

LITTLE-KNOWN AREA

The avifauna of the Mekongga Mountains, Southeast Sulawesi, Indonesia, and notes on a vocally distinct *Locustella* grasshopper warbler

ALEX J. BERRYMAN & JAMES A. EATON

Introduction

Sulawesi, the largest island in Wallacea, is one of the most biogeographically complex islands on earth. Its odd shape, comprising four ‘arms’, is the result of colliding landmasses of Sundaic, Australo-Papuan and Pacific origin. While Sulawesi holds a large number of island-wide endemics, each peninsula also holds endemic taxa, the significance of which taxonomists are still exploring with increasing use of bioacoustics and genetics.

Together with several large offshore islands, the south-eastern peninsula is part of Southeast Sulawesi province and shares the majority of its avifauna with central Sulawesi. Although Southeast Sulawesi is already known to hold five endemic subspecies and one endemic species, the Kendari White-eye *Zosterops consobrinorum* (Eaton *et al.* 2016), it is among the least ornithologically explored parts of the island. The most interesting feature of the peninsula from a topographic and biogeographic perspective is the Mekongga (Mengkokka) mountain range that lies on its western flank, reaching 2,800 m at its highest point. Ornithologically, this area is only known as a result of the exceptional collecting efforts of Gerd Heinrich, who visited the central Mekongga range in December 1931–January 1932 as part of his wider explorations of Sulawesi between 1930 and 1932 (Collar 2009), primarily in search of the Snoring Rail *Lewinia plateni*, then known only from a single specimen collected 40 years earlier. In the Mekongga range Heinrich first visited Tanke Salokko, where he collected a large number of specimens (Heinrich 1932, Stresemann & Heinrich 1939–1941), among them the type specimens of Great Shortwing (*Heinrichia*) *Heinrichia calligyna picta*, Sulawesi Thrush *Cataponera turdoides heinrichi*, Greater Myza *Myza sarasinorum pholidota*, Sulawesi Heleia *Heleia squamiceps analoga* and Scaly Kingfisher *Actenoides princeps regalis* (alternatively Plain-backed Kingfisher *A. regalis*). He subsequently spent several days in the foothills, near Wawo, where he finally collected his much-desired Snoring Rail.

As a direct result of Heinrich’s observations, BirdLife International recognised the area as an Important Bird Area (ID178) due to the presence

of the Snoring Rail (BirdLife International 2020). However, despite faunistic surveys taking place in the region, with new species descriptions of reptiles (Riyanto *et al.* 2016), mammals (Mortelliti *et al.* 2012) and insects (Kimsey & Ohl 2012) following expeditions to the Mekongga range by the International Cooperative Biodiversity Group between 2009 and 2011, nothing has been published on the birds of the region since the Second World War.

JAE visited the Mekongga range in December 2018 and AJB in January 2020, and in this article

All images except for Plate 7 were taken in the Mekongga mountains, Southeast Sulawesi, Indonesia, in December 2018 or January 2020.

Plate 1. Habitat along a former logging track, now used for hunting, 17 December 2018.





Plate 2. General habitat shot showing huge tracts of untouched forest, 18 December 2018.

we report our combined findings from a total of eight days spent in the region, including a number of altitudinal range extensions and breeding records, and notes of a *Locustella* grasshopper warbler potentially worthy of taxonomic recognition. Taxonomy and nomenclature principally follow Eaton *et al.* (2016), although the Mountain White-eye *Zosterops montanus* therein is here included as a race of the Warbling White-eye *Z. japonicus*, following a recent taxonomic review (Lim *et al.* 2019).

JAE and AJB both visited the same part of the northern end of the Mekongga range from the small town of Batu Putih (3.075°S 121.094°E), about 125 km north of Kolaka and 35 km south of the Southeast Sulawesi–South Sulawesi border. From there the mountain range was accessible by an old 10 m-wide logging track (now used for hunting) (Plate 1) that follows a ridge to the south-east; partially logged forest began at about 1,200 m, and the habitat gradually improved with increasing altitude. The track continued to about 1,890 m, after which the vegetation became too dense to penetrate and the hunters' track hard to follow. The commercial logging operations ceased about 20 years ago, leaving huge tracts of untouched forest immediately below both sides of the ridge awaiting exploration (Plate 2). JAE camped at two different points along the track, at 1,660 and 1,850 m, between 17–20 December 2018; AJB spent three full days (two nights) camping at 1,660 m, from 14–16 January 2020. Track-side forest was limited due to the track following a ridge, thus the majority of species observed were those tolerant of forest disturbance and/or those prepared to cross the 10 m-wide logged area. In addition, between 05h10 and 11h00 on 17 January 2020, AJB explored

an area of foothill forest near Tolala, approximately 12 km north of Batu Putih (2.975°S 121.085°E). This forest lay mostly between 100–200 m, with minor logging tracks descending to sea-level still used by the local population today.

Our combined visits recorded 91 species (Appendix 1), 15 of which were only recorded in the lowlands near Tolala. Hornbills were conspicuous by their absence, with small numbers of Knobbed Hornbill *Rhyticeros cassidix* seen at lower altitudes in 2018 only, suggesting local hunting pressure, which was confirmed by speaking to villagers using the track. This is further evidenced by the shyness of all the pigeons, which are commonly hunted, as is the Mountain Anoa *Bubalus quarlesi*, a miniature water buffalo, the horns of which were noted in one household. Heinrich collected a number of species that we did not see, most notably Sulawesi Ground Dove *Gallicolumba tristigmata*, *Geomalia Zoothera heinrichi*, *Heinrichia* and Scaly Kingfisher. It was no surprise that we failed to find these species, due to the inability to access the forest interior. Both *Heinrichia picta* and Scaly Kingfisher *regalis* are of continuing taxonomic interest (Eaton *et al.* 2016). The latter taxon has not been seen since its collection nearly 90 years ago, but is regarded as a species, Plain-backed Kingfisher, by BirdLife International (del Hoyo & Collar 2014). The Mekongga range continues to offer good opportunities for birdwatchers and ornithologists to explore away from the usual routes. The track we used is a popular hike for Indonesian trekkers to the summit of Mekongga, with camping sites en route. Our route was very easy to access and, given a bit more time, other tracks into the forest could be found.

Selected species accounts

White-throated Needletail *Hirundapus caudacutus nudipes*

Flocks of 12 and 9 on 18 and 19 December 2018 respectively, a flock of about 8 briefly over the campsite on 15 January 2020, and a group of about 20 feeding in the late morning of the following day preceded a much larger gathering of about 150 in the early morning of 17 January feeding above the limestone outcrops near Tolala. All sightings were of the subspecies *nudipes*, identified by blackish forehead and lores and slightly reduced white throat. Where this race winters is poorly known, with few sightings between November and February. It is a passage migrant between September and December in Thailand, with a single mid-winter record in the east (Treesucon & Limparungpattanakij 2018), and was seen by JAE over the Dalat Plateau in South Vietnam in March 2015 and April 2018. In Indonesia, it is only known from two specimens collected in West Java in November 1922 (Eaton *et al.* 2016). Our sightings indicate that the Mekongga mountains may be a hitherto unknown wintering area for this subspecies.

Small Sparrowhawk *Tachyspiza nana*

An immature photographed at 1,750 m on 19 December 2018 (Plates 3 & 4) was the first evidenced observation of the Small Sparrowhawk on mainland

Southeast Sulawesi since Heinrich collected a pair from Mekongga (Stresemann 1932), under the name *Accipiter archboldi*. The images show a moulting individual with a mixture of immature and adult feathers, which was distinguished from the similar Vinous-breasted Sparrowhawk *T. rhodogastra* by its unmarked rufous scapulars and wing-coverts; in addition, the bird appeared very small. Spotted-tailed Sparrowhawk *T. trinotata* would show a dark iris and have conspicuous white tail-spots. The migrant Chinese and Japanese Sparrowhawks, *T. soloensis* and *T. gularis* respectively, would not show such rich rufous upperparts and clear-cut breast streaking. (Note that a previous record of Small Sparrowhawk from Southeast Sulawesi was in fact a Sulawesi Goshawk *Lophospiza griseiceps* [Martin *et al.* 2018, Eaton 2018]).

Cinnabar Boobook *Ninox ios*

Uncertainty has surrounded this species, first described by Rasmussen (1999) from a specimen trapped on the Minahasa peninsula, Northern Sulawesi province. Subsequently, birds were also found at locations in Central Sulawesi province, but with evidence of weak bioacoustical differences (Eaton *et al.* 2016) and plumage variations evidenced by photographic images, leading Madika *et al.* (2011) to suggest that this taxon from Central Sulawesi province might warrant species status.

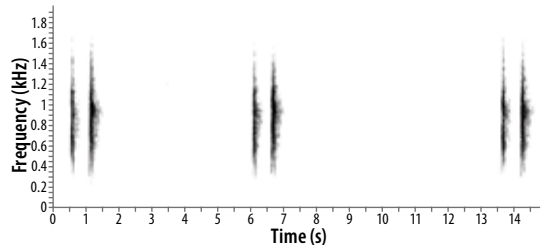
Both JAE and AJB saw and heard birds in the Mekongga range between 1,500 and 1,800 m, all

Plates 3 & 4. Small Sparrowhawk *Tachyspiza nana*, 19 December 2018.





JAMES A. EATON

Plate 5. Cinnabar Boobook *Ninox ios*, 19 December 2018.Figure 1. Sonogram of Cinnabar Boobook *Ninox ios* from northern Mekongga mountains, Southeast Sulawesi, Indonesia.

of which had white belly markings (Plate 5), similar to the taxon from Central Sulawesi (Madika *et al.* 2011). However, it should be noted that birds from the Minahasa peninsula have also been found showing similar belly markings (<https://ebird.org/checklist/S51037229>). Sound recordings that we obtained on site show that birds from the Mekongga range (Figure 1) sound very similar to birds from the Minahasa peninsula. Our observations are the first published records of Cinnabar Boobook from Southeast Sulawesi province.

Purple-bearded Bee-eater *Meropogon forsteni*

Six occupied nests were found, four in December 2018 (Plate 6) and two in January 2020. All were located in track-side embankments, with the pairs conspicuous as they were busily feeding young. Most

Plate 6. Purple-bearded Bee-eater *Meropogon forsteni*, 17 December 2018.

JAMES A. EATON

previous breeding accounts refer to March–October (Meyer & Wigglesworth 1898, Riley 1925), with just one from December (Klapste 1982), in southern Central Sulawesi. The later nesting in the Mekongga range is presumably due to climatic factors—the monsoon season begins considerably later in Southeast Sulawesi than elsewhere on the island.

Greater Myza *Myza sarasinorum*

A single individual of the poorly-known taxon *pholidota*, endemic to south-east Sulawesi, was observed in January 2020 at 1,500 m, 200 m lower than the 1,700 to 2,800 m altitudinal range given in Eaton *et al.* (2016). The sole congener of this species, the Lesser Myza *M. celebensis*, typically replaces it at lower altitudes and was seen to at least 1,700 m.

Kendari White-eye *Zosterops consobrinorum*

Reported in Eaton *et al.* (2016) to occur only up to 300 m; we both observed birds to be quite common up to 1,400 m, a very significant extension to the altitudinal range (Plate 7). As already noted, this species is replaced by Warbling White-eye at higher altitudes; the latter was seen at 1,600 m and above.

Additional new data

Range extensions and breeding records of interest are given in Table 1 below.

Grasshopper warbler *Locustella sp.*

Our most exciting discovery was on 17 December 2018 when JAE first heard the unmistakable, insect-like noise of a *Locustella* grasshopper warbler at 1,450 m; the song was clearly different from the expected song of Sulawesi Grasshopper Warbler *L.*



JAMES A. EATON

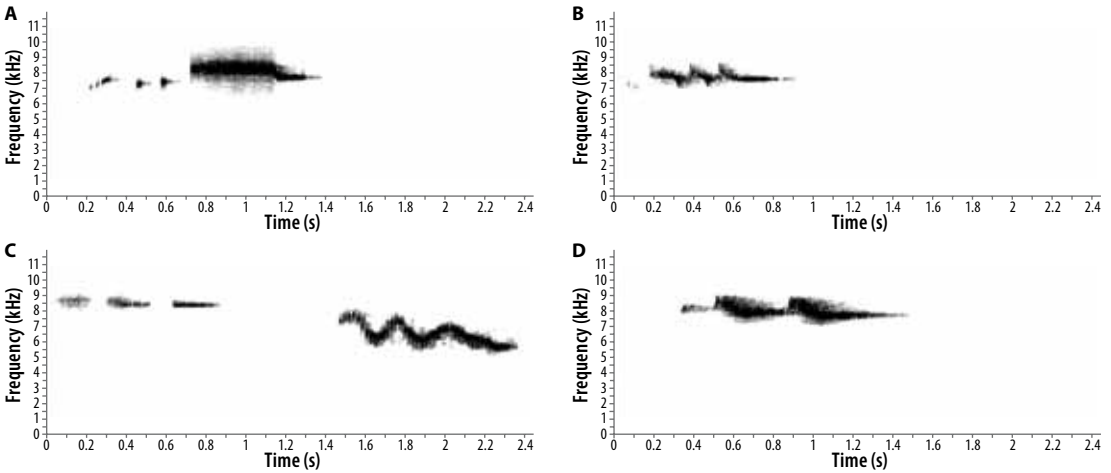
Plate 7. Kendari White-eye *Zosterops consobrinorum*, edge of the Mekongga range, 1 January 2015.

castanea. It was found to be common above 1,450 m in track-side thickets and dense undergrowth by both JAE and AJB. Heinrich collected four *Locustella* specimens from the Mekongga range (1,500–2,000 m), although Stresemann & Heinrich (1939–41) reported that these were undiagnosable when compared with specimens of *castanea* from elsewhere and did not name them. The Sulawesi Grasshopper Warbler is known to occur on all main mountain ranges on Sulawesi, and is comprised of nominate *castanea* (most of range) and *everetti* (Lompobattang massif in south-west Sulawesi). However, we observed striking differences in the vocalisations of birds in the Mekongga range (Figure 2) compared with other locations on Sulawesi (Figure 2B–2D), and these differences exceed those of other *Locustella* taxa recognised as species (Eaton *et al.* 2016). We made recordings

Table 1. Data of interest on other species in the Mekongga mountains, December 2018 and January 2020.

Species	Altitude data in Eaton <i>et al.</i> (2016)	New data from our visits	Notes
White-bellied Imperial Pigeon <i>Ducula forsteni</i>	Above 150 m	Sea level near Tolala	Common in the mountains, although shy.
Sulawesi (Purple-winged) Roller <i>Coracias temminckii</i>	Up to 1,200 m	1,400 m	Nest found at 1,300 m in January 2020, a hole about 15 m up in a dead stunted tree, appeared to be active, probably with dependent young.
Sulawesi Hanging Parrot <i>Loriculus stigmatus</i>	Below 1,000 m	1,600 m	Quite common up to 1,600 m; nest found at 1,520 m in January 2020.
Pygmy Hanging Parrot <i>Loriculus exilis</i>	Below 1,000 m	1,320 m	Pair seen (and image obtained) in December 2018.
White-rumped Cuckooshrike <i>Coracina leucopygia</i>	1,100 m	1,400 m	Feeding flock of 6 birds seen at 1,400 m in January 2020.
White-eyed Spangled Drongo <i>Dicrurus leucops</i>	Below 1,500 m	1,830 m	Seen once in January 2020 in mixed-species flock at 1,830 m; often seen at 1,700 m.
Pale Blue Monarch <i>Hypothymis puella</i>	Up to 1,500 m	1,650 m	Quite common up to 1,650 m during both visits.

Figure 2. Sonograms of *Locustella* grasshopper warblers from different regions of Sulawesi: (A) northern Mekongga mountains, Southeast Sulawesi province [AJB]; (B) Gunung Ambang, North Sulawesi province [F. Lambert: xeno-canto.org XC89373]; (C) Lore Lindu, Central Sulawesi province [M. Nelson]; (D) Lompobattang, South Sulawesi province [F. Lambert: XC89605].



of 16 individuals, thus confirming that it was not just an odd individual, and did not hear a song resembling birds from elsewhere on Sulawesi. The song was characterised by stereotypic strophes, spaced by 2.5–2.9 seconds, repeated for up to several minutes at a time, mostly at dawn and dusk. Each strophe began with a rapid three-note *ze-ze-ze* (about 0.3 sec) at about 7.4–7.7 kHz, followed by the main, most audible part of the strophe, a loud, metallic,

cicada-like buzz (total 0.59–0.65 sec), initially at about 8.5–8.8 kHz, lowering distinctly to 7.7–7.9 kHz towards its end. JAE eventually obtained excellent views of one individual (Plate 8), but no discernible difference from *castenea* was noted. However, the cryptic plumages of Wallacean *Locustella* have, for decades, resulted in an overly conservative taxonomic arrangement which bioacoustic and molecular data are only just beginning to unravel

Plate 8. Grasshopper warbler *Locustella* sp., 19 December 2018.





ALEX J. BERRYMAN

Plate 9. Flame-browed Myna *Enodes erythropris centralis*, 16 January 2020.

(Eaton *et al.* 2016, Rheindt *et al.* 2020). It seems probable that the birds that we discovered here do warrant taxonomic recognition, and a re-evaluation of the specimens collected from the region is required, along with a comprehensive review of all Sulawesi *Locustella*. It is likely that several potentially species-level taxa are involved.

Mammals

Booted Macaque *Macaca ochreata*

Seen in 2018 and 2020 to at least 1,500 m, this primate, designated as Vulnerable, was evidently quite common.

Sulawesi Warty Pig *Sus celebensis*

Two groups totalling over 20 individuals seen in December 2018 (Plate 11), with signs of the species all the way along the track indicating a healthy population of this rarely-encountered species.

Tarsier species *Tarsius* sp.

A tarsier sp. was quite frequently heard above 1,100 m, at dusk and dawn, being seen in December 2018 and found roosting 10 m up in a *Pandanus* palm sp.. Recordings are available upon request. The taxonomy of tarsiers from Sulawesi has long been confused (Groves & Shekelle 2010), and

Plate 10. Sulawesi Heleia *Heleia squamiceps analoga*, the first image of this race, 18 December 2018.



JAMES A. EATON



JAMES A. EATON

Plate 11. Sulawesi Warty Pig *Sus celebensis*, 17 December 2018.

animals in the Mekongga range may be an undescribed species; vocal analysis is needed.

Acknowledgements

We thank Bas van Balen for his help in accessing the appropriate literature, and Frank E. Rheindt and Carlos Bocos for discussions regarding the avian taxa of the area. Thanks to Mike Nelson and Frank Lambert for their *Locustella* sound recordings.

References

- BirdLife International (2020) Important Bird Areas factsheet: Mekongga. Accessed at <http://www.birdlife.org> on 21/04/2020.
- Collar, N. J. (2009) Pioneer of Asian ornithology: Gerd Heinrich. *BirdingASIA* 11: 33–40.
- Eaton, J. A. (2018) Letter to the Editors: A new record of Dwarf Sparrowhawk *Accipiter nanus* in south-east Sulawesi, Indonesia. *BirdingASIA* 30: 9–10.
- Eaton, J. A., van Balen, B., Brickle, N. W. & Rheindt, F. E. (2016) *Birds of the Indonesian Archipelago: Greater Sundas and Wallacea*. Barcelona: Lynx Edicions.
- Groves, C. & Shekelle, M. (2010) The genera and species of Tarsiidae. *Int. J. Primatology* 31(6): 1071–1082.
- Heinrich, G. (1932) *Der Vogel Schnarch: zwei Jahre Rallenfang und Urwaldforschung in Celebes*. Berlin: D. Reimer.
- del Hoyo, J. & Collar, N. J. (2014) *HBW and BirdLife International illustrated checklist of the birds of the world, 1: Non-passerines*. Barcelona & Cambridge UK: Lynx Edicions & BirdLife International.
- Kimsey, L. & Ohl, M. (2012) *Megalara garuda*, a new genus and species of larrine wasps from Indonesia (Larrinae, Crabronidae, Hymenoptera). *ZooKeys* 177: 49–57.
- Klapste, J. (1982) Notes on the Celebes Bee-eater *Meropogon forsteni*. *Australian Bird Watcher* 9(8): 252–259.
- Lim B. T. M., Sadanandan, K. R., Dingle, C., Leung, Y. Y., Prawiradilaga, D. M., Irham, M., Ashari, H., Lee, J. G. H. & Rheindt, F. E. (2019) Molecular evidence suggests radical revision of species limits in the great speciator white-eye genus *Zosterops*. *J. Orn.* 160: 1–16.
- Madika, B., Putra, D. D., Harris, J. B. C., Yong D. L., Mallo, F. N., Rahman, A., Prawiradilaga, D. M. & Rasmussen, P. C. (2011) An undescribed *Ninox* hawk owl from the highlands of Central Sulawesi, Indonesia. *Bull. Brit. Orn. Club* 131: 94–102.
- Martin, T. E., O'Connell, D. P., Kelly, D. J., Karya, A., Analuddin, K. & Marples, N. M. (2018) A new record of Dwarf Sparrowhawk *Accipiter nanus* in South-east Sulawesi, Indonesia: is it only restricted to upland forests? *BirdingASIA* 29: 103–104.
- Meyer, A. B. & Wieglesworth, L. W. (1898) *The birds of Celebes and the neighbouring islands*. Berlin: R. Friedlander und Sohn.
- Mortelliti, A., Castiglia, R., Amori, G., Maryanto, I. & Musser, G. (2012) A new species of *Margaretamys* (Rodentia: Muridae: Murinae: Rattini) from Pegunungan Mekongga, southeastern Sulawesi, Indonesia. *Trop. Zool.* 25(2): 74–107.
- Rasmussen, P. C. (1999) A new species of hawk-owl *Ninox* from North Sulawesi, Indonesia. *Wilson Bull.* 111: 457–464.
- Rheindt, F. E., Prawiradilaga, D. M., Ashari, H., Suparno, Gwee C. Y., Lee G. W. X., Wu M. Y. & Ng N. S. R. (2020) A lost world in Wallacea: description of a montane archipelagic avifauna. *Science* 367, 6474: 167–170.
- Riley, J. H. (1925) A collection of birds from North and North-Central Celebes. *Proc. U.S. Nat. Mus.* 64(16): 1–118.
- Riyanto, A., Kurniati, H. & Engilis Jr, A. (2016) A new Bent-toed Gecko (Squamata: Gekkonidae) from the Mekongga Mountains, South East Sulawesi, Indonesia. *Zootaxa* 4109(1): 059–072.
- Stresemann, E. (1932) Vorläufiges über die ornithologischen Ergebnisse der Expedition Heinrich 1930–1932. *Orn. Monatsber.* 40: 104–115.
- Stresemann, E. & Heinrich, G. (1939–1941) Die Vögel von Celebes. *J. Orn.* 87: 299–425; 88: 1–135, 389–487; 89: 1–102.
- Treesucon, U. & Limparungpattanakij, W. (2018) *Birds of Thailand*. Barcelona: Lynx Edicions.

Alex J. BERRYMAN

Norfolk, UK

Email: AJB.birding@aol.co.uk

James A. EATON

Petaling Jaya, Malaysia

Email: james.birdtourasia@gmail.com

Appendix 1.

Species and subspecies seen during visits to the north Mekongga mountains in December 2018 (JAE) and January 2020 (AJB). Species seen only in the lowland forests near Tolala are marked with an asterisk (*).

Sulawesi Cuckoo Dove <i>Macropygia albicapilla albicapilla</i>	Lesser Myza <i>Myza celebensis celebensis</i>
Grey-cheeked Green Pigeon <i>Treron griseicauda wallacei</i> *	Greater Myza <i>Myza sarasinorum pholidota</i>
Pacific Emerald Dove <i>Chalcophaps longirostris</i> *	Golden-bellied Gerygone <i>Gerygone sulphurea flaveola</i>
Red-eared Fruit Dove <i>Ptilinopus fischeri centralis</i>	Black-naped Oriole <i>Oriolus chinensis celebensis</i> *
Superb Fruit Dove <i>Ptilinopus superbus</i> *	Maroon-backed Whistler <i>Coracornis raveni</i>
Black-naped Fruit Dove <i>Ptilinopus melanospilus melanospilus</i>	Sulphur-bellied Whistler <i>Pachycephala sulfuriventer sulfuriventer</i>
Sombre Pigeon <i>Cryptophaps poecilorrhoea</i>	White-breasted Woodswallow <i>Artamus leucorhynchus albiventer</i>
White-bellied Imperial Pigeon <i>Ducula forsteri</i>	Ivory-backed Woodswallow <i>Artamus monachus</i>
Grey-headed Imperial Pigeon <i>Ducula radiata</i>	White-rumped Cuckooshrike <i>Coracina leucopygia</i>
Green Imperial Pigeon <i>Ducula aenea paulina</i> *	Cerulean Cuckooshrike <i>Coracina temminckii rileyi</i>
Sulawesi Malkoha <i>Rhamphococcyx calyhorhynchus</i>	Mountain Cicadabird <i>Lalage abbotti</i>
Drongo Cuckoo <i>Surniculus lugubris musschenbroeki</i> *	Sulawesi (White-rumped) Triller <i>Lalage leucopygialis</i>
Sulawesi Brush Cuckoo <i>Cacomantis virescens</i>	Sulawesi Fantail <i>Rhipidura teysmanni toradja</i>
Black-billed Koel <i>Eudynamis melanorhynchus melanorhynchus</i> *	White-eyed Spangled Drongo <i>Dicrurus leucops leucops</i>
Grey-rumped Treeswift <i>Hemiprocne longipennis wallacii</i>	Pale Blue Monarch <i>Hypothymis puella puella</i>
Glossy Swiftlet <i>Collocalia esculenta esculenta</i>	Sulawesi Crow <i>Corvus celebensis celebensis</i>
Sulawesi Swiftlet <i>Aerodramus sororum</i>	Citrine Canary Flycatcher <i>Culicicapa helianthea helianthea</i>
Uniform Swiftlet <i>Aerodramus vanikorensis heinrichi</i>	Sooty-headed Bulbul <i>Pycnonotus aurigaster aurigaster</i> [introduced]
White-throated Needletail <i>Hirundapus caudacutus nudipes</i>	Sulawesi Babbler <i>Pellorneum celebense rufoscum</i>
Great Eared Nightjar <i>Lyncornis macrotis macropterus</i>	Sulawesi Heleia <i>Heleia squamiceps analoga</i>
Sulawesi Nightjar <i>Caprimulgus celebensis celebensis</i> *	Kendari White-eye <i>Zosterops consobrinorum</i>
Barred Rail <i>Gallirallus torquatus celebensis</i>	Warbling White-eye <i>Zosterops japonicus montanus</i>
Barred Buttonquail <i>Turnix suscitator rufilata</i>	Sulawesi Leaf Warbler <i>Phylloscopus nesophilus</i>
Sulawesi Honey Buzzard <i>Pernis celebensis</i>	Mountain Leaf-toiler (Tailorbird) <i>Phyllergates cuculatus stentor</i>
Sulawesi Serpent Eagle <i>Spilornis rufipectus rufipectus</i>	Malia <i>Malia grata stresemanni</i>
Sulawesi Hawk Eagle <i>Niseatus lanceolatus</i>	Grasshopper warbler sp. <i>Locustella tax. nov.</i>
Rufous-bellied Eagle <i>Lophotriorchis kienerii formosus</i>	Hylocitrea <i>Hylocitrea bonensis bonensis</i>
Black Eagle <i>Ictinaetus malaiensis malaiensis</i>	Grosbeak Myna <i>Scissirostrum dubium</i>
Small Sparrowhawk <i>Tachypiza nana</i>	Flame-browed Myna <i>Enodes erythrophris centralis</i>
Sulawesi Goshawk <i>Lophospiza griseiceps</i>	White-necked Myna <i>Streptocitta albicollis albicollis</i> *
Sulawesi Masked Owl <i>Tyto rosenbergii rosenbergii</i> *	Short-crested Myna <i>Basilornis celebensis</i>
Sulawesi Scops Owl <i>Otus manadensis</i>	Sulawesi Thrush <i>Cataponera turdoides heinrichi</i>
Cinnabar Boobook <i>Ninox ios</i>	Red-backed Thrush <i>Geokichla erythronota erythronota</i> *
Knobbed Hornbill <i>Rhyticeros cassidix</i>	Grey-streaked Flycatcher <i>Muscicapa griseisticta</i>
Ashy Woodpecker <i>Dryocopus fulvus wallacei</i>	Hoeyell's Warbling Flycatcher <i>Eumyias hoeyelli</i>
Sulawesi Dwarf Kingfisher <i>Ceyx fallax fallax</i> *	Little Pied Flycatcher <i>Ficedula westermanni westermanni</i>
Collared Kingfisher <i>Todiramphus chloris chloris</i>	Snowy-browed Flycatcher <i>Ficedula hyperythra jugosae</i>
Purple-bearded Bee-eater <i>Meropogon forsteni</i>	Rufous-throated Flycatcher <i>Ficedula rufigula</i> *
Sulawesi (Purple-winged) Roller <i>Coracias temminckii</i>	Yellow-sided Flowerpecker <i>Dicaeum aureolimbatum aureolimbatum</i>
Indonesian Kestrel <i>Falco moluccensis</i>	Crimson-crowned Flowerpecker <i>Dicaeum nehrkorni</i>
Meyer's Lorikeet <i>Trichoglossus meyeri</i>	Grey-sided Flowerpecker <i>Dicaeum celebicum</i> *
Sulawesi Racquet-tail <i>Prioniturus platurus platurus</i>	Crimson Sunbird <i>Aethopyga siparaja flavostriata</i>
Blue-backed Parrot <i>Tanygnathus sumatranus sumatranus</i> *	Sahul Sunbird <i>Cinnyris clementiae plateni</i>
Sulawesi Hanging Parrot <i>Loriculus stigmatus stigmatus</i>	Grey Wagtail <i>Motacilla cinerea cinerea</i>
Pygmy Hanging Parrot <i>Loriculus exilis</i>	
Sahul (Red-bellied) Pitta <i>Erythropitta erythrogaster celebensis</i>	
Sulawesi Myzomela <i>Myzomela chloroptera chloroptera</i>	