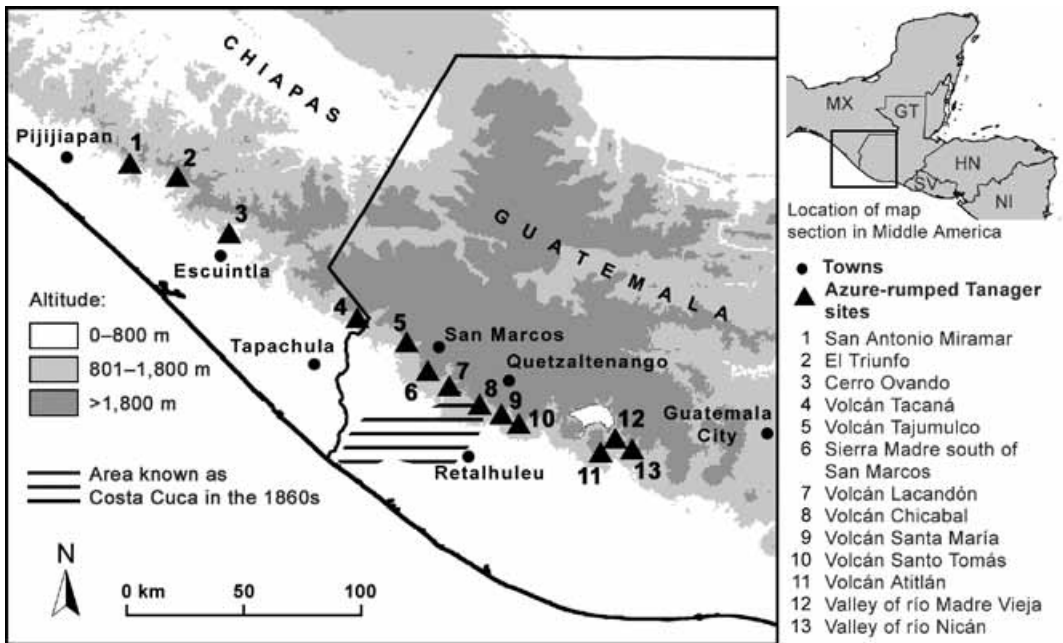


Azure-rumped Tanager *Tangara cabanisi*: from ornithological enigma to conservation flagship

Knut Eisermann

Azure-rumped Tanager *Tangara cabanisi* (Fig. 1) is endemic to the Pacific slope highlands of Guatemala and Chiapas, in southern Mexico. Following its discovery, based on a single specimen, the species went unseen for several decades. Recent field studies in Guatemala, by the author and his colleagues, have provided substantial new insights into the distribution and ecology of this Endangered tanager.





Carl Gustav Bernoulli, a Swiss physician who resided in Guatemala between 1858 and 1877, dedicated his leisure time to collecting plants, animals and archaeological relicts, sending several shipments of such material to different European museums. Among those birds received by the Museum für Naturkunde in Berlin, Germany, was a single specimen of a blue-coloured tanager. Bernoulli secured this bird himself, and it was the only specimen of the species he was able to collect²³. Jean Cabanis, then first custodian of the zoological collection in Berlin, recognised it (Fig. 3) as a taxon new to science and described it in honour of Philip Lutley Sclater as *Calliste sclateri*². This name, however, was already occupied for the Golden Tanager *Calliste sclateri* (Lafresnaye), now *Tangara arthus sclateri*, from eastern Colombia. Subsequently, Sclater renamed the new tanager

Counter-clockwise from top:

Figure 2. Distribution of Azure-rumped Tanager *Tangara cabanisi* based on published records^{9,14}. Country codes in overview map: GT = Guatemala, HN = Honduras, MX = Mexico, NI = Nicaragua, and SV = El Salvador.

Figure 3. Type specimen of Azure-rumped Tanager *Tangara cabanisi* in the Museum für Naturkunde in Berlin (ZMB 18921), collected by Carl Gustav Bernoulli in the 1860s in Guatemala, originally described by Jean Cabanis in 1866³ and renamed by P. L. Sclater²⁴ in 1868 (Knut Eisermann)

Figure 4. This lithograph by Joseph Smit (1836–1929) was based on the type specimen, and published with Sclater's²⁴ manuscript in *Ibis* redescriving the species (reproduced with kind permission of the British Ornithologists' Union)



Figure 5. Humid broadleaf forest in the foothills of Volcán Atitlán, prime habitat of Azure-rumped Tanager *Tangara cabanisi* (Knut Eisermann)

from Guatemala as *Calliste cabanisi*²⁴, honouring his German colleague. Thereafter, 70 years passed without further sightings of the bird we now call Azure-rumped Tanager *Tangara cabanisi*.

Doubts concerning the type locality

Bernoulli indicated Costa Cuca, Guatemala, as the type locality of his specimen. This was later erroneously attributed to the village of Flores Costa Cuca^{4,14}, which is located at 500 m above sea level. However, in the 1860s, Costa Cuca was not a village, but a region of c.1,300 km² (Fig. 2), which nowadays forms the southern part of the department of Quetzaltenango¹². Because all modern records are from >800 m elevation, the type locality was probably in the upper part of the Costa Cuca region⁹. More details concerning the type locality might be contained in Bernoulli's notebooks, which remain missing. He died in San Francisco, California, on his return journey to Switzerland when just 45 years old²⁰.

Rediscovery

In 1937 a second specimen was collected c.130 km north-west of the type locality, near Escuintla in the Mexican state of Chiapas², with two further specimens taken in 1943 and another in 1955–65 at Volcán Tacaná, also in Chiapas^{14,15}. Despite a life-like lithograph of an Azure-rumped Tanager by Joseph Smit²⁴ drawn from the type specimen (Fig. 4), the species remained so little known that in some of the first field guides to Middle American birds it was illustrated without the typical dark lores, dark lower ear-coverts and dark breast spots⁶, or simply not illustrated at all^{18,21}. The species was initially known as Cabanis' Tanager²², but this was subsequently modified by Blake¹ and Eisenmann⁷ to the name in use today.

Distribution and ecology

Occasional observations in the Sierra Madre de Chiapas, in southern Mexico, led to the first field research into the Azure-rumped Tanager's ecology in the 1970s, including the first nest record^{15,17}. Subsequently, available habitat in Chiapas was quantified to be 1,125 km^{2,14}. Post-1976, infrequent

sightings of this tanager were made in Guatemala⁹, enabling some knowledge of its distribution in the country, where it is now known from nine major topographic units and 16 localities, from the Mexican border in the west to the municipality of Pochuta in the east⁹.

Azure-rumped Tanager is considered locally common^{5,9}, and the first assessment of its population density came from Volcán Atitlán, where an estimated 33–93 Azure-rumped Tanagers / km² inhabit the humid broadleaf forest at 1,400–1,900 m altitude⁹. Whilst in Chiapas the species has been recorded only at 1,000–1,700 m¹⁴, Guatemalan records range from 860 to 1,900 m, including nesting records^{9,10}. This tanager prefers humid broadleaf forest^{9,14} (Fig. 5), but also uses adjacent human-modified habitats such as shade-coffee plantations⁹, in which the species can even nest successfully^{10,11}. Remaining broadleaf forest in its potential area of distribution in Guatemala covers just 250 km² or 21% of this range, whilst coffee plantations occupy 800 km² or 68%. Assuming that the population density in prime habitat throughout the potential range is similar to the study area at Volcán Atitlán, the species' total population in Guatemala could be in the region of 8,250–23,250 individuals⁹.

Nesting by Azure-rumped Tanagers is synchronised to the wet season. In Chiapas ten nests have been found in April–June^{13,19}, and in Guatemala 32 nests have been observed between April and September¹⁰. Azure-rumped Tanagers construct open-cup nests similar to those congeners that are known²⁵, using moss, lichen, rootlets of small epiphytic ferns and soft, cotton-like material, and placed in the upper storey of trees^{10,19} (Figs. 6–7). The 42 nests found to date were placed in 23 different tree species^{10,13,19}.

Azure-rumped Tanagers are omnivores, taking small fruits, such as *Perrottetia longistylis* (Celastraceae), and ripping off pieces of larger, soft fruits, such as the 2 cm-large *Ficus aurea* (Moraceae, Figs. 8–9), which is a principal food source at Volcán Atitlán⁹. They also feed on arthropods, such as Lepidoptera larvae gleaned from leaves, and flying insects, which are captured in sallying flight (Figs. 10–11).

Conservation

Despite being locally common, Azure-rumped Tanager is Endangered because of its overall tiny range of c.2,500 km² and the small amount of available prime habitat. Moreover, suitable habitat is located in a zone especially favourable for agriculture, except for the steepest canyons

and mountain slopes. Although 138 km² (55%) of the remaining broadleaf forest within the species' distribution in Guatemala is legally protected, none of the reserves is strictly protected¹⁶. Most of the protected sites are multiple-use areas or privately protected. All known recent records of the tanager come from within four Important Bird Areas (IBAs): Tacaná-Tajumulco (IBA GT013), Volcán Santiaguito (IBA GT014), Atitlán (IBA GT015), and El Triunfo (IBA MX169 www.birdlife.org/datazone/). Conservation efforts are required not only within existing conservation units⁸. To enhance available habitat for Azure-rumped Tanagers, alterations to the shade management of coffee plantations have been proposed, including replacing non-native shade trees such as *Eucalyptus* spp. with *Ficus aurea*^{9,10}. These improvements could be supported by incentives and certification programmes. Birding ecotourism can also play a role, supporting habitat conservation by developing pride among those landowners whose properties harbour the tanager. Azure-rumped Tanager is one of the main target species for visiting birders, and their fees support the conservation of its remaining habitat. Recent studies of the tanager, Christmas Bird Counts at Volcán Atitlán (www.cayaya.info/eAsiC1) and visiting birders have all helped raise local awareness of this superb bird. Los Andes has even branded its locally sold coffee as 'Café Tangara'. Conservation of Azure-rumped Tanager habitat will also benefit other regional endemics, globally threatened and cloud forest specialist birds, among them Highland Guan *Penelopina nigra* and Resplendent Quetzal *Pharomachrus mocinno*.

Seeing Azure-rumped Tanager

For several decades, the world-renowned El Triunfo reserve in Chiapas has been *the* site at which to find Azure-rumped Tanager, but recent studies have revealed several easily accessible sites in Guatemala, where the tanager is rather common. The species is often first detected by its sibilant and twittering vocalisations¹¹, especially in mature tall forest where tanagers move through the canopy. Small shade-coffee plantations, nestling between pockets of humid broadleaf forest, and forest edges, provide the best opportunities to observe the species at eye level. During the breeding season (April–September) the birds can be observed visiting the rich food sources in the environs of their nest sites. During the non-breeding season, the tanagers move in flocks of up to 20 individuals. Local knowledge of fruiting trees and the species' daily routine are key



Clockwise from top:

Figure 6. Adult Azure-rumped Tanager *Tangara cabanisi* collecting rootlets of the epiphytic fern *Pleopeltis angusta* (Polypodiaceae) for nest building (Knut Eisermann)

Figure 7. Incubating adult Azure-rumped Tanager *Tangara cabanisi* (Knut Eisermann)

Figure 8. Crown of strangler fig *Ficus aurea* (Moraceae) laden with fruit (Knut Eisermann)



Clockwise from top:

Figure 9. Dissected fig of *Ficus aurea* (scaled to the tip of a pen) (Knut Eisermann)

Figure 10. An adult Azure-rumped Tanager *Tangara cabanisi* searching for arthropods in the foliage of an *Inga* tree (Fabaceae) (Knut Eisermann)

Figure 11. Adult Azure-rumped Tanager *Tangara cabanisi* sallying to capture sciarid flies (Diptera: Sciaridae) on a cypress tree *Neocupressus lusitanica* (Cupressaceae) (Knut Eisermann)

to observing Azure-rumped Tanagers. At Volcán Atitlán there are two private nature reserves with accommodation and knowledgeable local guides (Los Tarrales Reserve, www.tarrales.com, and Los Andes Reserve, www.andesclooudforest.com). The Refugio del Quetzal (www.cayaya.info/gbjgft) is another easily accessible municipal reserve in San Rafael Pie de la Cuesta, south of San Marcos. North of the town of Retalhuleu lies the communal reserve of Loma Linda, at the foot of Volcán Chicabal (www.cayaya.info/ejo9hB), a day-trip from the comfortable lodge in the Patrocinio Reserve (www.reservapatrocinio.com). Finca Las Nubes (www.cayaya.info/e7GPKv) is a private reserve at Volcán Santo Tomás, which also offers accommodation and guides.

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