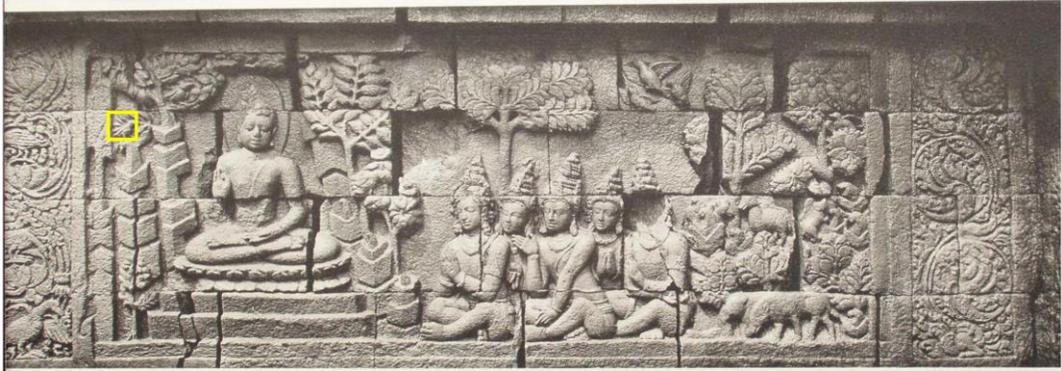


FIGURE 15. The appearance of Forktail (yellow square) on panel BLD1A, III 80. Photo source: Borobudur Conservation Office

The outside of the gazebo-like building (*pendhapa*), in this panel, can be inhabited by both of Cave Swiftlet (*Collocalia linchi*) or Edible-nest Swiftlet (*Aerodramus fuciphaga*). The difference between two of them is in using habitat niches lies in the dark building's space zone. Cave Swiftlet (*Collocalia linchi*) tend to live in lighter zones or outside buildings, whereas Edible-nest Swiftlet (*Aerodramus fuciphaga*) tend to be in darker habitats or indoor facilities.

In this panel, identification tends to lead to Cave Swiftlet (*Collocalia linchi*), who tends to describe its responsibilities and loyalties as an example of the biological behavior of Cave Swiftlet (*Collocalia linchi*) that can coexist with Edible-nest Swiftlet. Edible-nest Swiftlet often place their eggs in Cave Swiftlet's nest, then will continually incubate until hatch. Cave Swiftlet is still faithfully and responsible for feeding the swallows even though they are not the biological fledging.

Forktails (*Enicurus* sp.) (Fig. 15)

The Forktails (*Enicurus*) are small insectivorous birds. This bird can be recognized by its relatively small body size, lives around the water, and a long tail with a white tip. The bird lives in hills, mountains, forests, and areas around the water with food water bugs, snails, and larvae. In Indonesia, Forktails (*Enicurus*) have a distribution area covering Bali, Borneo, Jawa, to Sumatra.

Forktails can be seen in panel number BLD1A, III 80, as much as one individual. This bird likes to play in areas around rocky water source based on its behavior. This bird position in the panel is in the lower-left side around the water source. The playing time of this bird is often found in the afternoon that can be used as a time marker. The bird's behavior becomes a symbol that tells the Bodhisattva story, which has complex meditation in the forest near the water to reach nirvana. The complex meditation is not much different from the primary activity performed by Bodhisattva.

Sparrows (*Estrildidae*) (Fig. 11)

The Sparrows (*Estrildidae*) is quite challenging to identify the species name. Sparrows can be recognized by its relatively small in size, short beak for breaking down grains, short tails, and tight wing feathers. It generally inhabits dry, open, and grassy habitats, with main food is grains and small insects. This bird habitat around the rice fields and often lives in groups with a flock of about four to eight individuals.

The existence of Sparrows (*Estrildidae*) in the *Lalitavistara* story is quite numerous. This species is found in six panels: BLD1A, III 61; BLD1A, III 72; BLD1A, III 74; BLD1A, III 76; BLD1A, III 80; BLD1A, III 90, with 13 individuals. The distribution of Sparrows is often found on the left side of the panel with 8

individuals spread over four panels. Furthermore, there are 3 individuals of Sparrows sculpted in the centre of the panel spread over 1 panel, and 2 individuals sculpted on the right side of the panel spread over the two panels.

Sparrows (Estrildidae) likes to flies in paired, well known as hardworking bird species especially in forage and making nests. Such conditions are thought to be closely related to the breeding season because it has a high hatching ability; this bird must work hard to get enough feed to hatch. This behavior is a symbol of affection. Symbol of affection like stories in BLD1A, III 61; BLD1A, III 74, King gave affection and offered a material form to the Bodhisattva. Despite all his rejections, and chose to work hard to obtain complete deliverance to attain perfect enlightenment can be seen in the panel number BLD1A, III 61; BLD1A, III 72; BLD1A, III 74.

To achieve the Bodhisattva's brightness, do the hard work as Sparrows (Estrildidae) to meet the needs of feed sources. On the contrary, the food can be seen as spiritual nourishment, and the story can be seen throughout the day and night and perhaps days in the panel BLD1A, III 76. This time symbol can be seen from this bird whose active day and night as indicated by the presence of mammals active at night (Rusdianto et al., 2020). By using spiritual nourishment, Bodhisattva will easily repel or adapt to all kinds of life obstacles like a Sparrows that can easily live in primary forest habitats, rice fields, and gardens to urban areas.

Doves and Pigeons (Columbidae) (Fig. 7) and Rock Dove (*Columba livia*) (Fig. 12)

The Rock Dove (*Columba livia*) can be recognized by their body shape, small head, short legs and neck, with a slender beak. Rock Dove (*Columba livia*) is a domesticated bird with widespread habitat, ranging from forest areas to settlements. The main food is

generally fruit and grains. In comparison, Doves and Pigeons (Columbidae) have more common morphological features and a relatively small habitat. Because in the panel's appearance is difficult to identify this species, both Doves and Pigeons (Columbidae) and Rock Dove are differentiate using their habitat preferences. Rock Dove (*Columba livia*) live in residential areas, around palaces to the countryside, while the Doves and Pigeons (Columbidae) in this panel carved in forest habitats.

Doves and Pigeons (Columbidae) in Jawa there are 23 species that are identified revealed in the recesses of forest trees habitat. In contrast, Rock Dove (*Columba livia*) are identified separately because more exposed inhabit niches of habitats around buildings or trees in the residential area. The number of Pigeons revealed in the panel is 16 individuals spread across nine panels. In the *Lalitavistara* story, the Doves and Pigeons (Columbidae) are shown in panel number BLD1A, I 8; BLD1A, I 9; BLD1A, I 21; BLD1A, III 75; BLD1A, III 78; BLD1A, III 80; BLD1A, III 82; BLD1A, IV 100; BLD1A, IV 100 with total 16 individuals.

Doves and Pigeons (Columbidae) appearance in BLD1A, I 8; has the meaning of messenger. Furthermore, judging from the biological behavior, a Pigeon is one of the birds with a fixed pairing behavior. In Hindu culture, the Pigeon is a vahana of Goddess Rati-Goddess of Sexual Lust (Kirno, 2012-2013). Pigeon is a gentle animal loyal to its partner so that the Pigeon becomes a symbol of the messenger of affection and loyalty following its natural behavior.

The appearance of Doves and Pigeons (Columbidae) is mostly revealed on the panel's right side (13 individuals), and only three individuals are exposed to the panel's left side. His presence on the right indicates time presence in the morning, in the fresh-breathing morning air. It can also be interpreted as a messenger and in Christianity

as a symbol of the Holy Spirit's presence or saints' presence.

Of the total nine panels with Pigeons in them, five of them depict Pigeons that are solitary or alone, while the rest are present in pairs or followed by their chicks. The presence of this solitary dove can give meaning to the presence of a holy messenger. This story can be seen in the panels BLD1A, I 8 and BLD1A, I 9, wherein the story is related to Queen Mahamaya's desire to preach messages to carry out holiness. She received a hint that in her womb, the Bodhisattva holy spirit would be present.

Rock Dove's (*Columba livia*) presence in the *Lalitavistara* story was identified in panels BLD1A, I, 37; BLD1A, II 38; BLD1A, II 42; BLD1A, II 53; BLD1A, III 74; BLD1A, III 75; BLD1A, III 84 and BLD1A, IV 105. Compared to the total presence of Doves and Pigeons (Columbidae), its presence around the building was counted very large, 27 individuals and spread over eight panels. Rock Dove's presence in each panel tends to be balanced, with 13 individuals on the right side and 14 individuals on the left side. (Table 1).

The presence of Rock Dove (*Columba livia*) can generally be seen perched on buildings, in groups or pairs. Its existence was identified on three panels: BLD1A, II 42; BLD1A, III 84 and BLD1A, IV 105. Meanwhile, the solitary presence of Rock Dove was identified on the BLD1A panel, II 42, which means the presence of the Holy Spirit or the arrival of a holy person. This is in line with the story about the King who wants to marry off his Prince, but the girls he has gathered cannot see the Prince's fantastic nature and try to withdraw. Only one person named Gopa was able to look at the Prince, so finally, the Prince gave a ring to Gopa (Anandajoti, 2017). Therefore, the Holy Spirit's presence or a holy person as in the above story needs to be fed. For example, in

the story of Sujata looking for a human being worthy of giving milk rice (payasa), on the BLD1A panel, III 84, and selected curds gave by Trapusa and Bhalika in candra as in panels BLD1A, IV 105.

Green Peafowl (*Pavo muticus*) (Fig. 4)

The Green Peafowl (*Pavo muticus*) can be identified from the erect crest feathers on its head, the feather pattern on the neck and on the wings, and the distinctive long tail feather pattern. Female birds are generally smaller than males and only male have beautiful tail feathers. These beautiful tail feathers will be flapped, especially during the breeding season, to attract females. On *Lalitavistara* panels, the Green Peafowl (*Pavo muticus*) can be seen clearly from the neck and wings' morphology. In Indonesia, the distribution is only on the Jawa Island. These birds generally live in open areas such as open forests, parks and plantations.

The Green Peafowl (*Pavo muticus*) is the most exposed bird species in the *Lalitavistara* story. There are 29 individuals spread across 15 panels: BLD1A, I 15; BLD1A, I 21; BLD1A, II 37; BLD1A, II 42; BLD1A, II 43; BLD1A, II 53; BLD1A, III 61; BLD1A, III 74; BLD1A, III 75; BLD1A, III 76; BLD1A, III 83; BLD1A, III 85; BLD1A, IV 105; BLD1A, IV 115; and BLD1A, IV 117.

The appearance of the Green Peafowl (*Pavo muticus*) was mostly in the trees in the garden area and the pavilion around the palace as in panels: BLD1A, I 15; BLD1A, I 21; BLD1A, II 37; BLD1A, II 42; BLD1A, II 43; BLD1A, II 53; BLD1A, III 61; and BLD1A, IV 117. It is told that the scenes on the panels are in Asoka Park, the pavilion around the palace, school buildings and Varanasi Park. The presence of the Green Peafowl (*Pavo muticus*) is in accordance with its natural habitat, namely in open areas and parks. His presence on these panels also seems to strengthen the impression of the beautiful and luxurious Asoka Park, the pavilion, the school

building, and the Varanasi Park. However, from all the Green Peafowl descriptions in the *Lalitavistara* panel, no individual was found that was flapping its tail feathers. The implicit flapping of the tail feathers represents the vanity of temporary beauty.

Furthermore, the appearance of the Green Peafowl (*Pavo muticus*) on the panel was found in a situation that was in an open forest, such as in panel BLD1A, III 74; BLD1A, III 75; BLD1A, III 76, BLD1A, III 83; BLD1A, III 85; BLD1A, IV 105; and BLD1A, IV 115. On panel BLD1A, III 74; BLD1A, III 75; BLD1A, III 76 and BLD1A, IV 105, The Bodhisattva is carved in a serene sitting position on His throne. The Green Peafowl presence, which is always depicted together with the Bodhisattva in four different story scenes, seems to give the impression of a great and elegant Bodhisattva. Then, the Green Peafowl appeared on panel BLD1A, IV 115, in the Ganges River's open forest. Its presence, along with other birds such as Eagles (Accipitridae), White-breasted Waterhen (*Amaurornis phoenicurus*) and Cattle Egret (*Bubulcus ibis*), as well as mammals such as Asiatic Short-clawed Otter (*Aonix cinereus*), Russa Deer (*Rusa timorensis*) and Wild Boar (*Sus scrofa*), gives an impression of a harmonious and balanced forest ecosystem.

The presence of the Green Peafowl (*Pavo muticus*) in all panels is revealed in several positions, including: on the right (11 individuals), the middle (9 individuals) and the left (9 individuals). The Green Peafowl presence on the right side indicates the beginning of the story, while on the left indicates the end of the story. Green Peafowl exposed in pairs can be found in five panels; the rest are exposed independently or in a solitary manner.

In particular, on panel BLD1A, I 15, this panel's story is related to Queen Mahamaya's wish to meet King Suddhodana in an Asoka

Park around the palace. This story continues in the next panel, BLD1A, I 16, which tells the desire to ask the brahman the meaning of his dream. The presence of a Peafowl on the panel BLD1A, I 15, is a symbol of a holy person's presence, represented by the presence of a Green Peafowl on a tree. This symbol of the bird's sanctity is also embraced in Hinduism, like Vishnu's feathers.

DISCUSSION

In the *Lalitavistara* Relief of Borobudur Temple, there are carvings of various fauna, such as mammals, birds, fish, reptiles and mollusks. The presence of these various faunas is to describe the setting of the cultivation environment and the setting of the natural environment to strengthen the story of the Buddha's life journey, some of which serve as a decorative and aesthetic function of filling empty spaces in relief (Suripto and Pranowo., 2001). Besides, it can also convey information about when (time) the scene took place. This can be observed from the fauna's behavior being chiseled, such as flying, perching on tree branches, and perching. This behavior can be interpreted as when the fauna behaves in this way in their natural habitat. Sunyoto (2017) reveals that the expertise in sculpting and trading of artworks existed in the century when Borobudur was founded, then the exposed bird carvings were made in great detail both in terms of morphology and in relation to the use of their main habitat, so it is likely that the relief makers were native Jawanese who embraced Jawa. Mahayana Buddhism or followers of the original Jawanese ancestral religion. The main content of the *Lalitavistara* story is made according to the actual Buddhist origin, while the sculptors carve birds according to their original forms and behavior, which implies that there was acculturation at that time towards the arrival of Mahayana Buddhism in Jawa.

In this study, 22 species of birds were found spread across 31 *Lalitavistara* Relief panels. This amount represents 5% of the total number of bird species in Jawa (Sukmantoro et al., 2007). The number of bird species exposed in the panel *Lalitavistara* was not much different from the number of mammal species exposed, 23 species. However, from the panels' distribution that reveals them, more panels show the mammals' species, 43 panels (Achmadi et al., 2020; Rusdianto et al., 2020). From a number of panels that exposed bird species, 15 panels also revealed identified mammal species. The number of panels indicates that there are 16 panels for independent birds or do not find outcrops of mammals.

In the *Lalitavistara* story, the birds exposed are birds with distribution in Jawa, except for the Long-tailed Parakeet (*Psittacula longicauda*). Long-Tailed Parakeet in Indonesia is found in Sumatra and Borneo. The appearance of the Long-Tailed Parakeet on the relief has two possibilities; first, this bird is exposed through the sculptor's imaginations because it is often found due to the strong trade of the time; second, this bird was once in Jawa but is now extinct. This second possibility is considering that the islands of Sumatra, Borneo and Jawa are still in one plate geologically, so it is possible that this species also exists in Jawa.

Such conditions are almost the same as the appearance of parrots' reliefs Yellow-crested Cockatoo (*Cacatua sulphurea*) which are exposed quite a lot in the Borobudur temple. According to current records, Yellow-crested Cockatoo (*Cacatua sulphurea*) are not found in Jawa and can only be seen in Sulawesi, Moluccas, Papua, Masalembu, Sumba, Sumbawa, Komodo, Flores, Timor, and various other islands in the Lesser Sundas. As a note, Masalembu Island and Jawa Island are part of the Sunda plate geologically, and the fact is that there are parrots on these islands,

but not in Jawa. Therefore, Long-tailed Parakeet's biogeographic status (*Psittacula longicauda*), including the Yellow-crested Cockatoo (*Cacatua sulphurea*), needs further questions and studies.

The panels in *Lalitavistara*'s story are like a work of art from all kinds of ideas that the artists embodied in concrete forms (Herbert Read, Translation Sp. Soedarso, 1990: 5). The exposure that gives rise to birds' existence is a series, a long process that develops from the outside world to the inner world of the artist. Phenomena that exist outside of the artist become a sense of creativity which is carried out by observation. This reality enables artists to see imaginary spaces (Pramesta, 2020), and the emergence of these imaginary spaces can be motivated by various problems that occur in society and their environment so that they can become representations and abstractions of the realities of their time (Saidi, 2008); thus the appearance of the various bird was full of meaning at that time and not only as decoration. Birds is a symbolic language and can be seen around their lifetime, and a representation or abstraction of reality, the meanings of their appearance have many similarities so that they seem to be repeated from one temple to another. Furthermore, similar to bird appearance on the Borobudur temple panels, they are also found on temples panels scattered in Central and East Jawa (Raffles, 2008), even though the similarities between one temple and another have not yet been discussed in depth regarding the identification of its species. However, from several bird medallions revealed by Kirno (2012-2013), a number of temples that reveal bird-shaped medallions have similar meanings. The Pigeon bird medallion is one species that is also found in Hindu temples, as shown in several temples in Jawa (Raffles, 2008).

In the *Lalitavistara* panel, which reveals birds' existence, all of them are birds that are

active during the day, in contrast to the species of mammals that are exposed, where some species of mammals have their behavior at night (Achmadi et al., 2020). Seeing this condition indicates that if the meaning of its appearance is a marker of time, then all the occurrences of birds indicate a story with a time set in the morning or evening. Based on the position of the birds in the panel, there is a tendency that the position of each species of bird has a balance of story events; for example, what happens on the left of the panel is usually a story incident in the afternoon, and vice versa if on the right it means morning. The Sparrows are depicted far more on the left of the panel (4 panels = 8 individuals) compared to the positions on the right (2 panels = 2 individuals) and in the middle of the panels (1 panel = 3 individuals). This condition indicates that in addition to characterizing time when the story occurs in the afternoon, another meaning is the result of hard work after a full day of activities. Such condition is shown in panel BLD1A III, 76, which tells of the Bodhisattva's decision to change his way to enlightenment (Anandajoti, 2017).

From many exposed panels, it is often found that in one panel, nocturnal mammals are found along with the appearance of birds, as can be seen on panel BLD1A III, 76. The panel tells where the Bodhisattva is carrying out austerities very strongly (Anandajoti, 2017). The appearance of the two animals on this panel means that the required time should be at least one day and night or last for days in practicing the meditation. However, it is unfortunate that from the existing symbols cannot be found an accurate sign to determine how long the Bodhisattva does meditation.

Like the panel that exposes mammals as sacred animals such as elephants, lions, etc. (Rusdianto et al., 2020), birds' occurrence also shows the same thing where there are special species. Like the species of exposed mammals, the number of species that

dominate will tend to be the exalted ones. The species that are exalted in birds are the Rock Dove and the Green Peafowl. The Rock Dove (*Columba livia*), Doves and Pigeons (Columbidae) and Green Peafowl (*Pavo muticus*) species appeared 27, 16 and 29 individuals, which can be found in 8, 9 and 15 panels, respectively. From all panels, six panels repeatedly revealed Doves and Pigeons (Columbidae) and Green Peafowl (*Pavo muticus*) in one panel. Then there were also repeated Sparrows and Green Peafowls that appeared in one panel total in three panels.

Doves and Pigeons (Columbidae) and Green Peafowl placed in a special position. It's supported by the results of Bray curtis grouping analysis where there are five groups found; groups of Green Peafowl (*Pavo muticus*), Rock Dove (*Columba livia*) and Doves and Pigeons (Columbidae) are grouped into one group (Fig. 16). Based on this grouping, it can be explained that Pigeon and Green Peafowl (*Pavo muticus*) are sacred and glorious animals. These bird species symbolize loyalty and imply the messengers of peace, majesty, and loyalty to the creator. These traits must be executed in a loud voice full of speed, strength, and intelligence like the behavior of Long-tailed Parakeet *Psittacula longicauda* (symbol S), White-breasted Waterhen (*Amaurornis phoenicurus*) (symbol C), Cattle Egret (*Bubulcus ibis*) (symbol D), White-vented Myna (*Acridotheres javanicus*) (symbol B).

To feel light in His devotion, it is necessary to work hard like the Sparrows behavior (Estrildidae) (symbol M). To do more accessible work, should work with the way *Gotong Royong* (mutual assistance) like a Little Egret *Egretta garzetta* (symbol L) fly by forming a "V" formation, all obstacles wind obstacles will be overcome easily. Even though life in a dirty world and foraging food with a beak in the mud, the heart should remain clean like a Ducks (*Dendrocygna*)

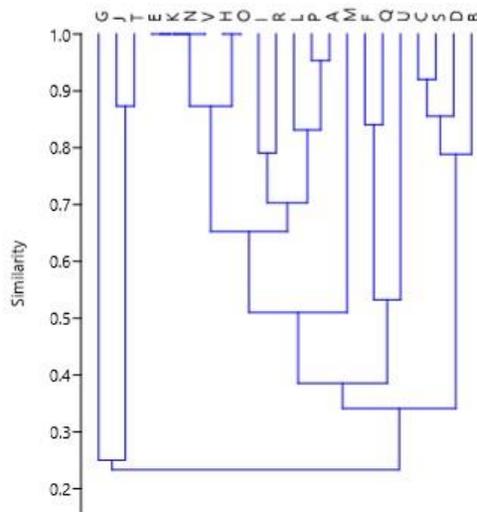


FIGURE 16. Cluster analysis of bird species in *Lalitavistara* relief of Borobudur temple

(symbol "J"), because ducks has oil content in feather to keep it clean. All actions in life must be done responsibly, like the behavior of Cave Swiftlet (*Collocalia linchi*) that incubate eggs belonging to other species of birds (symbol T) but still responsible for feeding the hatched eggs until they can fly alone. Such means are expected to make it easier to bring holiness to be able to face the creator.

In *Lalitavistara*, the story is divided into 5 acts to achieve the Bodhisattva life story perfection. Those five innings each stage have a key story that can be seen from the appearance of birds. The results of PCA analysis of bird species revealed in five stages of *Lalitavistara* story can be explained that the total variation can describe the existence of bird fauna in the five stages of the story is 91%, wherein axis 1, axis 2, and axis 3 explain 51.92%, 20.6% and 18.07% respectively (Table 2).

According to Fig. 17, in the MPK story (pregnancy), where the Queen and the King get a message of saints' presence (Anandajoti, 2017) depicted in the panel BLD1A, 8, and the messages are depicted with the meaning of the presence of Pigeons. So that the news can

be trusted by the people, then the form of proclamation is the main key. In this panel, it was shown by the presence of the Oriental Magpie-robin (*Copsychus saularis*) whose exposure appeared in the early rounds of BLD1A, I 9. This bird has a tunable voice and its presence at the dependency and pregnancy stage at the same time gives the meaning that the news of the saint presence indicated from the symbol of Pigeons in the panel BLD1A, I 8, the next message of presence has been spread causes the public feel happy to hear the message of His presence. The messages of presence displayed on the next dove symbol and the birth presence confirmed by the symbol of the appearance of Jawan elephants (*Elephas maximus*) in the BLD1A, I 15 panel, which hints that the baby conceived by Queen Mahamaya is the baby of the saints (Rusdianto et al., 2020).

For the MKM stage, bird species with greatness, such as Green Peafowl (*Pavo muticus*) and Rock Dove (*Columba livia*), are the main symbol of the story (Table 1). In contrast, Doves and Pigeons (Columbidae) in the trees or outside the building tends to be the main symbol in the MKP, along with

TABLE 2. The value of the PCA analysis component for each bird species in the five stages of the Lalitavistara Relief

| Species symbol* | PC 1 | PC 2 | PC 3 | PC 4 | PC 5 |
|-----------------|----------|---------|---------|----------|----------|
| A | -0.04818 | -2.0779 | 4.3147 | -3.1194 | 0.28074 |
| B | -6.3273 | 4.6541 | 0.50114 | -0.8682 | -0.58949 |
| C | -5.9811 | 5.5794 | 2.4429 | -1.7491 | -0.1541 |
| D | -5.2874 | 7.4334 | 6.3337 | -3.5143 | 0.71832 |
| E | -3.7445 | -1.9729 | -3.0828 | 0.45789 | -1.3844 |
| F | 22.419 | 7.0648 | -6.3575 | -2.7474 | -1.784 |
| G | -5.9793 | 2.7522 | -1.1063 | 8.6752 | -1.8375 |
| H | -2.3223 | -3.8084 | -2.6341 | 0.12942 | -1.2802 |
| I | 0.52742 | -7.4864 | -1.735 | -0.52877 | -1.0713 |
| J | -3.6982 | 4.669 | -6.9641 | 1.9282 | 4.7486 |
| K | -3.7445 | -1.9729 | -3.0828 | 0.45789 | -1.3844 |
| L | -2.9135 | 0.2481 | 1.5782 | -1.6567 | -0.33929 |
| M | 7.3401 | -11.548 | -2.3358 | -1.0568 | 3.755 |
| N | -3.7445 | -1.9729 | -3.0828 | 0.45789 | -1.3844 |
| O | -2.3223 | -3.8084 | -2.6341 | 0.12942 | -1.2802 |
| P | -1.1451 | -0.6622 | 3.9686 | -2.8661 | 0.20034 |
| Q | 23.327 | 4.6467 | 1.9299 | 2.7455 | 0.023956 |
| R | 2.7983 | -7.1239 | 3.3802 | -2.9759 | 0.07935 |
| S | -5.7141 | 6.293 | 3.9406 | -2.4286 | 0.18171 |
| T | -4.7158 | 4.0115 | -6.1394 | 1.7277 | 2.8714 |
| U | 5.0203 | -2.9449 | 13.848 | 6.3443 | 1.014 |
| V | -3.7445 | -1.9729 | -3.0828 | 0.45789 | -1.3844 |

*species symbols see table 1

Eagles (Accipitridae) and Olive-backed Sunbird (*Cinnyris jugularis*). These birds symbolize Bodhisattva journey; it is necessary to be like an Olive-backed Sunbird (*Cinnyris jugularis*) that sucks honey flowers and used it to His journey to the creator upwards like an Eagle flying (*soaring*) and at the same time as the top predator and maintain the balance of food web, thereby will be obtained eternal freedom as the meaning of Pigeon existence. In MLD, all bird species revealed in this round tend to have important values and symbolize the same meaning. Species with prominent meaning not found, but there is a tendency for Ducks (*Dendrocygna*) presence to be more important to live with a clean heart.

When compared with other fauna, birds are the most numerous groups of fauna (133 individuals) in Relief *Lalitavistara*, while the number of species is only one less (22 species) than mammals (23 species) (Achmadi et al., 2020; Rusdianto et al., 2020). These findings can at least prove some things. First, the sculptor was both an artist and a scientist because being able to convey the message of the story in relief sculptures, they were also able to illustrate the morphology of various

species of birds in detail and precisely, including behavior in their natural habitat. Second, 22 bird species have been identified. This is evidence that these bird species exist and spread in Jawa, at least since the construction of Borobudur Temple around 7th to 8th centuries, or even before the temple was built. This fact becomes the basis of the foothold to examine further the species of birds that live in Jawa, especially about evolution and its distribution map.

Green Peafowl (*Pavo muticus*) is the most widely appeared, with 29 individuals spread across 14 panels. This proves that the Green Peafowl has multi-meaning and important role in the story of Gautama Buddha's life journey. The Goddess Saraswati-Goddess of Science and Art is often depicted along with this bird. The Green Peafowl sculpture presents the impression of elegance and luxury because of its beautiful tail feathers, especially when unfold. In the *Lalitavistara* panel, Green Peafowl sculpted with rising-unfold tail feathers not found, because besides presenting the impression of elegance and luxury, the beauty of Green Peafowl feathers can also present the impression of conceit. Kirno

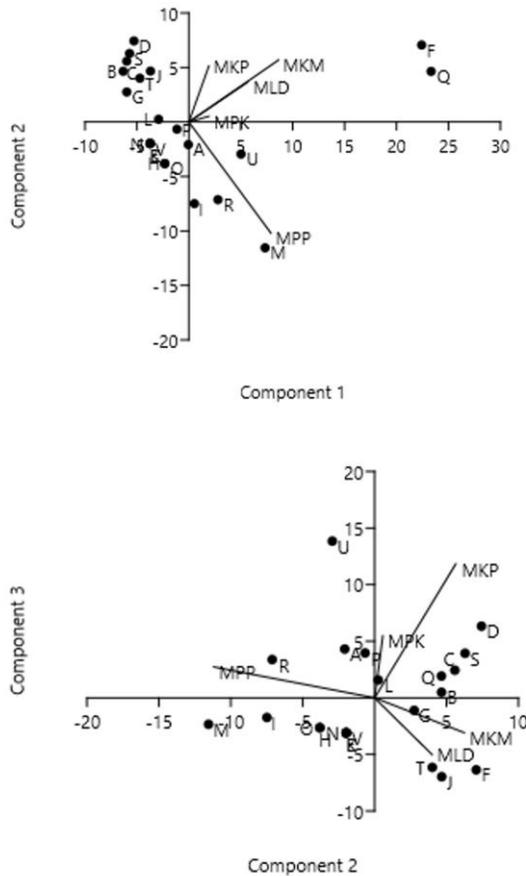


FIGURE 17. PCA analysis of bird species in five rounds of *Lalitavistara* Relief

(2012-2013) stated that the Green Peafowl (*Pavo muticus*) could be a symbol of over pride because its tail feathers' beauty is only temporary. In addition, in Hinduism, Green Peafowl is seen as a vehicle for the God of War, the God Skanda or Kartikeya, and the Goddess Parwati. In addition to being the symbol of the upper world, Green Peafowl is also a symbol of chastity and happiness (Febrianto and Idris, 2015).

The presence of birds and other fauna species presents a new perspective and dimension on how to read *Lalitavistara* story reliefs. In biological sciences, birds are a group of fauna that is well known to have a distinctive voice or chirping. Its appearance in

the relief stories of Borobudur Temple can complement the storyline that is being built. For example, in the panel BLD1A, III 74, when the sculptor wants to create King Bimbisara narrative story who was paying homage to the Bodhisattva on Mount Pandava (Anandajoti, 2017), then in the panel appeared five species of birds that have distinctive chirping sounds, such as Sparrow, Olive-backed Sunbird (*Cinnyris jugularis*) and Red-breasted Parakeet (*Psittacula alexandri*). The presence of the birds together with Barking Deer (*Muntiacus muntjak*), Jawan Tiger (*Panthera tigris sondaica*) and Black Giant Squirrel (*Ratufa bicolor*) in this panel (Rusdianto et al., 2020; Achmadi et al., 2020),

seems to complement where the story happened, Mount Pandava. The chirping sound of birds carved in it will bring the impression of Mount Pandava's atmosphere that is natural, cool and shady.

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