

Ethnoornithology: Identification of bird names mentioned in *Kakawin Rāmāyana*, a 9th-century Javanese poem (Java, Indonesia)

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Abstract. Mulyanto D, Iskandar J, Gunawan R, Partasasmita R. 2019. *Ethnoornithology: Identification of bird names mentioned in Kakawin Rāmāyana, a 9th-century Javanese poem (Java, Indonesia)*. *Biodiversitas* 20: 3213-3222. Birds have played an important role in Javanese culture for a long time. For example, birds have been culturally used as sources of folk stories, myths, illustrated old manuscripts, paintings on relief walls of temples, and inspiration of writers to make poems. This article presents the results of an ethnoornithology study that tried to identify all bird names mentioned in *Kakawin Rāmāyana* (KR), an old Javanese poem, using a qualitative method, mainly interpreting KR text based on an ethnoornithological approach. The results showed that 84 bird names are mentioned in the *Kakawin Rāmāyana*, belonging to 26 families, and 17 orders. The birds mentioned in KR are predominantly residents, some are regular visitors or vagrant, and only a few are absent. The orders whose members appear most often are Passeriformes (18), Columbiformes (7), Pelecaniformes (6), Ciconiiformes (5), and Cuculiformes (5). There are only 13 names which are Sanskrit in origin. Based on this study, it can be inferred that birds have played an important role in Javanese culture.

Keywords: Bird names, ethno-ornithology, Old Javanese poems, Ramayana story

INTRODUCTION

Birds have various ecological, socio-economic and cultural functions for human beings (Partasasmita et. 2016, 2017; Iskandar 2017; Iskandar et al. 2017, 2019). In terms of cultural functions, birds in different ethnics in Indonesia have become inspiration sources of folk stories, myths, symbols, statues, temple architecture works, and temple wall reliefs which are widely scattered in Java island, including Prambanan temple in Jogjakarta (Suripto and Pranowo 2001; Suliastiyati 2008; Van der Mij 2009; Wardani et al. 2015; Anggraini 2017; Iskandar 2017; Sanjaya et al. 2017; Hanum and Dahlan 2018; Sodarwanto et al. 2018). According to ecological history, birds have played an important role in Javanese culture for a long time (Jepson and Landle 2005, 2009, Jepson 2010). In addition, various bird names have been written in some ancient Javanese manuscripts, such as *Kakawin Ramayana* and *Serat Ngalamanting Kutut* (cf. Anggraini 2017; Sanjaya et al. 2017). Thus, from historical point of view, this cultural importance possibly has a long history. Philological studies of old Javanese manuscripts show that birds play an important role in old Javanese literary works as part of landscape description, symbols of religious value, or as allusions to political figures or religious groups (Aciri 2010, 2011, 2014, 2017, Totton 2003). These studies, because only concerned with understanding historical references of

allusions that include certain bird names, do not attempt to identify scientific names of the birds.

Out of Javanese cultural context, there have been considerably growing interests in using historical records as ethno-ornithological sources (Bonta 2010; Suripto and Pranowo 2001; Anderon 2017). Ethnoornithology is one part of the ethnobiology and ethnoecology, i.e., studies dealing with traditional knowledge of birds (Iskandar 2017). To accomplish an ornithological study, generally, researchers begin with the native language categories. They need to know things from the point of view, and the approach of a researcher (Townsend 2009).

This article presents the results of an ethnoornithology study that tried to identify all bird names mentioned in *Kakawin Rāmāyana* (KR). The bird names are interpreted in the relationships between social system of Javanese people and their environment, particularly birds. The KR is believed to have been written during the Era of Medang Kingdom under the reign of Mpu Sindok, approximately 820-870 AD, in central part of Java island (modern Indonesia). The KR is a *kakawin*, the Javanese form of *kāvya*, a poem modeled on traditional Sanskrit meters. The KR covers a large variety of settings as characters mentioned in the text traveled around the area. Citing and mentioning birds' names in the text can be considered as representation of ethnoornithological aspects of Javanese traditional knowledge of birds.

MATERIALS AND METHODS

This study used a qualitative method, i.e., mainly interpreting KR text based on an ethnoornithological approach. We used three volumes of modern and critical edition of KR (Santoso 1980). The KR is organized into 26 cantos marked by a separate storyline. Each canto is organized into stanzas or group of lines that form the basic metrical unit. There are 2779 stanzas in the text that are distributed unequally. For example, 24th canto contains 260 stanzas whereas 16th canto contains only 47 stanzas. All citations from the KR were identified using the numbers of canto and stanza, for example, citation from 3rd stanza of 23rd canto, was written KR 23.3.

We read and analyzed all cantos and stanzas of KR, and took notes of all birds species mentioned in the text. In all, we reviewed one by one of the 26 sarggas and 2779 stanzas and identified details of the bird names, birds roles and metaphors in the text, and linked them to the context of the stories. These works serve as the foundation of our database which then was arranged as follows: the old Javanese names of birds, the number of each bird name cited in the text, the value attributed to the bird, and other information such as birds' habitat and behavior.

As in historical ethnobiology in general (Medeiros 2014, 2016), the main methodological problems of historical ethno-ornithology are how to identify bird names recorded in ancient language and relate them with their scientific names. Since KR is written in *Kawi*, Javanese extinct language, we made use of Old Javanese-English Dictionary written by P.J. Zoetmulder (the OJED) to look for all entries of birds. Consulting to the OJED was the first attempt. The next thing was to connect those *Kawi* names of birds to their ornithological names, so we compared those names to vernacular languages that are close to *Kawi* such as Modern Balinese, Malay, Sundanese, and living Javanese. Since, as literary language, *Kawi* has strong relation to Sanskrit, so we also tracked Sanskrit reference of Old Javanese bird names with Sanskrit origin (Dave 2005; Panja 2012; Dhammika 2015).

In the case of common and familiar bird names that are related to various ornithological species, we chose to assign the most common birds in the region, and in some case, we chose to associate the common names with a scientific genus or family since we were not able to add further details. To identify *Kawi* names with the scientific names, a number of publications were used (MacKinnon 1988; Strange 2012; Arlott 2018).

RESULTS AND DISCUSSION

A total of 85 bird names are mentioned in KR with their ornithological identification, alphabetically, as follows:

Alap-alap. This name is mentioned in KR 15.57, 19.73, 23.46, 24.109, 25.65. OJED (46:3.11) identifies it as “a bird of prey, an eagle”. Santoso (1980) identifies it as “eagle” and “hawk”. In the text, this bird is used as a reference of agility, speed, grip strength because of its sharp dive when it catches its prey. Moreover, the text

describes that the bird is commonly found in forested plains. It is highly likely that this bird belongs to *Falconidae* (*Falconiformes*). There are six species of this bird family known in Java, four of which are resident while two others are winter visitors.

Andah. This name is mentioned in KR 24.121 and 24.122. This bird is identified as duck by OJED (46:3.11), and “wild-duck” by Santoso (1980) based on description of bird’s habitat. Probably, this name refers to genus *Anas* (*Anatidae*, *Anseriformes*) whose two members, *Anas gibberifrons* (Müller 1842) dan *Anas superciliosa* (Gmelin 1789) are resident in Java Island.

Atat. This name is mentioned in KR 9.56, 24.102, 24.110, 25.18. OJED (152:11) identifies it as “green parrot”. Santoso (1980) identifies it as “parrot”, “myna” (637), and “cockatoo” (680). Possibly, this name refers to *Psittidae* (*Psittaciformes*). The only *Psittidae* in Java is *Psittacula alexandri* (Linnaeus 1758), which is resident and it is cognate to “betet” in Malay.

Baka. This name is mentioned in KR 23.22, 24.117, 25.21. OJED 192:2 and Santoso (1980) identifies it as “heron” from Sanskrit “baka”. With Indian sub-continent as context, Panja (2012) identifies “baka” with *Anthropoides vergo*, the *Demoiselle crane* of *Gruidae* (*Gruiformes*), whereas Dhammika (2015) identifies it as “wading birds of the *Ardea alba* (Linnaeus 1758), *Egretta garzetta* (Linnaeus 1766) or *Bubulcus ibis* (Linnaeus 1758)”, and Dave (2005) as “*Leptoptilos javanicus* (Horsfield 1821)” the Greater Adjutant. With Java as context, both Totton (2003) and Acri (2010) identify it specifically as *Ardea sumatrana* (Raffles 1822) Great-billed Heron, whose subspecies, *A.s. sumatrana* (Raffles 1822) is found in coastal area of Java. But, in the text (KR 24.117) this bird is depicted as preying on frogs in the paddy field. This depiction does not match with *A. sumatrana* description which is a coastal bird. Possibly, this name refers to other *Ardeidae*: *Ardea purpurea* (Linnaeus 1766) or *Ardeola speciosa* (Horsfield 1821) (*Ardeidae*, *Pelecaniformes*) whose sub-species, *A.p. manilensis* (Meyen 1834) and *A.s. speciosa* (Horsfield 1821) are resident in Java island.

Bangkak. This name is mentioned in KR 24.117. Santoso (1980) identifies it as “stork”. In the text, this bird is described as a fish-eater. Totton (2003) identifies it with “Oriental Darters”. It is likely that this name refers to *Anhinga melanogaster* (Pennant 1769), the Oriental Darter of *Anhingidae* (*Suliformes*), the only *Anhinga* resident in Java.

Bango. This name is mentioned in KR 25.62. OJED 208:8 identifies it as “heron (*Ciconia jav.*)”. Santoso (1980) identifies it as “stork”. In Indonesian ethnoornithological vocabulary, the name “bango” or “bangau” refers to *Ciconiidae* (Gray 1840) (*Ciconiiformes*). Out of 24 taxa of this family known in Java, only three are resident: (i). *Mycteria cinerea* (Raffles 1822) the Milky Stork, (ii). *Leptoptilos javanicus* (Horsfield 1821) the Lesser Adjutant, and (iii). *Ciconia episcopus neglecta* (Finsch 1904) the Asian Woollyneck. All of them are called “bango” in living Javanese or “bangau” in Malay.

Bayan. This name is mentioned in KR 11.2d and 16.38. OJED (229:6) and Santoso (1980) identify it as “parrot”.

This bird is depicted as a pet and can be trained to imitate human voice. In Malay ethno-ornithological vocabulary, the bird is “nuri bayan”, *Eclectus roratus* (Müller 1776). This bird, however, is not found in Java or its vicinity. Possibly, this name refers to *Loriculus galgulus* (Linnaeus 1758) of *Psitticidae* (*Psittaciformes*), which is resident in Java.

Besi. This name is mentioned in KR 24.116 and 25.59. Santoso (1980) identifies it as “heron”. In the text (KR 25.59) this bird is depicted as silent and the only sound from it is that of their flapping wings. Acri (2010) identifies it as *Leptoptilos javanicus* (Horsfield 1821). Another possible identification is *Ciconia episcopus neglecta* (Finsch 1904), the Asian Woollyneck of *Ciconiidae* (*Ciconiiformes*) whose one characteristic is generally being silent.

Burwak. This name is mentioned in KR 25.65. OJED 277:6 identifies it as a Javanese name for Sanskrit “kurara” which means “osprey” or “fish-eagle” (Panja 2012). If this identification is true, the most possible reference is *Pandion haliaetus cristatus* (Vieillot 1816) of *Pandionidae* (*Accipitriformes*), the only Eastern Osprey that is resident of Java.

Cakrawaka. This name is mentioned in KR 11.2b, 24.120, and 24.233. Kern (1875) identifies it as *Anas javanica*. It is a Sanskrit name for *Tadorna ferruginea*, which is mentioned in Valmiki’s Ramayana and other Indic classic literature (Pieruccini 2002; Dave 2005; Roy 2005; Panja 2012; Dhammika 2015). Santoso (1980) identifies it only as “wild duck”. OJED 277:6 identifies it as “Ruddy Goose or Brahmany Duck”. OJED’s identification cannot be accepted because *Chloephaga rubidiceps* and *Tadorna ferruginea* are absent in Java. It is mentioned in the text that this bird is found in freshwater lake and cannot live far from waters. In Java, probably this name refers to two species from genus *Anas* (*Anatidae*, *Anseriformes*): *Anas gibberifrons* (Müller 1842) the Sunda Teal and *Anas superciliosa* (Gmelin, 1789), the Pacific Black Duck, which are resident.

Canggiyar. This name is mentioned in KR 24.120. Juynboll (1902) identifies it as “boschhaan”, avifauna which is in Sundanese is named as “cangehgar”. Santoso (1980: 643) identifies it as “woodhen”. OJED 302:6 identifies it as “woodfowl”, and Wojowasito (1980) identifies it as *Gallus ferrugineus*. In Sundanese ethno-ornithological vocabulary, “cangehgar” refers specifically to *Gallus varius* (Shaw 1789), the Green Javan Jungle fowl (Beebe 1921) of *Phasianidae* (*Galliformes*), which is resident in Java.

Cataka. This name is mentioned in KR 7.16. From Sanskrit, Panja (2012) identifies it as *Ploceus bengalensis*, whereas Dave (2005) as *Cuculus varius*. OJED 311:10 and Soepomo (1977) identify it as *Cuculus melanoleucus*. The scientific name currently accepted for this species is *Clamator jacobinus* (Boddaert 1783), the Jacobin Cuckoo. Unfortunately, this bird is not found in Java. The similar bird that is resident in Java is *Cuculus lepidus* (Müller 1845), the Sunda Cuckoo of *Cuculidae* (*Cuculiformes*).

Cikru. This name is mentioned in KR 24.120 and 26.5. In the text, this bird is depicted as friend of “cataka”. Dave

(2005) identifies “cikura” as *Tichodroma muraria*, the Wallcreeper of Sittidae. Probably, this name refers to *Centropus bengalensis javanensis* (Dumont de Sainte Croix 1818), the Lesser Coucal of *Cuculidae* (*Cuculiformes*).

Cod. This name is mentioned in KR 24.122. OJED 322:17 identifies it as “a kind of (talking-) bird; probably *betet*, a small parrot, parakeet”. Acri (2011) says that this bird belongs to a class of birds that are prohibited from being eaten by priest along with other birds that can mimic human voices. Santoso (1980) identifies it as “canary bird”. It is probable that this name refers to *Chrysocorythus estherae* (Fringillidae, *Passeriformes*) whose two sub-species, *C.e. estherae* (Finsch 1902) and *C.e. orientalis* (Chasen 1940), are resident in Java.

Cucur. This name is mentioned in KR 24.121 and 25.33. OJED 335:9 identifies it as “male *Cuculus flavus*, and describes it as being in love with the moon”. The accepted name for this bird is *Cuculus micropterus* (Gould 1838), the Indian Cuckoo whose sub-species, *C.m. concretus* (Müller 1845) is a visitor to Java. Zoetmulder (1974) identifies it as “male of *tadah asih* or *kedasih*” which is a reference to *Cacomantis merulinus* (Scopoli 1786), the Plaintive Cuckoo. Related to OJED’s statement that this bird “is being in love with the moon”, Soepomo (1977) argues that it can not be cuckoo, especially the Plaintive Cuckoo, because in Javanese culture this bird associated with death or disaster. In Malay ethno-ornithological vocabulary, “cucur” refers to night-birds, especially owls. One of them, Pungguk, is associated with longing for the moon as in proverbs “*bagaikan pungguk merindukan bulan*” (like the Pungguk longing for the moon). Thus, it is possible that this name refers to *Ninox scutulata javanensis* (Stresemann 1928), the Brown Boobook or *Strix leptogrammica bartelsi* (Finsch 1906), the Bartels’s Wood Owl, members of *Strigidae* (*Strigiformes*), which are resident in Java.

Dadali. This name is mentioned in KR 4.75 and 25.28. OJED 344:3 identifies it as “a bird of prey. GR, vulture”. In Sundanese “dadali” and in Malay “dedalik” refers to a *Falconidae* (*Falconiformes*): *Falco moluccensis microbalius* (Oberholser 1917), the Spotted Kestrel, which is resident in Java island.

Dalupak. This name is mentioned in KR 25.61. OJED 354:11 identifies it as “mistletoe bird”. Literally, “dalupak” means “mistletoe”. In Malay vocabulary, “cabai benalu” is a reference of *Dicaeum hirundinaceum* (Shaw 1792). This bird, however, is not found in Java. Probably this name refers to *Dicaeidae* (*Passeriformes*), whose seven members are resident in Java with their focal species being *Dicaeum sanguinolentum sanguinolentum* (Temminck 1829).

Darapati. This name is mentioned in KR 24.106. In Indian Buddhist tradition, “*daddara*” refers to *Pterocles exustus* of *Petroclidae* the Chesnut-bellied Sandgrouse (Dhammika 2015) which is absent in Java. Hooykaas (1958) identifies it as “turtle-dove” and Santoso (1980) identifies it as *Columba palumbus*. According to Acri (2014), “it is probably the outward appearance of these Saiva ascetics as well as their behavior that justified the poet’s choice of the *darapati* as their alias: the wood pigeon or ring dove, *Streptopelia risoria*, is ash-grey-colored, with

black collar around the neck". Acri's identification is probably right. However, in Java, this species usually is a reference to "puter". The most possible reference to this name is *Columba livia* (Gmelin 1789), the Common Pigeon of *Columbidae* (*Columbiformes*), which is named as "merpati" in Malay, "japati" in Sundanese, and "dara" in modern Javanese.

Daryas. This name is mentioned KR 24.122 and 25.65. OJED 375:11 identifies it as *Strix javanica*, protonym of *Tyto alba* (Scopoli 1769). One of its sub-species, *T.a. javanica* (Gmelin 1788), the Common Barn-owl of *Tytonidae* (*Strigiformes*), is resident in Java. This name probably also refers to *Phodilus badius badius* (Horsfield 1821), the Oriental Bay-owl, which is also resident in Java.

Dok. This name is mentioned in KR 24.122 and 25.67. OJED 412:5 identifies it as "crow". Koningsberger (1901) identifies "manoek dok" as *Polioaetus ichhyaetus*, protonym of *Ichthyophaga ichhyaetus* (Horsfield 1821), the Grey-headed Fish-eagle of *Accipitridae* (*Accipitriformes*), which is resident in western part of Java island.

Gagak. This name is mentioned in KR 21.167, 24.118, 25.33, and 25.67. In the text, this bird is described as a bird that has very dark feathers and associated with cemetery. OJED 473:6 and Santoso (1980) identifies it as "crow". There are, at least, five different species of *Corvidae* (*Passeriformes*) in Java, one of which is *Cissa thalassina* (Temminck 1826), the Javan Green Magpie, endemic to the western part of the island. Nowadays, the "gagak" name commonly refers to two species: *Corvus enca enca* (Horsfield 1821) and *Corvus macrorhynchos macrorhynchos* (Wagler 1827).

Garuda. This name is mentioned in KR. In Sanskrit literature, this name may refer to *Aquila chrysaetos*, the Golden Eagle, *Haliaeetus leucogaster*, the White-bellied Sea-eagle, or even *Aquila rapax* the Tawny Eagle" (Dave 2005). Only *Haliaeetus leucogaster* (Gmelin 1788) is resident in Java. Most likely, in Java, this name refers to *Nisaetus bartelsi* (Stresemann 1924) Javan Hawk-eagle of *Accipitridae* (*Accipitriformes*), which is endemic to Java island.

Gonggong. This name is mentioned in KR 25.66. In Sundanese and living Javanese vocabularies, "puyuh gonggong" refers to two *Arborophila* species (*Phasianidae*, *Galliformes*): *A. javanica* and *A. orientalis*, which are endemic to Java. Modern ornithologists identify three sub-species of *A. javanica*: (i). *A.j. javanica* (Gmelin 1789), which is endemic to West Java mountainous regions, (ii). *A.j. bartelsi* (Siebers 1929) of western mountainous region of western regions of Central Java, and *A.j. lawuana* (Bartels 1938) of the eastern mountainous regions of Central Java.

Halilingan. This name is mentioned in KR 24.110 and 25.33. Santoso (1980) identifies it as "big woodpecker". It is possible that the name refers to *Picidae* (*Piciformes*) with specific reference to *Dryocopus javensis javensis* (Horsfield 1821), the Javan Flameback, the biggest woodpecker found in Java. In the text, this bird is depicted as having deep voice.

Hangasa. This name is mentioned in KR 7.26, 24.104, and 25.24. Santoso (1980) identifies it as "a goose". This is

a Sanskrit name for "goose, gander, swan, flamingo" with *Cygnus olor* (Gmelin 1789) the Mute Swan of *Sulidae* (*SULiformes*) as its focal species (Dave 2005; Roy 2005; Panja 2012). The word "hangsa" also means "soul or spirit" which is typified by the pure white color of a goose or swan, and migratory like a goose". In the text (KR 7.26) this bird is labeled migratory bird, able to float on surface of lake while hunting for fish and like to splash the water.

Harawa. This name is mentioned once in KR 24.108. Zoetmulder (1981) identifies it as "wood-pigeon", whereas Juynboll (1902) refers it specifically to *Columba aenea*. Santoso (1980) identifies it as "dove". In another manuscript, the Nawaruci 31.24, this bird is characterized as living in trees and having harsh voice (Acri 2014). This species probably refers to *Ducula* of *Columbidae* (*Columbiformes*). There are three species of *Ducula* in Java island: (i). *D. aenea polia* (Oberholser 1917), the Green Imperial-pigeon, (ii). *D. lacernulata lacernulata* (Temminck 1822), and (iii). *Ducula lecernulata williamii* (EJO Hartert 1896), the Javanese Imperial-pigeon. Two other species of *Ducula* are resident in islands neighboring Java.

Hayan. This name is mentioned in KR 25.25. and 25.57. Santoso (1980) identifies it as "water-hen". In the text, this bird is said to live in waters in the forest edges. The name probably refers to *Amaurornis phoenicurus phoenicurus* (Pennant 1769), the White-breasted Waterhen of *Rallidae* (*Gruiformes*), which is resident in Java.

Helang. This name is mentioned in KR 24.118 and 25.30. OJED 611:4 identifies it as "a certain bird of prey (hwak, kite?). Santoso (1980) identifies it as "eagle". Most likely this name refers to *Accipitridae* (*Accipitriformes*). There are 18 different species of this family known in Java. Out of 18 *Accipitridae* species, 12 are resident in Java, 5 are winter visitors, and only one is endemic, the well-known *Nisaetus bartelsi* (Stresemann 1924), the Javan Hawk-eagle.

Hiji, Puhiji. This name is mentioned in KR 24.111, 24.113, and 25.14. Acri (2011) identifies it as "weaver-bird" with focal reference to KR 24.111. According to Acri (2011) this name is synonymous to "manyar" and "manuk uyakan". Moreover, the texts suggest the bird as an allusion of a builder (Acri 2011). These name possibly refers to *Ploceidae* (*Passeriformes*) whose focal species is *Ploceus manyar manyar* (Horsfield 1821), the Streaked Weaver, but also to two other *Ploceidae*, which are resident in Java island: *Ploceus hypoxanthus hypoxanthus* (Sparrman 1788), the Asian Golden Weaver, which is resident in western part of the island and *Ploceus philippinus infratunatus* (EJO Hartert 1902), the Oriental Bay Weaver, which is resident in all over Java.

Jalak. This name is mentioned in KR 11.2d, 24.111, 24.113, and 25.18. OJED 719:14 identifies it as "several varieties of a bird resembling the starling (pastor). GR identifies it with *Pastor griseus*, *Pastor djala*, *Sturnupotor jalla*. One variety can be taught to talk". Santoso (1980) identifies it as "starling". In the text, this bird is depicted as a pet and can be taught to sing (11.2d), intelligent and bright (24.111), and in the wild, they can be found in cultivated land (24.113). It probably refers to *Sturnidae*

(*Passeriformes*) with its focal species being *Acridotheres melanopterus* (Daudin 1800), the Black-winged Myna, which is endemic to Java. There are six different species of Sturnidae known in Java, five of which are resident and only one winter visitor.

Jangkung. This name is mentioned in KR 24.116, 25.58. Literally, in Kawi “ajangkung” means “tall and slender” (OJED 728:7.1) and so does in modern Sundanese. OJED 728:7 and Acri (2010; 2011) identifies it as “heron”. Santoso (1980) identifies it as “droopy heron” for the name in KR 24.116 and “tall heron” for KR 25.58 (Santoso 1980). Totton (2003) identifies it as *Leptoptilos javanicus*. This name possibly refers to *L. javanicus* (Horsfield 1821) the Lesser Adjutant of *Ciconiidae* (*Ciconiiformes*), which is resident in Java.

Jiwajiwaka. This name is mentioned in KR 11.57, 24.101, and 25.11. In the text, this bird is linked to Kinnara, a beautiful mythical creature, half-woman half-bird. Clearly, this word is from Sanskrit word “jīvajīvaka”, which is, in early Buddhist mythology, known for its auspicious tune and sign of a good omen. Santoso (1980) identifies it as pheasant and Panja (2012) as *Chalcurus sp.* [possibly *Ptilinopus chalcurus* the Makatea Fruit-dove]. In the text, this bird is described as having beautiful wings and tail and symbolizing piety. Dhammika (2015) identifies it as *Hydrophasianus chirurgus*, the Pheasant-tailed Jacana, which is winter visitor to Java. The other only Jacanidae resident in Java is *Metopidius indicus* (Latham 1790), the Bronze-winged Jacana (*Charadriiformes*).

Kadamba. This name is mentioned in KR 9.56b. OJED 761:11 and Dhammika (2015) identifies it as “a kind of goose with dark grey wings”. Probably this name refers to *Nettapus coromandelianus coromandelianus* (Gmelin 1789), the Cotton Pygmy Goose of *Anatidae* (*Anseriformes*), which is winter visitor to Java.

Kakatu. This name is mentioned in KR 24.110. OJED 766:19 and Santoso (1980) identifies it as “cockatoo”. In the text, the bird is characterized as a bird that “came with small step”. A similar name in modern language in Indonesian Archipelago is “kakatua” which refers to *Cacatuidae* (*Psittaciformes*). This family of birds is absent in Java island.

Kalahangsa. This name is mentioned in KR 2.8, 2.9, and 2.10. In Indian culture, this name refers to *Anser anser* (Panja 2012), the grey leg goose. In the text, this bird is depicted as a water-bird that can be found in lakes or ponds. If this is true, the bird may be of Sulidae family, *Sula sula rubripes* (Gould 1838), the Red-footed Booby, one of two *Sulidae* (*Suliformes*), which are vagrant to Java.

Kalangkyang. This name is mentioned in KR 24.118. OJED 773:4 identifies it as “a kind of bird of prey (hawk or buzzard)”. Santoso (1980) identifies it as “hawk”. In the text, the bird is characterized by its flying habit of circling in the sky, crying for rain; while another old Javanese manuscript frequently uses it to depict the longing of a lover for his beloved. Author of Sumanasantaka mentions the bird’s speed ability with which this bird flies away (Sum 28.18, 33.4, and 37.7). Additionally, it is said that the bird usually appears at the end of the fourth month when the rainy season starts in Java generally (Sum 28.18 and

177.5). This name, most probably refers to a species of *Falconidae* (*Falconiformes*), that is, *Falco peregrinus ernesti* (Sharpe 1894) the Peregrine, which is resident in Java island and known in local imagination as the fastest bird in the world.

Kelik. This name is mentioned in KR 25.22. OJED 843:4 identifies it as synonymous to “helang”. In the text, this bird is depicted as a bird of prey. This name seems to be onomatopoeia. This name may refer to *Microhierax fringillarius* (Drapiez 1824) the Black-thighed Falconet of *Falconidae* (*Falconiformes*) which makes sound like “klik..klik..klik” when it flies.

Kokila. This name is mentioned in KR 6.117 and 24.114. It is a Sanskrit name. This bird is identified by Roy (2005) as Indian Koel, by Panja (2012) as *Phaenicophaeus pyrrhocephalus* the Red-faced Malkoha, and by Dhammika (2015) as *Eudynamys scolopaceus*, the Asian Koel. All of them are members of Cuculidae. OJED 884:12 identifies it as “koil, black or Indian cuckoo”. In 24.114, the bird is described as “acting in accordance with its nature, namely always accommodating the ideas of others” or to mimic other birds’ voice. This probably refers to *Eudynamys scolopaceus* (Linnaeus 1758), the Western Koel of *Cuculidae* (*Cuculiformes*), whose sub-species, *E.s. malayanus* (Cabanis and Heine 1863) is resident in Java. In living Javanese, the term “kukila” means “all-singing birds”.

Kulirangan. This name is mentioned in KR 24.122. OJED 918:7 defines it as synonymous with *kutilang*. This name possibly refers to *Pycnonotus aurigaster aurigaster* (Vieillot 1818), the Southern Sooty-headed Bulbul of *Pycnonotidae* (*Passeriformes*), which is resident in Java.

Kuntul. This name is mentioned in KR 24.116 and 25.60. This bird is identified by Acri (2010; 2011) as “water-birds of the heron family”, by OJED 925:12 as *Ardea egretta*, by Santoso (1980) as “white heron”, and by Totton (2003) as *Egretta ardea*. In Malay ethno-ornithological vocabulary, the name “kuntul” refers to three different species: (i). *Kuntul Besar* (*Ardea alba*), (ii). *Kuntul Perak* (*Ardea intermedia*), and (iii). *Kuntul Kecil* (*Egretta garzetta*), which are all resident in Java. It is highly likely that this name refers to Genus *Ardea* of *Ardeidae* (*Pelecaniformes*), whose focal species is *Ardea alba modesta* (Gray 1831), the Eastern Great Egret, which is resident in Java and its feather is mostly white. In the text, this bird is described as hunting for freshwater fish, crayfish, and lobsters.

Kuwong. This name is mentioned in KR 9.56a and 24.111. Kern (1975) identifies it as “peacock”, while Juynboll (1902: 137) and Hooykaas (1958) name it “crow”, and still, Aichele (1969) identifies it as “cuckoo”. OJED put forward two possible candidate names for this bird: *Cuculus micropterus* and *Cuculus orientalis* based on its voice as it is described in the text. Moreover, the text explains that this bird is possibly terrestrial because it is said to be living in a hole in the ground. In addition, the text also mentions that this bird is a carnivore. According to Acri (2011), these characteristics are closer to coucal, which still belongs to the cuckoo family and he proposed two species candidates for this name: (i). *Centropus*

menbeki, the Greater Black-coucal and (ii). *Centropus nigrorufus*, the Javan Coucal. Both are terrestrial, predatory and opportunistic. Nonetheless, *C. menbeki* is not found in Java, and thus, the only candidate is *C. nigrorufus* (Cuvier 1816) of *Cuculidae* (*Cuculiformes*), which among Sundanese is known as “manuk kukuwong”.

Kuyaka. This name is mentioned in KR 24.112 and 24.114. Acri (2011) identifies it as “a kind of woodpecker”. Possibly, this name refers to *Picidae* (*Piciformes*), and probably to *Chrysocolaptes* the Flameback, whose two members are resident in Java island. Explicitly, the text says that the bird can sing.

Kwak. This name is mentioned in KR 25.70. OJED “a kind of bird (mal. Burong kuak, night-heron, *Nycticorax*)”. There is a common bird name in Malay and Javanese vocabularies similar to kwak, i.e., “kuak”, “kowak”, “kuwak”. In Malay (and Javanese as well) this name specifically refers to *Nycticorax nycticorax* of *Ardeidae* (*Pelecaniformes*), whose sub-species, *N.n. nycticorax* (Linnaeus 1758), the Black-crowned Night Heron, is resident in Java.

Lampipi. This name is mentioned in KR 25.56. OJED 972:4 identifies it as “aquatic bird”. The text also mentions that this bird as an aquatic-bird and can be found in lakes or lagoons. This name is no longer known in modern languages on the island of Java and its vicinity, but Esser (1929) identifies it as a bird name in Banyumas dialect of modern Javanese. Raffles (1827) and Latham (1824) identifies “lampipi” as *Pelecanus manillensis*, while Raffles (1930), Giebel (1877), and Balfour (1871) identify the bird as *Pelecanus onocrotalus*. The accepted name for *P. manillensis* is *P. philippensis*. However, this bird is not found in Java. This name possibly refers to *Pelecanidae* (*Pelecaniformes*) in general, whose two members, i.e., (i). *P. conspicillatus* (Temminck 1824), the Australasian Pelican and (ii). *P. onocrotalus* (Linnaeus 1758) the Great White Pelican, are visitors in Java.

Luklak. This name is mentioned in KR 24.109. In the text, this bird is depicted as a larva-eater. In Tagalog ethno-ornithological vocabulary, “luklak” refers to *Pycnonotus goiavier* (Gmelin 1789), the Yellow-vented Bulbul. This name probably refers to *Pycnonotidae* (*Passeriformes*) in general, whose eleven members are residents in Java and four are endemic.

Lung. This name is mentioned in KR 24.109. Implicitly, the text says that the size of this bird is small and its main behavioral characteristic is as snatcher from other birds. In Javanese ethno-ornithological vocabulary, a bird with this characteristic is *Cyornis*. It most probably refers to *Muscicapidae* (*Passeriformes*), especially from Genus *Cyornis*, whose members are residents in Java with their focal species being *Cyornis banyumas banyumas* (Horsfield 1821), the Javan Blue-flycatcher.

Maningting. This name is mentioned in KR 25.19 and 25.55. OJED 2018:1.2 identifies it as *Alcedo meninting*. The text describes this bird as a small birds foraging in shallow waters in forest edges. In Java, there are several names with similar sounds with this name: “maninting” (Sundanese), “tingting” (Javanese), and “tingting sunai” (Malay). It is highly possible that this name refers to

Alcedo of *Alcedinidae* (*Coraciiformes*), whose focal species is *Alcedo meninting meninting* (Horsfield 1821), the Blue-eared Kingfisher.

Manol. This name is mentioned in KR 25.64. OJED 1105:13 identifies it as “night-bird”, and groups it together with crows and owls. In KR 25.64 and its previous stanzas, however, this bird is depicted as small and gregarious, always in flock pecking at the eggs of lice in cow’s back. Although there are plenty of birds that have similar behavior, nonetheless, a close species of this bird is *Acridotheres javanicus* (Cabanis 1851), the Javan Myna of *Strunidae* (*Passeriformes*), which is resident in Java. But still, a closer examination needs to be done to know more about this bird.

Mayura. This name is mentioned in KR 9.56 and 25.95. In Sanskrit, “mayura” means “peacock” (Roy 2005: 27, Panja 2012: 112, Dhammika 2015: 148) which, in Indian context, refers to *Pavo cristatus*. OJED 1131:17 and Santoso (1980: 264, 700) identify it as “peacock”. The only Asian peacock species found on Java is *Pavo muticus muticus* (Linnaeus 1766), the Javan Green Peafowl (*Phasianidae*, *Galliformes*), which is resident.

Mrak. This name is mentioned in KR 7.25, 24.105, 24.260, and 25.24. This is an old Javanese synonym of “mayura”. Clearly, this name refers to *Pavo muticus muticus* (Linnaeus 1766), the Javan Green Peafowl (*Phasianidae*; *Galliformes*).

Nganga. This name is mentioned in KR 25.19. In Malay ethno-ornithological vocabulary, the name “nganga” refers to *Anastomus oscitans* (Boddaert 1783), the Asian Openbill of *Ciconidae* (*Ciconiformes*). Unfortunately, this bird cannot be found in Java. This could be one of *Ciconidae*.

Paranjangan. This name is mentioned in KR 25.20. OJED 1289:4 identifies it as “skylark”. In the text, this bird is depicted as “sitting in a row” together. In modern Javanese, the name of “branjangan” refers to *Mirafra javanica javanica* (Horsfield 1821) of *Alaudidae* (*Passeriformes*) the Australasian Bushlark, which is resident in Java.

Pejat-pejat. This name is mentioned in KR 25.61. In Sumanasantaka, the translator identifies it as a synonym of “cangkiling” which refers to *Aplonis panayensis*. In the text, this bird is characterized as a bird that is “busy feeding her chick, talks again and again to them as if she wanted them obediently follow her. In Candi Loro Jonggrang, there is a relief in Ramayana story panel in which this story is depicted. Judging from this relief, it is most likely that this name refers to *Sturnidae* (*Passeriformes*), whose focal species is *Aplonis panayensis strigata* (Horsfield 1821).

Pelung. This name is mentioned in KR 11.2b, 24.120, and 25.57. OJED 1339:1 identifies it as *Porphyrio indicus*. Santoso (1980) identifies it as “snipe”. In KR 11.2b, this bird is depicted clearly as a water-bird found in ponds with swans and ducks, whereas in 25.57 this bird is depicted as having “a long straight bill” used to catch a freshwater fish. It is highly possible that this name refers to *Porphyrio porphyrio indicus* (Horsfield 1821), the Sunda Swampphen of *Rallidae* (*Gruiformes*), which is resident in Java island.

Prukutut, Wurukutut. These names are mentioned in KR 9.56b and 24.110. OJED 1427:9 identifies it as *Tutur malaccensis* and Santoso (1980) as “turtle dove”. The name “perkutut” (Malay), “kutut” (Javanese), and “prukutut” (Sundanese) specifically refers to *Geopelia striata* (Linnaeus 1766), the Zebra Dove of *Columbidae* (*Columbiformes*).

Prenjak. This name is mentioned in KR 24.111 and 25.67. In KR 25.67, this bird is depicted as “having its nest in the reeds”. OJED 1420:5 identifies it as *Prinia familiaris*. Santoso (1980: 640) identifies it as “red-wren” and as “reed-warbler” (Santoso 1980). It possibly refers to *Cisticolidae* (*Passeriformes*) whose focal species is *Prinia familiaris* (Horsfield 1821), the Bard-winged Prinia, which is resident of Java.

Prit. This name is mentioned in KR 24.109, 24.110, 25.67, 25.69, 26.25. Santoso (1980) identifies it as “sparrow” and as “rice-bird” (Santoso 1980) and specifically Soepomo (1977) calls it “rice-bird”. In KR 25.67, this bird is identified to “have its nest in the reeds”. It is highly likely that this name refers to *Estrididae* (*Passeriformes*), whose focal species are *Lonchura oryzivora* (Linnaeus 1758), the Javan Sparrow and *Lonchura ferruginosa* (Sparrman 1788), the Pintailed Parrotfinch.

Pudang. This name is mentioned in KR 24.109 and 25.19. OJED 789:22 identifies it as *Oriolus maculatus*. In the text, this bird is described as a singing bird. This name possibly refers to three species of *Oriolidae* (*Passeriformes*) which are residents in Java with their focal species being *Oriolus cruentus* (Wagler 1827), the Javan Oriole.

Pukpuk. This name is mentioned in KR 24.109. OJED 1435:6 identifies it as *Bucco philippensis*, protonym of *Psilopogon haemacephalus*. In the text, moreover, this bird is described as insectivorous. Probably, this name refers to the family of *Megalaimidae* (*Piciformes*), whose seven species are resident in Java and three of which are endemic.

Puputer. This name is mentioned in KR 25.11. OJED 1456:1 identifies it as *Turtur risorius*. The KR 25.11 depicts that this bird always sings “in a monotonous trembling voice” (*puputër maküli kumëtër satata*). The name “puter” in modern Javanese and Sundanese refers specifically to *Streptopelia bitorquata* (Temminck 1809) of *Columbidae* (*Columbiformes*), the Sunda Collared-dove.

Puyuh. This name is mentioned in KR 11.2d, 24.111, 25.20, 26.20, 26.25. OJED 1468:1 identifies as *Turnix taigaor*. In the text, this bird is identified as terrestrial “sitting in a hole” and “bathing in the dust” (KR 24.111) and moreover its “tail is always full of dust” (KR 25.20). It is highly possible that this name refers to *Turnicidae* (*Charadriiformes*), whose two species are resident in Java: (i). *Turnix suscitator* (Gmelin 1789) the Barred Buttonquail and (ii). *Turnix sylvaticus bartesorum* (Neumann 1929), the Common Buttonquail. The Modern Malay and Sundanese call it “puyuh”.

Saluklik. This name is mentioned in KR 24.109. In Balinese, it is synonymous to “kekelik”, which refers specifically to *Spilornis cheela*. Highly probably, it is *Spilornis cheela bido* (Horsfield 1821), the Javan Crested

Serpent-eagle of *Accipitridae* (*Accipitriformes*), which is resident in Java.

Socaka. This name is mentioned in KR 25.62. Literally, “soca” means “eye” (OJED 1801:8) or “precious stone, gem” (OJED 1802:1). OJED 336:5 identifies it as *Turdus analis*, protonym for *Pycnonotus goiavier*, one of whose sub-species, *P.g. analis* (Horsfield 1821), the Sunda Yellow-vented Bulbul, is resident in Java.

Suluwug. This name is mentioned in 24.120 and 25.28. OJED 1848:1 and Santoso (1980) identify it only as “a kind of bird”. In modern Balinese, however, the name of “suluwug” refers to squirrel. So far we are unable to identify more about the species.

Swari. This name is mentioned in KR 9.56b, 25.62. Santoso (1980) identifies it as “cassowaries”. It possibly refers to *Casuariidae* (*Struthioniformes*), whose focal species is *Casuarius casuarius* (Linnaeus 1758), the Southern Cassowary, generally native to Papua and the Wallacea islands.

Syung. This name is mentioned in KR 9.56, 16.38, and 25.16. In the text, this bird is described as a “trained” bird and “talking to each other as if they were trained birds”. OJED 1891:3 identifies it as “beo, mynah”. Santoso (1980) identifies it as “starling” and “myna”. In the text, this bird is identified as a kind of bird that has ability to mimic human speech or can be trained to do so. It is highly likely that this name refers to *Gracula religiosa religiosa* (Linnaeus 1758), the Common Hill Myna, Family *Sturnidae* (*Passeriformes*), which is resident in Java.

Tambeng. This name is mentioned in KR 25.62. OJED 1918 and Santoso (1980) identify it only as “bird”. Literally, “tambeng” means “dam, dike, wall, partition (cf. tambak)” (OJED 1918). In previous stanzas in canto 25 where this bird is mentioned, especially stanza 56 to 61, many water-birds like herons, storks, or water hens are also mentioned. Unfortunately, we are unable to elaborate more on this bird.

Tiligiran. This name is mentioned in KR 25.63. OJED 2010 and Santoso (1980) identify it only as “bird”. In the text, this bird is portrayed as “pecking at the eggs of lice, so the cow moves slightly”. Most probably this name refers to *Bubulcus ibis coromandus* (Boddaert 1783), the Eastern Cattle Egret of *Ardeidae* (*Pelecaniformes*), which is resident in Java.

Tilil. This name is mentioned in KR 24.121 and 25.33. OJED 2010 identifies it as *Titanus affinis*. Santoso (1980) identifies it as “beech-master bird”. In the text, this bird is described as being found and going around with wild-duck (24.121) and “live only on plants” (25.33). This name probably refers to *Charadriidae* (*Charadriiformes*) whose focal species is *Charadrius javanicus* (Chasen 1938), the Javan Plover, the only *Charadrius* which is resident in Java.

Tingkik-tingkik. This name is mentioned in KR 24.110. OJED (2017) identifies it as a synonym of “tetengkek”. It may refer to *Eurystomus orientalis orientalis* (Linnaeus 1766), the Oriental Dollarbird of *Meropidae* (*Coraciiformes*) which is found in Java as winter visitor.

Tomtoman. This name is mentioned in KR 25.66. In Malay ethno-ornithological vocabulary, the name “burong tomtoman” specifically refers to *Ixobrychus flavicollis* the Black Bittern of *Ardeidae* (*Pelecaniformes*). This name could refer to one of its sub-species, which is resident in Java: *I.f. flavicollis* (Latham 1790).

Trik. This name is mentioned in KR 24.121 and 25.29. Dutch zoologist J.C. Koningsberger (1901) identifies Javanese name “*manoek trik*” as *Merops philippinus*. Probably, this name refers to *Meropidae* the Bee-eaters of *Coraciiformes*. There are two species of this bird family that are resident in Java: (i). *Merops leschenaulti quinticolor* (Vieillot 1817), the Chesnut-headed Bee-eater, and (ii). *Merops viridis* (Linnaeus 1758), the Blue-throated Bee-eater.

Tuhu-tuhu. This name is mentioned in KR 25.18. OJED 2049:1 and Santoso (1980) identify it as “black cuckoo”. It may refer to *Campephagidae* (*Passeriformes*), with its focal species being *Coracina javensis javensis* (Horsfield 1821) the Javan Cuckooshrike, which is endemic to Java.

Uyakan. This name is mentioned in KR 24.112, 24.114, and 24.115. In the text, this bird is said to have ability to sing and naturally lives in forest, and is usually used as a decoy bird. In another manuscript, Tantri Kamandaka (Hooykaas 1931), it appears that it is a synonym of ‘manyar’, the weaver-bird. Highly probably, this name refers to *Ploceidae* with its focal species being *Ploceus manyar manyar* (Horsfield 1821), the Streaked Weaver, which is resident in Java.

Wala. This name is mentioned in KR 11.2b. This name is a Sanskrit name for “crow” (OJED 2177:2). Most likely this name refers to *Corvidae* (*Passeriformes*), whose two terminal species are residents in Java (see *Gagak*).

Walatuk. This name is mentioned in KR 24.119 and 25.11. OJED 2180:7 and Santoso (1980: 642, 678) identify it as “woodpecker”. In the text, this bird is depicted as “pecking the hardwood”. Most probably it refers to *Picidae* (*Piciformes*). There are sixteen resident species of *Picidae* in Java.

Walik. This name is mentioned in KR 25.19. Zoetmulder (1974: 200) identifies it as *Eudynamis scolopaceus*. OJED identifies it as “a kind of bird (prob. night bird of the cuckoo family; female of the tuhu)”. One of Western Koel sub-species, *E.s. malayanus* (Cabanis & Heine, 1863) of *Cuculidae* (*Cuculiformes*), is resident in Java. In modern Javanese and Sundanese vocabulary, however, the name “walik” refers to *Ptilinopus* the Fruit-dove of *Columbidae* (*Columbiformes*).

Waliwis. This name is mentioned in KR 24.120. Santoso (1980: 643) identifies it as “wild duck”. OJED 2185:10 identifies it as *Anas casarca* a synonym for *Tadorna ferruginea* (Pallas, 1764). Unfortunately, this bird is not found in Java. In the text, this bird is depicted as a water-bird from *Anatidae* family (*Anseriformes*). Of eight *Anatidae* found in Java, four are residents, i.e., (i). *Anas gibberifrons*, (ii). *A. superciliosa*, (iii). *Dendrocygna arcuata arcuata*, and (iv). *D. javanica*.

Wanakurkuta. This name is mentioned in KR 26.25b. In Sanskrit, “*kukuta*” refers to *Galloperdix spadicea*, the

Red Spurfowl (Panja 2012) or *Gallus gallus* the Red Junglefowl (Dave 2005; Dhammika 2015); both are member of *Phasianidae* (*Galliformes*). OJED identifies it as *Gallus gallus bankiva*. Literally, “wana” means “wood”. Possibly, this name refers to *Gallus gallus bankiva* (Temminck 1813), the Javan Red Jungle fowl, which is resident in Java, especially in its central and eastern parts of the island.

Wela. This name is mentioned in KR 24.117. Acri (2010: 481) identifies it as a synonym for HAYAN (see above). In the text, this bird is depicted as “eating the blenny” and “very fond of it”. Clearly, this bird is a water-bird: *Amaurornis phoenicurus phoenicurus* (Pennant, 1769), the White-breasted Waterhen of *Rallidae* (*Gruiformes*), which is resident in Java.

Weluwok. This name is mentioned in KR 24.106. OJED 2242:6 identifies it as a synonym for “balekok”. In modern Javanese, the name “bluwok” refers to *Mycteria cinerea* (Raffles 1822), the Milky Stork of *Ciconiidae* (*Ciconiiformes*), which is resident in Java.

Widu. This name (in form “manuk widu”) is mentioned in KR 25.21. Literally, “widu” means “singer”. Acri (2010; 2011) identifies it as a synonym of *kuwong*, which is identified as black coucal (see above).

Wihaga. This name is mentioned in KR 25.62. Santoso (1980) identifies it as “owl”. In Sanskrit, “wihaga” means “sky-goer” but in Old Javanese, it means “portent, omen, sign” (OJED 2267:4.2). Probably, Santoso’s identification was based on cultural imagination of owl as a bad omen or portent in the Old Javanese society. For the Javanese, the sound of owls evokes a sense of mournfulness which is distinctly emphasized in Old Javanese literature. From this information, Totton (2003) identifies a bird with this characteristic as *Ketupa ketupu*. It most probably refers to *Ketupa ketupu ketupu* (Horsfield 1821), the Buffy Fish-owl of *Strigidae* (*Strigiformes*). which is resident species in Java.

Wuru-wuru. This name is mentioned in 9.56 and 26.25. OJED 2335:1, Goris (1954) and Santoso (1980) identify it as “wild pigeon”. Acri (2014) argues that it is a “common name of the pigeon”. This could possibly refer to *Caloenas*, *Ducula*, and *Treron* from *Columbidae* (*Columbiformes*). In KR 9.56 this bird is depicted explicitly as living in trees and eating fruit.

In the Old Javanese poem in Kakawin Rāmāyana (KR), at least 84 bird names are mentioned, and we could identify 82 of which to species level using scientific names. Furthermore, from the KR it can be interpreted that all of these bird species existed in the ecosystem at that time and had inspired the writer to write cultural poems. This is in line with the opinion of Suropto and Pranowo (2001) that the picture of birds at a relief on the walls of the Borobudur temple can be interpreted that the presence of bird species in the Java ecosystem had become a source of inspiration for the artists to paint on the walls of the temple of Borobudur, Central Java. In addition, various species of birds, such as the *perkutut*/Zebra dove (*Geopelia striata*), have become a central theme in the ancient story of the ‘Ngalamanting Kutut’, narrating that *perkutut* is a sacred and mythical animal in Javanese culture. This is because of

the influence of the legendary Joko Mangu. The legend tells about the zebra dove bird belonging to Prabu Brawijaya V which is the incarnation of Prince Pajajaran, named Joko Mangu. One day the Zebra dove escaped from the cage, but was found by the king on his way to Yogyakarta. Since that time until now the kings of Mataram descendants of King Brawijaya always maintain the tradition of raising the Zebra dove bird. Since then, the Javanese tradition of raising Zebra dove birds has been followed by the Javanese people because it is considered to have valuable cultural values. In addition, the Javanese people believe that the zebra dove bird has power that can influence its owner, so myths arise relating to this bird (Anggraini 2017). Not only that, but the types of birds in Javanese culture have also become an inspiration, so pictures of birds are found in an illustrated manuscript containing calendrical divination based on the Javanese 30 seven-day time cycle which is contained in the manuscript pawukon (Van der Mij 2009). Therefore, since a long time ago, birds have played an important role in Javanese culture, including as a source of folklore, painting materials, and compilation of poems.

It can be concluded that 84 bird names have been found in KR, 82 of which have been identified in scientific names. Of the 82 names, only 57 specifically refer to species or sub-species. Of the 84 names, only 13 names are Sanskrit in origin. From methodological point of view, our linguistic analysis must be supported by direct observation of the birds' shape and size in question. One way is to observe reliefs that depict birds in the same or similar stories combined with scientific identification of birds' names in local community languages that are related to Old Javanese such as Balinese, Malay, Sundanese, and Javanese.

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