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Breaking Boundaries: First Report of White-shouldered Starling *Sturnia sinensis* (Passeriformes: Sturnidae) in Indonesia

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Abstract
The White-shouldered Starling *Sturnia sinensis*, a species commonly found in East Asia and known to winter in Southeast Asia, had not been previously recorded in Indonesia's avifaunal list. On 26 September 2023, an unusual starling was spotted among a flock of Daurian Starlings *Agropsar sturninus* near a Buddhist vihara in Tanjungpinang, Bintan Island, Riau Islands Province, Sumatra. The following day, the bird was photographed and documented for closer examination. It was ultimately identified as *Sturnia sinensis*. This record represents a significant range expansion for the species into Indonesian territory, emphasizing the dynamic nature of avian migration and the critical need for ongoing monitoring to capture such unexpected findings.

Keywords: East Asian-Australasian Flyway, migratory passerines, *Sturnia sinensis*, vagrant, Indonesia.

Introduction

Migratory passerine birds are a fascinating part of Southeast Asia's biodiversity, with Indonesia playing a critical role as a wintering destination for many species (Yong *et al.* 2018, 2021). Every year, millions of birds leave their breeding grounds in northern Asia, such as China and Russia, and head south to escape harsh winters and dwindling food supplies (Dufour *et al.* 2021; Tian *et al.* 2024). These passerines, or perching birds, include species like warblers, thrushes, and flycatchers; which rely on Indonesia's diverse landscapes, including forests, wetlands, and agricultural areas for food and shelter during their non-breeding season (Mclure 1998; Iqbal *et al.* 2018).

Indonesia's position along the East Asian-Australasian Flyway makes it an essential stopover and wintering site for migratory passerines (Yong *et al.* 2015; Shi *et al.* 2022). From September to April, these birds arrive in waves, spreading across islands like Sumatra, Java, and Kalimantan. While some species use Indonesia as a temporary stopover to refuel, others settle here for the season, taking advantage of the tropical climate and abundant insect populations (Iqbal *et al.* 2014; Kusumanegara & Iqbal 2015). This migration not only benefits the birds but also contributes to local ecosystems by aiding in pest control and seed dispersal (Laxmikant & Biswas 2020; Newton 2023).

Vagrant birds, which are species that appear outside their usual range, offer intriguing insights into avian distribution and migration dynamics (Shagir & Iqbal 2015; Lees & Gilroy 2021). These unexpected occurrences can arise from various factors, such as extreme weather, navigational errors, or environmental changes like habitat loss and climate shifts (Berthold *et al.* 1992; Harris *et al.* 2013). The White-shouldered Starling *Sturnia sinensis*, a starling commonly found in East Asia and wintering in Southeast Asia, has not been previously recorded in Indonesia's avifaunal list (Sukmantoro *et al.* 2007; Birdlife International 2025; Burung Indonesia 2025a, b). Here, we report the presence of *S. sinensis* in Indonesia, marking a significant expansion of this species' known range into Indonesian territory.

Methods

At about 06:30 AM on 26 September 2023, AHS observed a different-looking starling while counting Daurian starling *Agropsar sturninus* near a Buddhist vihara in Tanjungpinang (0°54'N, 104°27'E), Bintan Island, Riau Islands Province, Sumatra, Indonesia. A flock of starlings perching on electrical wires nearby. The area is characterized by abundant trees and open grassy fields. Upon closer inspection, AHS identified the flock primarily as *A. sturninus*, with one individual differing markedly in plumage and morphology.

The following day, at the same time, AHS revisited the site with a camera and successfully photographed the flock, including the targeted starling. The photographs provided clear views of key plumage details, which were crucial for accurate identification. Further analysis and identification were conducted using relevant field guides (MacKinnon & Phillipps 1993; Feare & Craig 1999; Robson 2008; Craig & Feare 2009; Eaton *et al.* 2022; Taufiqurrahman *et al.* 2022). Comparative observations confirmed that the individual differed significantly from other starlings typically found in the area.

Results and Discussion

The bird was identified as *S. sinensis* based on its whitish-grey plumage, contrasting black wings, blackish tail with a white border, and diagnostic wholly white upperwing coverts and scapulars. It also exhibited a whiter rump and uppertail-coverts, along with a grey bill and grey legs. These features align closely with the descriptions of *S. sinensis* in relevant references (Feare & Craig 1999; Robson 2008; Craig & Feare 2009; Eaton *et al.* 2022). While the bird resembles two other migratory starlings found in Indonesia, Daurian Starling *Agropsar sturninus* and Chestnut-cheeked Starling *A. philippensis*, it can be distinguished by its white iris and white upperwing coverts and scapulars, contrasting with the black iris and darker upperwing coverts and scapulars of the latter two species (Figs. 1-2).



Figure 1. The White-shouldered Starling *Sturnia sinensis* (at the top) was observed perched on an electrical cable alongside Daurian Starlings *Agropsar sturninus* on 27 September 2023 in Bintan Island, Riau Archipelago Province, Sumatra, Indonesia (Photograph: Abdul Hakim Syah).



Figure 2. The White-shouldered Starling *Sturnia sinensis* observed on 27 September 2023 in Bintan Island, Sumatra, Indonesia: **2a**. Side view clearly showing the ventral features, and **2b**. Side view distinctly highlighting the dorsal features (centered in the image) (Photograph: Abdul Hakim Syah).

The Riau Archipelago Province in Sumatra lies close to Singapore and the Malay Peninsula. In Singapore, *S. sinensis* is an uncommon winter visitor and passage migrant, found in habitats such as mangroves, secondary growth, scrub, and open country on the mainland (Seng 2009). Historical records include two specimens of immature females collected in Singapore on October 30, 1891, and January 1892 (Gibson-Hill 1950). In the Malay Peninsula, this species is considered a scarce winter visitor (Puan *et al.* 2020). Wells (2007) describes *S. sinensis* as a non-breeding visitor that is nowhere common but fairly regular in the far north, and local, erratic, or uncommon elsewhere. Bintan Island, where *S. sinensis* was observed, is less than 20 km from both Johor Bahru in Malaysia and Singapore. Given the proximity, it is plausible that *S. sinensis* found in Bintan Island may originate from the Malay Peninsula or Singapore. It is also likely that this species occurs on other suitable islands within the Riau Archipelago, utilizing them as foraging sites during migration.

The presence of *S. sinensis* on Bintan Island is not surprising, as this species has been regularly reported in the Thai-Malay Peninsula (Wells 2007; Seng 2009). There is also an earlier report of 16 starlings resembling *S. sinensis* observed on March 26, 1996, in Tanjung Selor, North Kalimantan Province, Indonesian Borneo (Holmes 1997). However, this record has not been officially recognized as a valid species in Indonesia's bird list (Sukmantoro *et al.* 2007; Gregory 2017; Birdlife International 2025; Burung Indonesia 2025a, 2025b).

Our observation of the vagrant *S. sinensis* on Bintan Island, Sumatra, contributes to a growing number of new distribution records for migrant birds in Indonesia. This finding marks a significant boundary expansion of the species' known range into Indonesian territory. The Riau Archipelago is recognized as a key stopover site for migratory birds wintering from the Thai-Malay Peninsula into Indonesia (Sukmantoro *et al.* 2006; Iqbal 2010). The increase in such records is likely tied to the rising interest in birding among local researchers and birdwatchers in Indonesia, coupled with improved access to binoculars and cameras equipped with long lenses over the past decade (Imansyah & Iqbal 2015; Iqbal & Albayquni 2016; Putra *et al.* 2018; Iqbal *et al.* 2023; Abdillah *et al.* 2025). In 2013 and 2014, Rosy Starling *Pastor roseus* was recorded during the migration period in Yogyakarta and Bali, marking the first documented occurrence of this species in Indonesia. Careful observation of migratory passerines could uncover more instances of *S. sinensis* and other migratory species known from mainland Southeast Asia, such as the Brahminy Starling *Sturnia pagodarum*. Migratory passerines in Indonesia have traditionally received less attention compared to other migratory bird groups, such as shorebirds. Conducting additional surveys focused on migratory passerines is essential to close knowledge gaps and improve understanding of their status in Indonesia.

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