

Beauty of the Beast

MADAGASCAR BEAUTIES



A CAROUSEL OF CHAMELEONS

A photographic tribute to the weird and wonderful, color-changing - and tragically endangered - lizards of the Red Island



Furcifer pardalis

Panther Chameleon *Furcifer pardalis*, adult male, Ambilobe color morph, near Ambilobe village, Madagascar. On the previous page, Montagne d'Ambre Chameleon *Furcifer* sp. "Montagne d'Ambre", female, Montagne d'Ambre National Park, Madagascar.

TEXT BY ANDREA FERRARI
PHOTOS BY ANDREA & ANTONELLA FERRARI



Furcifer pardalis

Tail detail of Panther Chameleon *Furcifer pardalis*, adult male, Djangoa color morph, Ankaramy-Ambanja route, Madagascar.

Chameleons or chamaeleons (family *Chamaeleonidae*) are a distinctive and highly specialized clade of Old World lizards with 202 species described as of June 2015. These fascinating, strange-looking species come in a range of colors, and many species have the ability to change color. Chameleons are distinguished by their zygodactylous feet (like those of birds, having the toes of each foot arranged in pairs, with two toes in front and two behind); their very extensive, highly modified, rapidly extrudable tongues; their swaying gait; and crests or horns on their brow and snout. Most species, the larger ones in particular, also have a prehensile tail. Surprisingly, chameleons' eyes are independently mobile, but in aiming at a prey item, they focus forward in coordination, affording the animal stereoscopic vision.

Chameleons are splendidly adapted for climbing and visual hunting. They live in warm habitats that range from rain forest to desert conditions, with various species occurring in the mainland of sub-Saharan Africa and on the island of Madagascar, although a few species live in northern Africa, southern Europe, the Middle East, southern India, Sri Lanka, and several smaller islands in the western Indian Ocean. There are introduced, feral populations of veiled and Jackson's chameleons in Hawaii, and isolated pockets of feral Jackson's

chameleons have been reported in California and Florida. All the specimens appearing on these pages, representing a remarkable variety of species, were encountered and photographed on the Indian Ocean island of Madagascar, which we visited extensively thanks to our friends of TanalaHorizon - Madagascar, also known as the Red Island, is hands-down the best possible destination to admire these incredible animals in the wild.

Chameleons inhabit all kinds of tropical and mountain rain forests, savannas, and sometimes deserts and steppes. The typical chameleons from the subfamily *Chamaeleoninae* are arboreal, usually living in trees or bushes, although a few (notably the Namaqua chameleon) are partially or largely terrestrial. Most species from the subfamily *Brookesiinae*, which includes the genera *Brookesia*, *Rieppeleon*, and *Rhampholeon*, live low in vegetation or on the ground among leaf litter. In a sad, tragic repetition of countless other creatures, all species of chameleons are currently threatened by extinction. Declining chameleon numbers are due to rampant deforestation and consequent habitat loss, particularly in Madagascar.

Most chameleon species are able to change their skin colouration, very often in a truly spectacular way. Different chameleon species are able to vary



Panther Chameleon *Furcifer pardalis*, Nosy Faly color morph, male in breeding livery, Nosy Faly, Madagascar.

their colouration and pattern through combinations of pink, blue, red, orange, green, black, brown, light blue, yellow, turquoise, and purple. Chameleon skin has a superficial layer which contains pigments, and under the layer are cells with guanine crystals. Chameleons change colour by changing the space between the guanine crystals, which changes the wavelength of light reflected off the crystals which changes the colour of the skin. Colour change in chameleons has functions in camouflage, but most commonly in social signaling and in reactions to temperature and other conditions. The relative importance of these functions varies with the circumstances, as well as the species. Colour change signals a chameleon's physiological condition and intentions to other chameleons. Chameleons tend to show brighter colours during their mating season (in Madagascar from May to October - that is when chances to find them in the wild are at their best) and when displaying territorial aggression to other chameleons.



Left, Parson's chameleon *Calumma parsonii*, female, head detail, Andasibe-Mantadia National Park, Madagascar; right, Panther Chameleon *Furcifer pardalis*, adult male, Djangoa color morph, Ankaramy-Ambanja route, Madagascar - both images showing independent vision in chameleons.

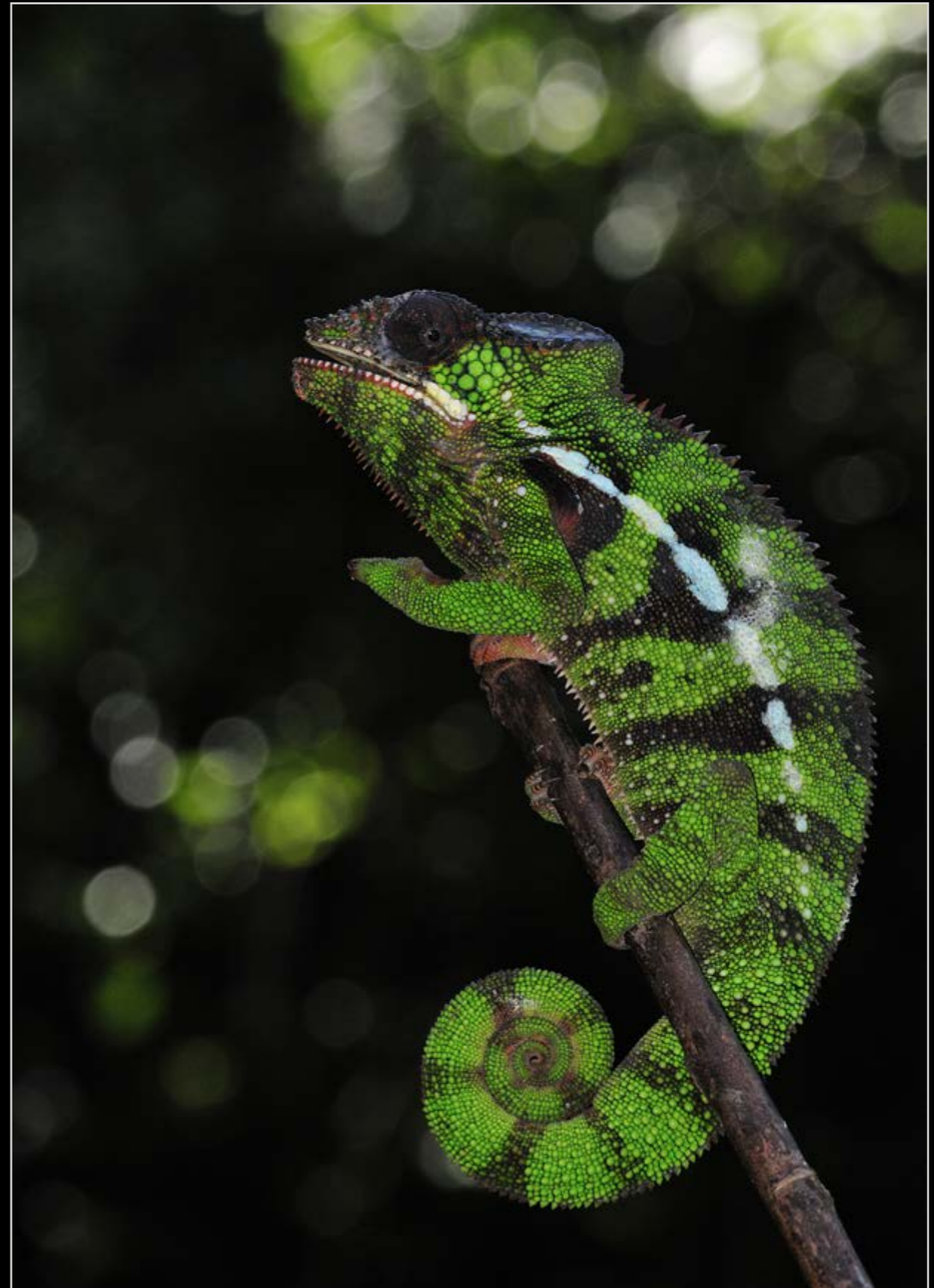


Furcifer pardalis

Panther Chameleon *Furcifer pardalis*, Andasibe color morph, male in breeding livery, Andasibe-Mantadia National Park, Madagascar.



Furcifer pardalis



Left, Panther Chameleon *Furcifer pardalis*, adult male, Ankaramy "Pink Panther" color morph, near Ankaramy, Madagascar; right, Panther Chameleon *Furcifer pardalis*, adult male, Montagne d'Ambre color morph, Montagne d'Ambre National Park, Madagascar.



Furcifer oustaleti

Oustalet's or Giant Chameleon *Furcifer oustaleti*, adult male, near Ankify, Madagascar.



Left, Panther Chameleon *Furcifer pardalis*, adult male, Ankify color morph, near Ankify, Madagascar; top, Montagne d'Ambre Chameleon *Furcifer* sp. "Montagne d'Ambre", female, Montagne d'Ambre National Park, Madagascar.



Panther Chameleon *Furcifer pardalis*, adult male, Ambilobe color morph, near Ambilobe village, Madagascar.



Calumma parsonii

Andasibe Parson's Chameleon *Calumma parsonii* sub. *cristifer*, adult male, Andasibe-Mantadia National Park, Madagascar. This is one of the largest chameleon species - if not *the* largest.



Left, Short-horned Chameleon *Calumma brevicorne*, male, Andasibe-Matadia National Park, Madagascar; right, Panther Chameleon *Furcifer pardalis*, adult male, Ambilobe color morph, near Ambilobe village, Madagascar.



Furcifer lateralis

Carpet Chameleon *Furcifer lateralis*, female, Mandraka, Madagascar.



Left, Panther Chameleon *Furcifer pardalis*, adult male, Ambilobe color morph, near Ambilobe village, Madagascar; right, another Panther Chameleon *Furcifer pardalis*, adult male, Ambilobe color morph, again near Ambilobe village.



Furcifer rhinocerotus

Rhinoceros Chameleon *Furcifer rhinocerotus*, female, Ankarafantsika National Park, Madagascar.



Montagne d'Ambre Chameleon *Calumma amber*, female feeding on grasshopper, Montagne d'Ambre National Park; in the circle, Dwarf Chameleon *Brookesia tuberculata*, Montagne d'Ambre National Park, one of the world's smallest chameleons, perched on a fingertip.



Calumma parsonii

Antonella with a large Parson's chameleon *Calumma parsonii*, a male in breeding livery, Andasibe-Mantadia National Park, Madagascar.