

Ageing Egyptian Vultures

WILLIAM S. CLARK & N. JOHN SCHMITT

Most bird field guides that include Egyptian Vultures *Neophron percnopterus* show only the plumages of adults and juvenile (e.g., Porter et al. 1996, Bruun et al. 1986); several that attempted to show older immatures (e.g., Jonsson 1993, Gensbøl 1984, Porter et al. 1981) did not show all age classes nor show correctly the differences among juveniles and older immatures.

We agree with Cramp & Simmons (1980) and Mundy et al. (1992) that adult plumage is attained after 4 annual moults, however, their descriptions of the immature plumages are not accurate; second winter plumage is almost identical to and just as dark as the juvenile plumage, and not progressively paler as they state.

Herein we describe and show with photographs and illustrations the five annual plumages of Egyptian Vultures as they progress from juvenile to adult. These apply to Egyptian Vultures that breed north of the Sahara (including race *ginginianus*) and most likely as well to those that breed in sub-Saharan Africa.

Plumages of each age class are described in detail below beginning with juvenile; the main age-related characters are summarised in table 1.

Juvenile

Appears overall dark. Bare face skin is grey; beak has dark tip and pale yellow base. Down on crown is dark and comes to a point in a distinctive 'widow's

peak' on the fore crown, and dark nape and neck feathers are shorter than those of adults. Body and wing and tail coverts vary from grey-brown to brown to brownish-black, almost always with a variable number of diamond-shaped buffy marks on upperparts. Colourations on body and wing coverts are quite variable; some birds appear creamy on upperparts or underparts or both, thus appearing much like older vultures. Undertail and uppertail coverts are creamy and contrast with darker body. Bare crop patch on chest is pale grey. Flight feathers are dark brown, with a pale brownish cast to uppersides of secondaries.

Tail is greyish brown with paler tip. Legs are pale grey.



Juvenile Egyptian Vulture *Neophron percnopterus*. Darker individual. Pale undertail coverts contrast with darker belly. Note lack of moult. © William S. Clark, India, winter.



Juvenile Egyptian Vulture. Paler individual. Pale undertail coverts contrast with darker belly. Note lack of moult. © William S. Clark, Oman, November.

Second Winter

Birds appear overall dark like juveniles but now lack the pale diamond-shaped marks on upperparts, showing only pale feathers edges. They differ further in having new uppertail and undertail coverts that are the same brownish colour as the body feathers, whitish to pale yellow face skin, silvery cast to uppersides of new flight feathers, and a forecrown that is covered with a mixture of new short whitish down and old blackish down and lacks dark 'widow's peak.' New rectrices differ little from retained juveniles ones. Bare crop patch is most likely the same colour as the face skin in older immatures.

Third Winter

Birds are similar to younger birds but show a variable number (few to many) of new white feathers on wing and tail coverts, axillaries, body, and coverts, resulting in an overall mottled or piebald appearance; all or almost all new median underwing coverts usually form a noticeable white bar across each underwing. Greater underwing coverts usually remain mostly dark. Whitish crown and dark rear-crown and nape give head a monkish appearance. Face



Juvenile Egyptian Vulture. Uppersides of flight feathers show pale brown cast, and upperwing coverts show a few pale diamond-shaped marks. Pale uppertail coverts contrast with lower back. © William S. Clark, India, winter.

skin is pale yellow to yellow. Secondaries and inner primaries have silvery cast on outer webs, resulting in a pale band

across uppersides of flight feathers. Tail is a mix of retained grey-brown and new paler frosty-grey feathers.



2nd winter Egyptian Vulture. Overall dark like juveniles. Less advanced individual. Note moult of flight feathers, pale yellow face, and dark undertail coverts. © William S. Clark, India, winter.



2nd winter Egyptian Vulture. Overall dark like juveniles. More advanced individual. Note moult of flight feathers, pale yellow face, and dark undertail coverts. © William S. Clark, India, winter.



2nd winter Egyptian Vulture. Overall dark like juveniles. Note silvery cast to flight feathers, dark uppertail coverts, and whitish crown. © William S. Clark, India, winter.



3rd winter Egyptian Vulture. Less advanced individual. Note white band (median coverts) on underwing and whitish axillaries. © William S. Clark, India, winter.

Fourth Winter

These birds are beginning to resemble adults but show some dark retained feathers. Advanced individuals appear almost adult-like and retarded individuals much like third winter birds. Tail is a mix of old frosty-grey and new wholly or partially white feathers. Greater underwing coverts are usually mostly white. Neck shows a mix of white and dark feathers, usually forming a dark collar. Small black patches next to body

on upperwings (inner greater upperwing secondary coverts) may or may not be present in this plumage. Face is yellow.

Fifth Winter

Birds are essentially like adults except for progressively fewer retained dark feathers on neck, body, coverts, and tail. Face skin, base of beak, and legs are usually yellow.



3rd winter Egyptian Vulture. Note yellow face and mottled brown and white upperparts. New tail feathers are frosty-grey. © William S. Clark, India, winter.

EGYPTIAN VULTURE *Neophron percnopterus*
Small vulture with long thin beak. In flight wedge-shaped tail distinctive. There are five annual plumages, progressing from juvenile to adult.

[a] Adult. Black & white plumage. Bare face skin varies from yellow to orangish-yellow.

[b] Adult head. Blackish smudge under eye is not a sexual character.

[c] Juvenile. Overall darkish brown, with bluish face. Dark forehead feathers form a "widow's peak". Back and upperwing coverts usually show pale diamond-shaped markings.

[d] Second Winter. Similar to juvenile, but has mottled down on crown and lacks pale diamond-shaped spots on upperparts. Tail coverts are same colour as body, and forehead lacks the "widow's peak".

[e] Third Winter. Variable amount of whitish mottling overall, face is yellowish. Dark fringe on rear-crown and white crown give monk-like appearance.

[f] Fourth Winter. Almost like adult, but a few dark feathers throughout, especially dark neck.

[g] Fourth Winter. Almost like adult, but a few dark feathers throughout, especially dark neck. Darker bird, especially neck.

[h] Juvenile. Overall dark except for whitish undertail coverts.

[i-j] Juveniles. Variable amount of whitish on upperparts from none (i) to lots (j), and whitish uppertail coverts. Pale diamonds on upperwings often form bands.

[k] Second Winter. Like juvenile but uppertail coverts are brownish, uppersides appear more mottled, and uppersides of flight feathers show a greyish cast. Crown is now whitish.

[l] Second Winter. Like juvenile but undertail coverts are brownish.

Third winter plumage is highly variable; whitish feathers replace brownish ones over two years.

[m] Third Winter. Overall mottled whitish.

[n] Third Winter. Note wide white bars on median coverts; greater coverts are brown.

[o-p] Fourth Winter birds. Almost like adults, but some dark feathers retained, especially on neck, forming a collar. Greater underwing coverts are mostly white. Some new tail feathers are white. May or may not have black patch on inner greater upperwing coverts.

[q-r] Adults. Overall black and white, with rusty soiling on neck, parts of upperwings, and sometimes on belly.

[s] Silhouette. Wingtips are somewhat below wrists during glides.

Similar Species: Light-morph Booted Eagle, juvenile Bearded Vulture.





4th winter Egyptian Vulture. Adult-like but with darkish neck, some new white tail feathers, and a few dark body and covert feathers. This individual has uncharacteristically retained most of its greater underwing coverts. © William S. Clark, India, winter.

Adult

Bare face skin, base of lower mandible, and elongated cere are yellow to orange-yellow. Crown is covered by short white down. Nape and neck have long, lanceolate white feathers. Body, tail, and underwing, secondary upperwing, and tail coverts are completely white, but underparts, head and neck, back, scapulars, and some secondary upperwing coverts are usually sullied brown, sooty, or rusty (rufous); this apparently done on purpose. (Adults in zoos almost always appear pure white, probably because they do not have access to mud, iron ore rich soil, or burned material with which to adorn themselves.) Primary upperwing coverts and primaries are black. Outer webs of secondaries are white except for dark bases and tips, resulting in two narrow dark bands across the whitish uppersides of secondaries. Whitish outer webs of inner primaries are visible as rays on upperwings. Inner three greater secondary upperwing coverts on each wing are black. Flight feathers are black on undersides and contrast with white underwing coverts.

Sexing adults

The best way to sex breeding adults is by their face colour, orangish-yellow

on males and yellow on females. The difference is shown in the photograph of a pair on pages 104-105 in Newton and Olsen (1990). However, Mundy et al. (1992) agree with Levy that adults can be sexed by the black smudge below the eyes, males with the smudge, females without. We do



5th winter Egyptian Vulture. Some first plumage adults show a few dark retained immature feathers on body and underwing coverts. © William S. Clark, Oman, November.

not agree, as WSC has seen many nests, including a pair in the Tel-Aviv University zoo, in which this character was reversed or absent; it was also absent on both pairs of adults observed copulating in India. Vicky Meretsky and Jose L. Tella (pers. comm) have both studied breeding pairs of Egyptian Vultures in the field and agree that the black smudge does not correctly sex adults. Further, WSC has looked at specimens of adults in various museums and found that more females than males show the black smudge.

Another researcher has proposed a subtle difference in eye colour between the sexes of adults, but this would be of limited use in field identification.

Summary

Egyptian Vultures take four years to reach adult plumage, with four immature plumages. The juvenile and second winter plumages are both dark, the subsequent plumages are progressively whiter. The characters to properly age them have been presented herein and are summarised in table 1.

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Adult Egyptian Vulture. Individual with black mark on face. © William S. Clark, India, winter.

Table 1. Egyptian Vulture characters by age.

Character	Age				
	juvenile	2 nd winter	3 rd winter	4 th winter	adult
Bare face skin	Grey	Whitish to pale yellow	Pale yellow to yellow	Yellow	Yellow to orangish
Crown	Black	Mottled	White	White	White
Neck	Dark	Dark	Dark	Darkish	White
Upperwing coverts	Variable, diamond spots	Mottled brown & buffy	Mottled brown & white	Mostly white	White
Tail coverts	Pale	Dark	Mottled	White	White
Uppersides of flight feathers	Pale brown	Silvery	Whitish	Whitish	Whitish
Tail	Grey-brown	Grey-brown	New frosty-grey	New whitish	White

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W. S. Clark, 7800 Dasset Court, #101, Annandale, VA 22003, USA
N. John Schmitt, 11609 Alburis Avenue, Norwalk, CA 90650, USA



Adult Egyptian Vulture. Individual with no black mark on face. Note abnormal white feather on one wing. © William S. Clark, India, winter.