

= Mauritius blue pigeon =

The Mauritius blue pigeon ( *Alectroenas nitidissima* ) is an extinct species of blue pigeon formerly endemic to the Mascarene island of Mauritius in the Indian Ocean east of Madagascar . It has two extinct relatives from the Mascarenes and three extant ones from other islands . It is the type species of the genus of blue pigeons , *Alectroenas* .

It had white hackles around the head , neck and breast and blue plumage on the body , and it was red on the tail and the bare parts of the head . These colours were thought similar to those of the Dutch flag , a resemblance reflected in some of the bird 's names . The males had red foreheads , and the juveniles may have been partially green . It was 30 cm ( 12 in ) long and larger and more robust than any other blue pigeon species . It could raise its hackles into a ruff , which it used for display . Its call sounded like " barf barf " and it also made a cooing noise . It fed on fruits , nuts , and molluscs , and was once widespread in the forests of Mauritius .

The bird was first mentioned in the 17th century and was described several times thereafter , but very few accounts describe the behaviour of living specimens . Several stuffed and at least one live specimen reached Europe in the 18th and 19th centuries . Only three stuffed specimens exist today , and only one bird was ever depicted when alive . The species is thought to have become extinct in the 1830s due to deforestation and predation .

= = Taxonomy = =

The first record of the Mauritius blue pigeon is two sketches in the 1601 ? 1603 journal of the Dutch ship *Gelderland* . The birds appear to have been freshly killed or stunned . The drawings were made by the Dutch artist Joris Joostensz Laerle on Mauritius , but were not published until 1969 . François Cauche in 1651 briefly mentions " white , black and red turtle doves " , encountered in 1638 , which is thought to be the first unequivocal mention of the bird . The next account is that of Jean @-@ François Charpentier de Cossigny in the mid @-@ 18th century .

The French naturalist Pierre Sonnerat brought the bird to the attention of ornithologists in 1782 , calling it Pigeon Hollandais ( Dutch pigeon ) , a French vernacular name that derives from its white , dark blue and red colouration , which reminded Sonnerat of the Dutch flag . He had collected two specimens during a voyage in 1774 . These syntype specimens were deposited in the Muséum national d 'Histoire naturelle in Paris . By 1893 , only one of them , specimen MNHN n ° C.G. 2000 @-@ 727 , still existed , and had been damaged by sulphuric acid in an attempt at fumigation . Since Sonnerat named and described them in French , the scientific naming of the bird was left to the Tyrolean naturalist Giovanni Antonio Scopoli , who did not observe a specimen himself , but latinised Sonnerat 's description in 1786 . He named the bird *Columba nitidissima* , which means " most brilliant pigeon " . When German naturalist Johann Friedrich Gmelin redescribed the bird with the species name *franciae* ( " of France " ) in 1789 , he referred to the now @-@ familiar tricolour which had just been flown for the first time . Pierre Joseph Bonnaterre used the name *batavica* ( " the Dutch one " ) in his description in 1790 .

Another skin arrived at the Paris museum in 1800 , collected by Colonel M. Mathieu for Louis Dufresne . It was sold in 1819 among other items , was sent to Edinburgh , and is now in the National Museum of Scotland as specimen MU No. 624 . It was not identified as a Mauritius blue pigeon until Alfred Newton saw it in 1879 . The last specimen recorded was shot in Savanne in 1826 and given to Julien Desjardins , founder of the Mauritius Natural History Museum in Port Louis , where it is still located , though in poor condition . Only these three taxidermic specimens still exist . In 1840 George Robert Gray named a new genus , *Alectroenas* , for the Mauritius blue pigeon ; *alektruon* in Greek means domestic cock , and *oinas* means dove . *Alectroenas nitidissima* is the type species of the genus , which includes all blue pigeons . The binomial name was emended from *A. nitidissimus* to *A. nitidissima* in 2014 .

Subfossil remains of the Mauritius blue pigeon were collected in the Mare aux Songes swamp by Théodore Sauzier in 1889 . More were collected by Etienne Thirioux around 1900 . They are thought to have been found near Le Pouce mountain and Plaine des Roches .

## == Evolution ==

Alcedinoid blue pigeons are closely interrelated and occur widely throughout islands in the western Indian Ocean . They are allopatric and can therefore be regarded as a superspecies . There are three extant species : the Madagascar blue pigeon ( *A. madagascariensis* ) , the Comoro blue pigeon ( *A. sganzini* ) , and the Seychelles blue pigeon ( *A. pulcherrima* ) . The three Mascarene islands were each home to a species , all of which are extinct : the Mauritius blue pigeon , the Rodrigues blue pigeon ( *A. payandeei* ) , and the Réunion blue pigeon ( *A. sp.* ) . Compared with other pigeons , the blue pigeons are medium to large , stocky , and have longer wings and tails . All the species have distinct mobile hackles on the head and neck . The tibiotarsus is comparatively long and the tarsometatarsus short . The blue pigeons may have colonised the Mascarenes , the Seychelles or a now submerged hotspot island by " island hopping " . They may have evolved into a distinct genus there before reaching Madagascar . Their closest genetic relative is the cloven-toed feathered dove of New Caledonia ( *Drepanoptila holosericea* ) , from which they separated 8 ? 9 million years ago . Their ancestral group appears to be the fruit doves ( *Ptilinopus* ) of Southeast Asia and Oceania .

## == Description ==

The feathers on the head , neck and breast of the Mauritius blue pigeon were silvery white , long , stiffened and pointed , especially around the neck . A patch of bright red , naked skin surrounded the eyes , and extended across the cheeks to the beak , which was greenish with a dark tip . The plumage of the body was indigo , and the back , scapular feathers and wings were metallic blue . The base of the outer rectrices was partially blackish blue . The tail feathers and tail coverts were maroon . The legs were dark slate-to-grey . The iris was reddish orange and had an inner yellow ring . The bird was 30 cm ( 12 in ) in length , the wings were 208 mm ( 8 1/4 in ) , the tail was 132 mm ( 5 1/4 in ) , the culmen was 25 mm ( 1 in ) , and the tarsals were 28 mm ( 1 1/10 in ) . It was the largest and most robust member of its genus , and the hackles were longer and covered a larger area than in other blue pigeons .

Unlike the three surviving skins of Mauritius blue pigeons , one of two illustrations ( the other is in black-and-white and black-and-white ) of a live individual kept in the Netherlands around 1790 shows a red forehead . Both sexes of the Seychelles blue pigeon also have red foreheads , and Julian Hume has suggested that the image depicts a male , which was described as " infinitely more handsome " than the female by Cossigny in the mid-18th century . Hume therefore interprets the three surviving skins as belonging to female specimens . A Mauritian woman recalling observations of Mauritius blue pigeons around 1815 mentioned green as one of its colours . Juvenile Seychelles and Comoro blue pigeons have green feathers , so this may also have been the case for juvenile Mauritian pigeons .

Some depictions and descriptions have shown the legs of Mauritius blue pigeons as red , like those of the Madagascar blue pigeon . The legs of the Paris specimen were painted red when the original colour faded , presumably on the basis of such accounts . The legs of the two other surviving specimens have not been painted and have faded to a yellowish brown . This feature is not mentioned in contemporary accounts , and such depictions are thought to be erroneous . Some modern restorations of the bird have also depicted it with facial crenulations , like those of the Seychelles blue pigeon . This feature was unknown from contemporary accounts , until the 1660s report of Johannes Pretorius about his stay on Mauritius was published in 2015 , where he mentioned the bird's " warty face " .

## == Behaviour and ecology ==

Few descriptions of the behaviour of Mauritius blue pigeons are known ; unpublished notes by Desjardins are now lost . An individual was brought to the Netherlands around 1790 , where it

survived in the menagerie of William V , Prince of Orange for three months before dying of oedema . The only two known life drawings of the species ( by G. Haasbroek ) depict this individual . The illustrations show a displaying male raising its hackles into a ruff . This is a characteristic behaviour of other blue pigeons , too , and they can also vibrate their hackles . The following description of the display behaviour and calls of this individual was written on the back on the coloured drawing by Arnout Vosmaer , director of the menagerie :

These [ pigeons are ] dark @-@ blue with lead coloured head @-@ feathers , which they can turn upwards just as a collar , were sent to me from the Cape , but originated from an Isle Mauritius . Presented to the court by the Baron I. N. E. van Lynden 1790 , and were called Pavillons Hollandais . One only I have received alive but died later after a few months from dropsy . In the evening 11 till 12 o 'clock and many times during the night it made nice sounds 10 to 12 times quickly after another like Baf Baf [ pronounced Barf Barf ] , and during the day a kind of cooing sound .

The Mauritius blue pigeon probably lived in pairs or small groups in humid , mountainous evergreen forests , like their extant relatives . Subfossil remains have been found in mid @-@ west , mid @-@ east and south @-@ east Mauritius , indicating that the bird was once widespread . By 1812 , Jacques Gérard Milbert stated that solitary individuals were found in river valleys . They probably became rarer during French rule in Mauritius ( 1715 ? 1810 ) , as lowland areas of the island were almost completely deforested during this time .

Many other endemic species of Mauritius became extinct after the arrival of man , so the ecosystem of the island is severely damaged and hard to reconstruct . Before humans arrived , forests covered Mauritius entirely , but very little remains today because of deforestation . The surviving endemic fauna is still seriously threatened . The Mauritius blue pigeon lived alongside other recently extinct Mauritian birds such as the dodo , the red rail , the Mascarene grey parakeet , the broad @-@ billed parrot , the Mauritius owl , the Mascarene coot , the Mauritian shelduck , the Mauritian duck and the Mauritius night heron . Extinct Mauritian reptiles include the saddle @-@ backed Mauritius giant tortoise , the domed Mauritius giant tortoise , the Mauritian giant skink and the Round Island burrowing boa . The small Mauritian flying fox and the snail *Tropidophora carinata* lived on Mauritius and Réunion but became extinct in both islands . Some plants , such as *Casearia tinifolia* and the palm orchid , have also become extinct .

= = = Diet = = =

Fruits and nuts were probably the mainstay of the Mauritius blue pigeon 's diet , and like other blue pigeons , it may have occupied the upper canopy , and migrated seasonally to where food was available . Cossigny dissected a specimen in the mid @-@ 18th century and later sent it and its stomach contents to René Antoine Ferchault de Réaumur with a letter describing his findings . The gizzard and crop contained four " nuts " , which Cossigny was told were the seeds of either *Calophyllum tacamahaca* or *Labourdonnaisia calophylloides* . The Comoro and Seychelles blue pigeons also feed on *C. tacamahaca* , and the strong gizzard of the former helps in the digestion of the seeds . In 1812 Jacques Gérard Milbert provided the only description of the behaviour of the bird in the wild :

The second is the pigeon with a mane ; the inhabitants of the Ile de France [ Mauritius ] call it pigeon hollandais ; the head , neck and chest are adorned with long pointed white feathers which it can raise at will ; the rest of the body , and the wings , are a fine deep violet ; the end of the tail is a purplish red . It is one of the finest species of its kind ... The second of these birds lives solitary in river valleys , where I have often seen it without being able to secure one . It eats fruit and fresh water molluscs .

The claim that the bird fed on river molluscs was criticised by Alphonse Milne @-@ Edwards and Emile Oustalet in 1893 , with the later agreement of James Greenway in 1967 , as blue pigeons are principally arboreal . It has since been pointed out that other mainly frugivorous pigeons , such as species of *Ptilinopus* and *Gallicolumba* , do occasionally eat molluscs and other invertebrates . The two species of *Nesoenas* have also been reported as eating freshwater snails , and one was seen hunting tadpoles . Milbert may in any case have been referring to arboreal snails , as extant blue

pigeons rarely land on the ground . A diet of snails would have provided the birds with calcium for egg production . Pretorius attempted to keep juvenile and adult Mauritius blue pigeons in captivity , but all his specimens died . This is probably because the species was almost exclusively frugivorous , like extant blue pigeons .

= = Extinction = =

The Mauritius blue pigeon coexisted with humans for 200 years . Its decline can be correlated with deforestation , which is also the main threat to extant blue pigeons . Little lowland forest was left on the island by 1859 . Frugivorous birds often need a large area for foraging and move between forest types to feed on different types of food , which grow irregularly . Other blue pigeons perch on bare branches , making them vulnerable to hunters .

Cossigny noted that the bird had become rare by 1755 , but were common 23 years before , and attributed the decline to deforestation and hunting by escaped slaves . On the other hand , Pierre Joseph Bonnaterre stated they were still common in 1790 . The Mauritius blue pigeon was not seasonally poisonous like the pink pigeon , which still survives on Mauritius today , but it was reputed to be . In spite of this , it was hunted for food , and some early accounts praised the flavour the bird . Extant blue pigeons are also considered good food , and are heavily hunted as a result , and it appears another population of them was hunted to extinction from the Farquhar and Providence islands . The Mauritius blue pigeon was easy to catch due to island tameness .

The last confirmed specimen was shot in the Savanne district in 1826 , but the 1832 report by Desjardins suggests that some could still be found in remote forests in the centre of the island . Edward Newton ( convinced that the pigeon still survived ) interviewed two inhabitants of Mauritius about the Mauritius blue pigeon in 1863 , and these accounts suggest that the bird survived until at least 1837 . The first interviewee claimed he had killed two specimens when Colonel James Simpson stayed on the island , which was 1826 ? 37 . The second was a woman who had last seen a bird around this time , and recalled hunts of it in approximately 1815 , in a swampy area near Black River Gorges , south western Mauritius :

When she was a girl and used to go into the forest with her father de Chazal , she has seen quantities of Pigeon Hollandais and Merles [ *Hypsipetes olivaceus* ] , both species were so tame they might be knocked down with sticks , & her father used to kill more that way than by shooting them , as she was a nervous child . Her father always warned her before he fired , but she would entreat him to knock the bird down with his stick & not to shoot it ? she said the last Pigeon Hollandais she saw was about 27 years ago just after she married poor old Moon , it was brought out of the forest by a marron . She said it was larger than a tame pigeon & was all the colours of the rainbow , particularly about the head , red , green & blue .

It can be concluded that the Mauritius blue pigeon became extinct in the 1830s . Apart from habitat destruction and hunting , introduced predators , mainly crab @-@ eating macaques , were probably also responsible .