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Fire-crested alethes (*Alethe castanea*) follow humans and bushbuck in Uganda's Budongo Forest

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This report documents four observations of a novel foraging behavior in fire-crested alethes (*Alethe castanea*) in the Budongo Forest Reserve of Western Uganda, where the birds were observed following humans and bushbuck, likely to flush out insect prey, diverging from their typical ant-following strategy. These observations expand our understanding of commensal relationships in tropical forest ecosystems and highlight the adaptability of bird foraging strategies.

KEYWORDS

fire-crested alethe, commensalism, Budongo forest, interspecies interaction, foraging

Introduction

The fire-crested alethe (*Alethe castanea*) is an insectivorous Afrotropical bird species in the family Muscicapidae (Collar, 2020). This species can be easily identified by its red-orange crest, which extends from the forehead to the back of the head, and which can be raised or lowered (Figure 1). Fire-crested alethes occur in subtropical or tropical moist lowland forests across central Africa, from Nigeria to Uganda. The species is known to be an ant-following bird and has been widely observed exploiting raiding army ants (in the genus *Dorylus*). Army ants are keystone social hunters in tropical forests (Kronauer, 2009; Waltert et al., 2024), known to feed on other invertebrates (Waltert et al., 2024). When army ants swarm, ant-following birds feed on the escaping cryptic arthropods and small vertebrates flushed out from the upper soil and leaf litter (Brady, 2003; Craig, 2022). Ant-following birds do not appear to feed on the ants themselves (Willis and Oniki, 1978).

Ant-following is a well-documented bird behavior in Central and South America (O'Donnell et al., 2012; Willis and Oniki, 1978), as well as in parts of Africa (Craig, 2022; Peters et al., 2008). In one study conducted in the Kakamega Forest of Western Kenya, fifty-six different species of birds were documented following army ant raids, with flocks ranging from 1–15 individuals. Of these, the authors identified five bird species as specialized ant-followers, one of which was a species of alethe (*Alethe poliocephala*) (Peters et al., 2008). The exact nature of the ant-bird interaction remains unclear, but a recent study suggests that ant-following birds may be clepto-parasites on army ants, significantly reducing the ants' success rate in capturing prey (Peters et al., 2008). Ant-following provides birds with



FIGURE 1
A fire-crested alethe in the Budongo Forest on 21 July 2022.

access to abundant, flushed prey that would otherwise be difficult to detect or capture (Waltert et al., 2024; Willis and Oniki, 1978), representing a profitable foraging strategy.

Ant-following by birds is an example of bird-insect commensalism (Avilés, 2024), a form of interspecies relationship which can sustain species diversity by creating ecological niches that would not be possible without these biotic interactions (Thompson et al., 1982). In addition to bird-insect commensalism, bird-mammal associations are also well-documented and have been reported to occur between several species (e.g., Layfield, 2023; Mikula et al., 2018). In many of these cases, birds exploit the feeding behaviors of large mammals, benefiting from their involuntary assistance to access food resources more easily (Mikula et al., 2018).

For example, Snowy egrets (*Egretta thula*) hunt small fish as they jump onto shore, fleeing aquatic predators in the Rio Sirena lagoon (Deffebach et al., 2012). Cattle egrets (*Bubulcus ibis*) forage insects flushed out by large, grazing herbivorous mammals (Heatwole, 1965; Thompson et al., 1982). More recently, cattle egrets have also been observed escorting human-operated agricultural machinery in open grasslands (e.g., Del Hoyo et al., 1992). Some mammals appear to be more willing partners for birds than others, one of which is the Bushbuck (*Tragelaphus sylvaticus*). For example, there have been many accounts of bird species, including Fork-tailed Drongos (*Dicrurus adsimilis*) and Red-winged Starling (*Onychognathus morio*), riding on bushbucks, using them to flush out insects or feeding on ticks embedded in their hair (Layfield, 2023).

This report presents three direct observations of fire-crested alethe following human individuals, exploiting their movements to flush out insect prey for easier capture. This behavior diverges from their typical ant-following strategy, suggesting an adapted commensal foraging technique which involves an interspecies relationship with *Homo sapiens*. We also report an observation of this species employing similar tactics with bushbuck (*Tragelaphus scriptus*) and an observation which suggests that this strategy may also be employed with wild Eastern chimpanzees (*Pan troglodytes*). Observations of these behaviors have been informally noted in the past by researchers and field staff at the Budongo Conservation Field Station (BCFS), indicating that fire-crested alethes possess a more flexible foraging strategy than previously recognized. As commensalism can potentially sustain biodiversity by creating additional ecological niches, documenting these interactions is crucial for understanding ecosystem dynamics and species adaptability.

Study site

Our observations were made in the Budongo Forest Reserve, located along the western Rift Valley within the Masindi District of Western Uganda. This forest is a semi-deciduous, medium altitude, tropical rainforest consisting of 793 km² of protected forest and grassland. The forest is located at medium altitude (~1100m above sea level) and has a high annual rainfall of ~1500mm per year (Reynolds, 2005). Budongo Conservation Field Station (BCFS) is a scientific outpost located within the reserve (1° 37' N - 2° 03' N and 31° 22' - 31° 46' E), first established for the purpose of studying wild chimpanzee behavior. The forest contains a population of approximately 600 East African chimpanzees, with two chimpanzee communities (Sonso and Waibira) now habituated for research. Researchers and field staff are present in the forest every day, taking behavioral and ecological data.

Observations

Observation 1

On 2 July 2022 at ~9:00 a.m. we were following a group of wild chimpanzees in the Waibira Community home range when we observed a fire-crested alethe following us on the trail. The bird hopped on the ground behind us at 1–2 meters, pecking at the leaf litter. When the distance between us grew larger, the bird flew to catch up, landing inches away from our boots or on low branches less than a meter away from us. The bird waited for us to walk in front of it, then pecked the ground where our shoes had disrupted the upper soil, presumably looking for insects. This happened repeatedly for roughly 10 minutes.

Observation 2

On 8 July 2022 at ~17:00 p.m., near to where the fire-crested alethe was last seen, we observed a bird of the same species

following us once again (Video S1). It was unclear if this was the same individual. The bird followed us for at least 20 minutes, getting as close as four inches at times. The bird showed no fear when we stopped and approached it, even allowing us to touch it with a leaf.

Observation 3

On 21 July 2022 between ~11:00 a.m. and 12:24 p.m., we were followed once again by a fire-crested alethe while following the Waibira chimpanzee group (Video S2). The bird followed us for over 256 m within a 149 m² area. The route we followed while the bird was with us was hilly (6 m ascent and 2 m descent). The bird consistently made soft chirps and alternated between hopping behind us and flying between the branches beside us. Like before, the bird repeatedly stopped to peck the ground where our boots had disturbed the soil along the trail. When we stopped for a break, the bird waited, approaching and sitting beside us.

The bird continued with us when we set off again. Later, while we were watching a group of chimpanzees, the same bird flew over to them and perched within 1 m of where they were resting. Neither species seemed bothered by the other. We lost the bird when we began to ascend a steep hill in the northern part of the territory. A few hours later, upon descending the hill, we were again followed by a fire-crested alethe which we believe to have been the same individual. It followed us until we lost it a few minutes later.

Observation 4

On 26 July 2022 at ~10:00 a.m., we observed two fire-crested alethes interacting with a bushbuck (*Tragelaphus sylvaticus*) (Video S3). The bushbuck was alone and remained still, observing the human observers for ~3 minutes. During this time, two fire-crested alethe birds continuously attempted to land on the bushbuck's back, successfully perching on it for brief periods. The bushbuck appeared to want to shake the birds off, rapidly moving its tail on at least one of the perch attempts. When not perched on the bushbuck's back, the alethes situated themselves on the ground close to the animal or nearby on low branches, chirping frequently. Throughout the observation, the bushbuck did not display any foraging behavior.

When the bushbuck started to travel, the birds followed behind, waiting for it to move several meters before flying after it and landing on low branches or the ground. We observed this traveling pattern for approximately one minute before losing sight of the bushbuck and both birds.

Discussion

These observations appear to present a previously unreported foraging strategy in *Alethe castanea*. While ant-following behavior is well-established among forest understory insectivores (Peters et al., 2008; Willis and Oniki, 1978), our observations suggest that fire-crested alethes in Budongo Forest are capable of exploiting

alternative disturbance cues, namely those generated by humans and terrestrial mammals such as bushbuck and, possibly, chimpanzees. This behavior suggests a degree of foraging flexibility not previously attributed to this species and aligns with growing evidence that even specialized ant-followers may opportunistically engage in other forms of commensalism.

The repeated, close-range following of human observers, sometimes over extended periods and distances, indicates a deliberate, non-random behavior. The birds described in our observations appear to use human footfall to access prey, exploiting disturbances in the leaf litter similarly to how ant-following birds exploit arthropods flushed by army ants. This behavior, however, differs from ant-following in its reliance on large, non-predatory mammals as mechanical disturbers of the environment, rather than the chemical and behavioral cues associated with ant swarms.

Similar strategies have been described in several bird species globally. Most notably, the cattle egret (*Bubulcus ibis*) is well known for following livestock, large wild herbivores, and even tractors to exploit flushed invertebrates (Del Hoyo et al., 1992; Heatwole, 1965). Also, fork-tailed drongos and oxpeckers are often observed in association with ungulates like bushbuck, either feeding on parasites or pursuing insects disturbed by the animals' movement (Layfield, 2023). However, such behavior has rarely been documented in species considered specialized ant-followers, and, to our knowledge, this is the first published report of alethe species following other animals, including humans, for foraging purposes.

These observations align with a broader reevaluation of behavioral rigidity in ant-following birds. While some taxa (e.g., obligate antbirds in the Neotropics) appear highly specialized and dependent on army ant swarms (O'Donnell et al., 2012), others may be more flexible than previously assumed. For example, Mikula et al. (2018) documented over 200 species of birds globally that engage in commensal foraging with mammals, suggesting that such interactions may be more common, or at least more opportunistically employed, than historically recognized.

The fire-crested alethes' behavior in Budongo appears to fit within this broader pattern of facultative commensalism. Notably, these birds did not simply tolerate the presence of humans or bushbuck but actively tracked and positioned themselves to benefit from their passage. The repeated chirping and movement patterns, including the bird flying ahead to anticipate further flushing events, indicate a proactive foraging strategy, rather than incidental association.

These observations also raise important ecological and evolutionary questions. Is this behavior a localized adaptation to high and predictable human presence in Budongo, where researchers and field assistants are frequently present on trails? Or is it an underreported but widespread foraging tactic among alethes or related species? While anecdotal reports from the BCFS field staff suggest that this behavior has been seen before, its absence in the literature underscores the importance of documenting such interactions. In the context of increasing anthropogenic activity in tropical forests, behavioral plasticity may become an important trait for species persistence.

Additionally, the potential observation of alethe-chimpanzee associations, while preliminary, opens an intriguing line of inquiry

into multi-species networks involving primates. Birds have been documented foraging alongside non-human primates in both Africa and Asia (Sridhar et al., 2009), often benefiting from flushed insects or increased predator vigilance. While chimpanzees are not typically associated with insect flushing, their terrestrial travel and disturbance of leaf litter may inadvertently provide similar foraging opportunities to alert avian species.

One important consideration is the role of climate in shaping these behavioral shifts. Driver ants (*Dorylus* spp.), which fire-crested alethes typically depend upon, exhibit collective raiding and migration behaviors that are highly sensitive to environmental conditions, particularly temperature, rainfall, and humidity (Schöning et al., 2005). Warming and altered rainfall patterns are likely to reduce or change the temporal windows during which large swarm raids occur, potentially decreasing the reliability of ants as a foraging resource for obligate followers. In this context, the novel commensal behavior we observed in Budongo may represent an adaptive response to reduced opportunities for ant-following, with alethes diversifying their strategies to include alternative disturbance cues. Future research could therefore benefit from systematically tracking driver ant activity across seasons using transects or standardized survey methods. Such data would help clarify whether changes in ant swarm availability correlate with the emergence of facultative commensal foraging in specialized ant-followers, providing important insights into how climate change may restructure these interspecific interactions.

In conclusion, the observed interactions between fire-crested alethes, humans, bushbuck, and possibly chimpanzees represent a previously undocumented form of commensal foraging behavior. These observations expand our understanding of the ecological plasticity of ant-following birds and highlight the importance of documenting even seemingly anecdotal interspecies interactions. In doing so, we gain deeper insight into the complex web of biotic relationships that structure tropical forest ecosystems — and the capacity of species to exploit novel niches in changing environments.

Data availability statement

The original contributions presented in the study are included in the article/Supplementary Material. Further inquiries can be directed to the corresponding author.

Ethics statement

This study is the result of purely ad libitum observations made during the data collection phase of a separate study on wild chimpanzee behavior. For our study on primates in the Budongo Forest, we had ethical permission from the Uganda Wildlife Authority (permit no. COD/96/05) and Uganda National Council for Science and Technology (UNCST) (permit no. NS257ES). The study was conducted in accordance with the local legislation and institutional requirements.

Author contributions

EF: Conceptualization, Data curation, Formal Analysis, Investigation, Methodology, Resources, Visualization, Writing – original draft, Writing – review & editing. DT: Conceptualization, Investigation, Resources, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fbirds.2025.1677075/full#supplementary-material>

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