

# Different by design

TEXT & PHOTOGRAPHS BY NICK GARBUTT

Islands are often peculiar and quirky. It's their idiosyncrasies that make them special. While continental hotspots may support the greatest diversity of birds, islands are generally the home of more unusual species: they are the realms of endemics. ▶

*The most spectacular member of the family, the Helmet Vanga is also one of the most predatory. Its massive beak is a formidable weapon and can subdue prey like chameleons, other lizards and frogs. Quite why the beak is such a vivid blue is more of a mystery.*





Madagascar is a classic case in point. The island has perhaps six endemic families (depending on the taxonomy followed), including such oddities as the ground-rollers (see Vol. 5, No. 2), mesites (variously considered rails, pigeons or passerines), asities and the equally enigmatic cuckoo-roller. There are 37 regionally endemic genera, many of which comprise only a single species, and out of a total of 204 breeding species on the island, a staggering 120 are found nowhere else.

The vangas are perhaps the island's most celebrated endemic family (Vangidae) and provide an excellent example of adaptive radiation – the process whereby a small stock of founders becomes isolated and is then driven by evolution to diversify spectacularly. The founding species in this case may have resembled something like a present-day helmet-shrike and when they became established on Madagascar there were probably few other birds in residence. Seizing the opportunity, the vangas evolved

to occupy niches filled in other parts of the world by woodpeckers, wood-hoopoes, shrikes, tits and even nuthatches.

Today, this variety is particularly manifested in their beak shapes – short and neat, long and probing, thickset and heavy – but also in their body size and plumage. So dramatic has been their diversification that on the face of it the only common feature the vangas share is their co-habitation of Madagascar.

Although this spectacular radiation of shrike-like birds has long been recognised, the exact composition of the family has been discussed, challenged and disputed many times over. The fundamental difficulty has been to demonstrate a theme of morphological traits to link such a diverse group and confirm a common ancestry.

If you were to flick through one of the current field guides to the birds of Madagascar, it would probably list a total of 15 vanga species. All are found only on Madagascar (with the exception of the Blue Vanga *Cyanolanius madagascariensis*, which also occurs on the Comoros) and all are native forest-dwellers that have largely been unable to adapt to habitats altered by human intervention. Even a cursory glance at the plates would illustrate the extent of their diversity, from the garrulous Sickle-billed Vanga *Falcula palliata* to the diminutive Nuthatch Vanga *Hypositta corallirostris*, at 13–14 centimetres the smallest member of the family. As its name implies, this species bears an uncanny likeness to true nuthatches, and in fact was originally classified as one.

However, recent DNA analysis has not only provided confirmation that the various members of the family do indeed share a common ancestry but also raises the distinct possibility that the group is far more diverse than was previously thought. This molecular evidence suggests that several other endemic Malagasy birds may in fact also belong to the vanga radiation. These include Crossley's Babbler *Mystacornis crossleyi*, Ward's Flycatcher *Pseudobias wardi* and Common Newtonia *Newtonia brunneicauda*. If the latter is confirmed, the logical conclusion would be that the Dark Newtonia *N. amphichroa* and Archbold's Newtonia *N. archboldi* would also be vangas.

All vangas are primarily insectivorous, with some species such as the Blue Vanga and Chabert's Vanga *Leptopterus chabert*



occasionally including fruit in their diet, and other, larger species like Hook-billed Vanga *Vanga curvirostris* and Helmet Vanga *Euryceros prevostii* also tackling small vertebrate prey from time to time. What is interesting is the range of methods and techniques that different family members employ to find and predate their prey. It is this range of strategies, in combination with variation in target prey, that has led to the evolution of such variation in beak size and design.

Recent field studies in Madagascar have begun to provide some information on vanga feeding ecology. Broadly speaking, five sub-groups emerge which each adopt a different foraging strategy.

The smaller species, like Red-tailed Vanga *Calicalicus madagascariensis*, the recently described Red-shouldered Vanga *C. rufocarpalis* and Nuthatch Vanga, are primarily 'gleaners' that search for and gather their prey when hopping around branches. The Nuthatch Vanga is the most specialised: it always faces 'head up' and ascends the boles and branches of large trees, scouring the bark. It is often aggressive towards conspecifics, frequently chasing intruders away. The Newtonia species would also fall into this group, were they to be reclassified as vangas.

A variation is those vangas that combine regular gleaning with some aerial hunting manoeuvres, and exponents of this method include Chabert's Vanga and the Tylas Vanga *Tylas eduardi*. The most spectacular, however, is the Blue Vanga, not only because of the male's outrageous electric-blue plumage, but also because of its ability to wrinkle insects from clusters of leaves while hanging upside-down. I've watched individuals return repeatedly to the ends of branches and perform intricate aerobatics in order to finally remove a juicy morsel.

Many of the larger vangas, like Hook-billed, Helmet and the Rufous Vanga *Schetba rufa* are primarily aerial specialists: their hunting technique is to sit and wait in the canopy or understorey, constantly searching the branches and foliage for potential victims. Once prey is located they swoop in to snatch and claim their meal. While it is likely that most of these hunts take place in the canopy, the Rufous Vanga is also known to forage at or around ground level. It has even been seen capturing prey flushed by ground-feeding birds such as White-breasted Mesites pecking through leaf-litter.

However, the Hook-billed and Helmet vangas are perhaps the most classically

**Opposite** Found throughout the drier forest areas, the Sickle-billed Vanga is a noisy species regularly encountered in flocks of up to a dozen birds (and even up to 40 have been recorded).

**Above** One of three species of vanga belonging to the genus *Xenopirostris*, Pollen's Vanga inhabits the rainforests of the east, although, somewhat mysteriously, it is more common in the southern portion of the rainforest belt than in the north. Ranomafana National Park is the best place to see this species.





## All [vangas] are native forest-dwellers that have largely been unable to adapt to habitats altered by human intervention



predatory members of the family and their beaks are correspondingly large and powerful. A couple of years ago in Ranomafana National Park I found a leaf-tailed gecko lying on a forest path and screaming in the most blood-curdling fashion imaginable. The reason was obvious: it had lost its tail and a drop of scarlet blood oozed from the stump that remained. I looked around the nearby vegetation and soon saw the culprit for the gecko's injury – a Hook-billed Vanga sat on a branch some 10 metres away, with the gecko's tail in its beak. Before swallowing it, the vanga knocked the still-twitching tail several times against the branch.

The bird then continued to search the forest-floor in typical fashion – tilting its head from side to side – before giving up and flying back up the trail and out of sight. I was just about to release the gecko, when the vanga reappeared and again began systematically searching the forest-floor and understorey. Not wanting to condemn the gecko, I waited for a few minutes until the vanga once more disappeared before releasing the gecko onto the trunk of a small tree. It initially sat motionless and then began to climb slowly upwards to a height of around four metres before it stopped.

I retreated to watch. A couple of minutes later the vanga returned to resume the search, cocking its head regularly to alter its angle of view. Twice the bird changed position on its perch. It then flew to another perch no more than five metres from the gecko and repeated the procedure. Within 30 seconds it spotted the gecko and swooped in to pluck the unfortunate lizard from the tree trunk, seemingly grabbing it by the head. The gecko called violently again and the vanga took it to a perch and beat it several times against the branch. It then flew off up the trail, carrying the lizard in its beak by the head/neck.

More recently, in the forests of the Masoala Peninsula I had the enviable opportunity to watch a pair of Helmet Vangas at their nest, bringing food to their young chicks. With a little careful manoeuvring, I was able to position myself only a few metres from the nest, giving myself an unimpeded view. What I saw during the course of several hours was quite remarkable.

The adults took turns at incubating their brood, but for lengthy periods both

parents were away from the nest. On their return the parents' beaks were filled with tasty morsels that were unceremoniously rammed down the throat of an eager chick. It was, however, the range of prey items that surprised me. As expected, large insects like katydids, stick insects and mantises featured heavily, but other invertebrates included centipedes and even a scorpion. Less frequently, larger vertebrate prey items appeared on the menu, including forest floor-dwelling stump-tailed chameleons (*Brookesia* spp.) as well as other small chameleons, a very small snake (possibly a thread snake) and numerous small frogs, including a number of brightly coloured species I'd not seen before.

Perhaps the most specialised member of the family is the Sickie-billed Vanga, which fills the niche occupied by woodpeckers and wood-hoopoes on mainland Africa. It uses its long decurved beak to probe beneath bark and in crevices for insect grubs and other invertebrates. It is often encountered in noisy flocks of various sizes (sometimes more than a dozen birds), their characteristic plaintive cries and cackling calls being characteristic sounds of the drier forests they inhabit. In fact, one of its Malagasy names, *Tsiatsiaka*, roughly translates as 'cry-baby bird'.

Other large vangas combine more generalised gleaning techniques with active probing beneath bark. These include common and widespread species like the White-headed Vanga *Artamella viridis* and rare, enigmatic birds like Bernier's Vanga *Oriolia bernieri*, a species about which very little is known. Found primarily in the undisturbed rainforests of the north-eastern part of the country, it has been observed foraging around the fronds of palms and *Pandanus* trees, but also on tree trunks in a rather destructive manner, reminiscent of a woodpecker. To my knowledge, the nesting behaviour of Bernier's Vanga remains completely unknown.

Also in this group are three species from the genus *Xenopirostris*. All are thrush-sized birds with thickset, laterally flattened beaks that are used in various ways to prise, strip and flake away the bark from dead trees. Not surprisingly, these three species have discrete ranges. Pollen's Vanga *X. pollenii* is a rainforest bird found mainly in the south-east, whereas Lafres-naye's Vanga *X. xenopirostris* lives in the arid spiny

forest of the south and south-west. Somewhat mysteriously, Van Dam's Vanga *X. damii*, probably the most endangered member of the family, is found only at two widely separate localities: the dry deciduous forests around Ankarafantsika in the north-west and the more humid deciduous forests at Analamera in the far north-east.

With so many varied ways of finding food it is not surprising that different vangas often forage in concert. Mixed feeding parties of birds characterise many tropical forests and in Madagascar vangas are often the principal constituents of such flocks. In these aggregations, different species move through the canopy at slightly dif-

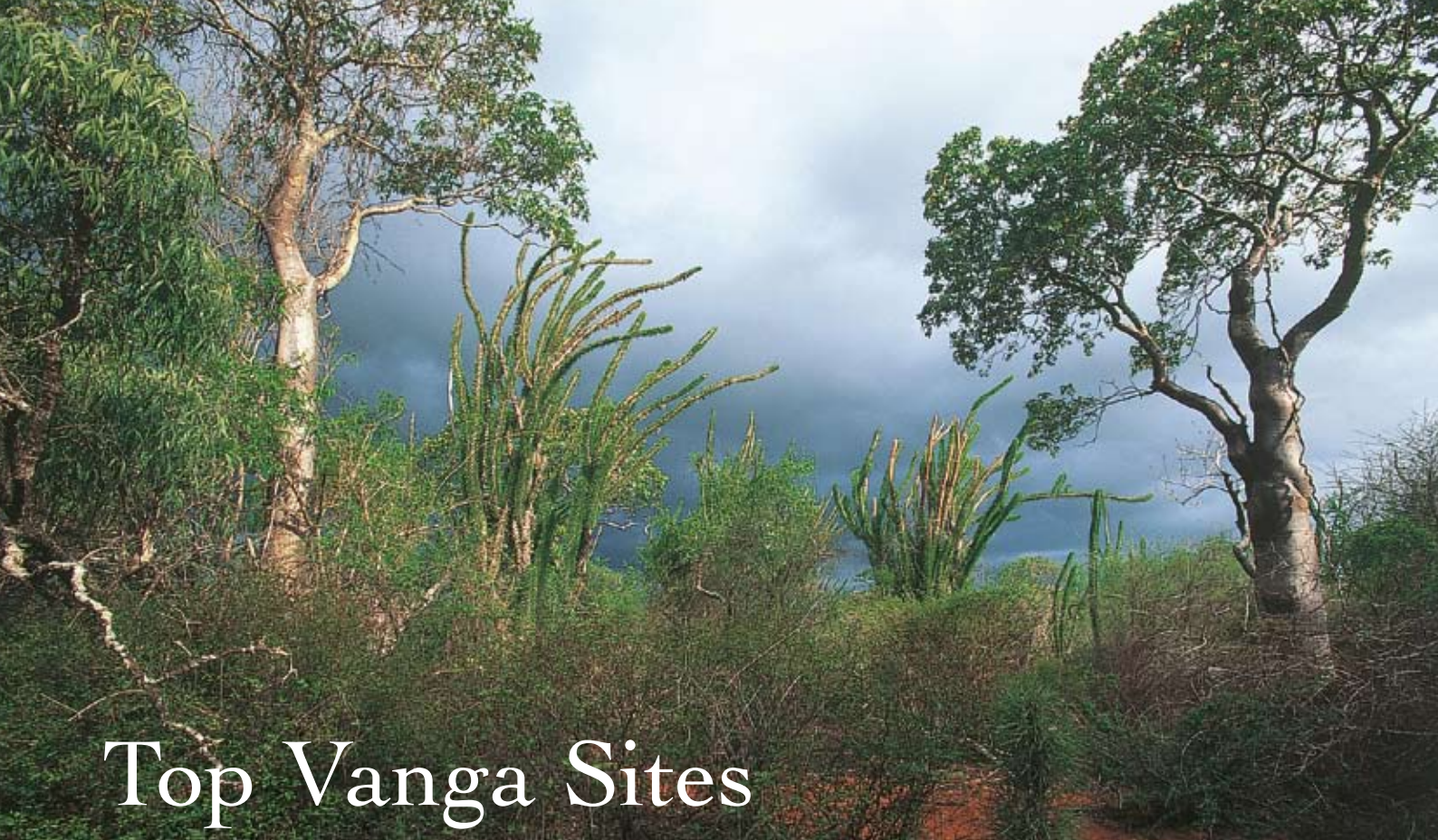


ferent levels, all feeding in slightly different ways. Some birds will disturb and flush prey that others are able to take advantage of, with an overall mutual benefit.

This habit makes vanga-watching quick-fire and exciting at times and the variety of different vanga species in a flock can be considerable. One flock I encountered on the Masoala Peninsula contained every vanga found in the area (together with other species) and over the course of a memorable 10-minute period I was able to observe each and every one: Helmet, Bernier's, Rufous, Nuthatch, Blue, Hook-billed, White-headed, Chabert's, Tylas and Red-tailed. ▷

Many vanga species are found both in dry forests of the west and in rainforests of the east, for instance, Blue, Rufous, Hook-billed, and White-headed vangas (opposite, clockwise from top left). However, Lafresnaye's Vanga (above) is limited to the arid spiny forest areas of the south and south-west.





# Top Vanga Sites

These are the parks and reserves I believe to be Madagascar's very best, not only for the diversity of their vangas, but also for the quality of the other bird- and wildlife-watching opportunities and overall experience they offer.

## Eastern Rainforest Andasibe–Mantadia National Park

The most accessible rainforest reserve – now arguably the island's best – with good accommodation on its doorstep. A top-notch place for general bird-watching, especially for rainforest specials like ground-rollers. Many vangas are also to be seen (Nuthatch, Blue, White-headed, Tylas and Red-tailed). Lemurs, including indris and brown lemurs, are easily seen and increasingly too, the diademed sifaka. There are also lots of snakes, chameleons and frogs.

## Masoala National Park

This is the largest remaining expanse of lowland rainforest on the island and is fabulous for a number of the rare endemics like Helmet and Bernier's vangas, various ground-rollers, and Madagascar Serpent Eagle and Red Owl. Other, more common vangas are also regularly seen, including the

Rufous, Nuthatch, Blue, Hook-billed, White-headed, Tylas and Red-tailed. It is also the only place to see red-ruffed lemurs, with plenty of reptiles and frogs visible too. The facilities are limited, the walking can be tough and it is often very wet.

## Ranomafana National Park

The only accessible rainforest area in the south-east and one of the best general birdwatching sites on the island. This is the best place to see Pollen's Vanga and is also good for Tylas, White-headed, Blue and Hook-billed vangas. There are comfortable lodges in the nearby village and a campsite close to the entrance.

## Western Dry Deciduous Forest Ampijoroa Forest

This is the best fragment of accessible western deciduous forest remaining and birding in general is first rate. This is

one of only two locations for Van Dam's Vanga and perhaps the best place to see Rufous Vanga. Other visible rare endemics include White-breasted Mesite, Schlegel's Asity and Madagascar Fish Eagle. Many lemurs are very approachable and reptiles are also abundant, especially after rain.

## Southern Spiny Forest Ifaty Forest

Spectacular spiny forest that is critically threatened by cutting for charcoal. The local speciality is Lafresnaye's Vanga (and also Long-tailed Ground-Roller, Sub-Desert Mesite and Running Coua). Other vangas include Sickie-billed, White-headed and Red-tailed. There are several good beachfront hotels and lodges in the vicinity.

*For further information on wildlife tours to Madagascar, contact Nick Garbutt, [www.nickgarbutt.com](http://www.nickgarbutt.com); e-mail [nick@nickgarbutt.com](mailto:nick@nickgarbutt.com)*

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**Above** *Ifaty is one of the best places to see a diversity of different vangas; no fewer than six species can easily be observed.*