

1 An observation the Indian subspecies of Egyptian Vulture
2 *Neophron percnopterus ginginianus* in Djibouti.

3 *Houssein Rayaleh, Association Djibouti Nature, Nasser A. Othman Building, Marabout,*
4 *Djibouti;*

5 *Michael McGrady*, International Avian Research, Am Rosenhügel 59, Krems, 3500 Austria*

6 **corresponding author: mikejmcgrady@aol.com*

7 Egyptian Vulture (*Neophron percnopterus*) is globally endangered (IUCN 2020), and is declining in
8 most parts of its range (Botha *et al.* 2017). Three subspecies are recognized: *N. p. percnopterus*, *N. p.*
9 *ginginianus* and *N. p. majorensis*. The distribution of *ginginianus* is mostly in India and Nepal,
10 *majorensis* occurs in the Canary Islands, and *percnopterus* is distributed in Europe, Asia and Africa
11 (BirdLife International 2020). *N. p. percnopterus* and *N. p. ginginianus* distributions overlap in
12 northern India (e.g. Himachal Pradesh, Rajasthan) and Pakistan (Naoroji 2006, Angelov *et al.* 2013,
13 Mishra *et al.* 2018), and may interbreed (Mishra *et al.* 2018). Naoroji (2006) states that both *N. p.*
14 *percnopterus* and *N. p. ginginianus* are “locally migratory”, but it is unclear what is meant.

15 Globally, Egyptian Vultures are partial migrants, and migration is only ascribed to individuals of the
16 *percnopterus* subspecies that occur in more northern parts of the breeding range. Egyptian Vultures
17 from all subspecies typically breed only after attaining adult plumage (> 4 yrs of age). Prior to
18 entering the breeding populations Egyptian Vultures can wander extensively, and pre-adult birds
19 from migratory (i.e. *N. p. percnopterus*) populations dwell in “wintering” areas at least 1.5 yrs. before
20 they return to breeding grounds (Oppel *et al.* 2015). Resident and migrant Egyptian Vultures can
21 range over very large areas during the non-breeding season (Meyburg *et al.* 2004, García-Ripollés *et*
22 *al.* 2010, McGrady *et al.* 2019).

23 While conducting research on Egyptian Vultures and observing them at the open-air abattoir at
24 Tadjoura, Djibouti (11.78°N, 42.88°E) on 14 February 2020, we recorded a single adult individual that

25 appeared to be of the subspecies normally found on the Indian subcontinent (*N. p. ginginianus*),
26 almost 3000 km distant to the east (Naoroji 2006, BirdLife International 2020). We identified it by its
27 pale, cream-coloured bill, which is considered diagnostic (Brown & Amadon 1968, del Hoyo *et al.*
28 1994, Ferguson-Lees & Christie 2001, Naoroji 2006, Mishra *et al.* 2018); the bill had no dark-coloured
29 areas. This individual had a bright yellow face framed by whitish-yellow wrinkled skin, extending from
30 behind the ear to the lower mandible (Figure 1). Its claws were greyish-black. Its plumage was that
31 of a typical adult Egyptian Vulture (See Clark 1999, Forsman 1999, Naoroji 2006): the body feathers
32 were white, tinged with pinkish-brown, and the remiges were black-dark grey from below and grey-
33 whitish dorsally. From above the secondaries were rather white, consistent with the descriptions of
34 *ginginianus* by Naoroji (2006) and Mishra *et al.* (2018), and the upper wing coverts were dark, as was
35 the alula. Furthermore, although albino Egyptian Vultures have been recorded (Cortés-Avizanda
36 2010), the bird we observed was not an albino (nor was it leucistic) because of its otherwise normal
37 plumage and claw colour. The dark reddish eye is characteristic of adult Egyptian Vultures, and thus
38 not an indicator of albinism. In comparison with the other adults at the site that day, all of which
39 were apparently of the dark-billed (i.e. nominate) subspecies, its plumage was in the middle of the
40 range between the whitest individuals and those with cream-reddish tinges. We could not discern
41 any obvious size difference between it and the other vultures at the site. It was notably aggressive,
42 and pushed other vultures off carrion a number of times during the day.

43 Our observations occurred during 0700 – 1430, and the individual on which we report was there for
44 most of that period, though there was considerable coming and going of vultures. On that day, there
45 was a maximum of 36 vultures on the ground, but the actual number of individuals that visited the
46 site during the course of the day might have been considerably larger. At all times > three-quarters
47 of the vultures at the site were adults. The *ginginianus* individual was not observed during the next
48 three mornings (approx. 0800 – 1200), when we visited the site.

49 Apart from our observations at the abattoir, which was visited by dozens of vultures every day, we
50 regularly saw single and groups of Egyptian Vultures as we travelled around the country. Mostly

51 those sightings were near human settlements surrounded by rugged terrain, and agree with Londei's
52 (2018) assertion that Egyptian Vultures are rather common in Djibouti, especially in areas of good
53 nesting habitat (cliffs) near human settlements. Almost all observations of Egyptian Vultures away
54 from the abattoir were too distant to see bill colour clearly.

55 This is not the first record of an Egyptian Vulture with a pale bill in the Horn of Africa, a similar
56 (apparently different) individual was recorded in Tadjoura in December 2017 (Londei 2018), and
57 another individual was seen in Ethiopia in 2010 (Angelov *et al.* 2013). Additionally, a pale-billed
58 individual was observed on Socotra (Porter & Suleiman 2012), though those authors considered that
59 bird to be of the nominate race with abnormal pigmentation of the beak and claws.

60 Observations of vagrants and rarities are of interest to many bird enthusiasts. Angelov *et al.* (2013),
61 however, downplayed their observation's curiosity value, and initiated a discussion about Egyptian
62 Vulture ranging behaviour, dispersal and movement ecology, which was then picked up by Mundy
63 (2014), and Londei (2018).

64 Angelov *et al.* (2013) concluded that the bird they observed was *N. p. ginginianus*, and Mundy (2014)
65 agreed and considered the same was the case for the bird seen by Porter & Suleiman (2012). Both
66 Angelov *et al.* (2013) and Mundy (2014) considered the most likely explanation for the occurrence of
67 *ginginianus* so far from its main distribution to be that some few individuals make long-distance
68 movements. They seem to think that a route via the Straits of Hormuz is most likely, but in reference
69 to movement Mundy (2014) points out Egyptian Vultures can likely do "whatever they want".

70 Londei (2018) also thought that the pale-billed vultures in the Horn of Africa are the result of long-
71 distance movements by those individuals or their forebears. However, focusing on the existence of
72 darker areas of the bill in both the Ethiopian bird and the bird he observed, speculated that those
73 birds might be *percnopterus-ginginianus* hybrids produced in north-west India, where the subspecies
74 overlap, or the descendants of hybrids. In discussing that hypothesis, Londei (2018) further
75 postulated that birds of mixed parentage might exhibit bill colour similar to *ginginianus*, and a

76 willingness to migrate (as is seen in a portion of the *percnopterus* population). Angelov *et al.* (2013)
77 and Mundy (2014) implicitly or explicitly further recognize the possibility that emigrants might settle
78 and breed with local resident individuals, and so don't argue against Londei's (2018) hypothesis of
79 hybridization, at least locally.

80 The beak of the bird we observed was homogeneously cream-coloured with a slight pinkish wash
81 (Figures 1). Published descriptions of beak colour in *ginginianus* vary, but suggest it to be
82 homogeneous (e.g. del Hoyo *et al.* 1994, Naoroji 2006, Porter & Suleiman 2012, Angelov *et al.* 2013,
83 Londei 2018). However, the descriptions and photographs of the birds observed by Angelov *et al.*
84 (2013) and Londei (2018) are of heterogeneous beak colouration, a condition suggested by Ferguson-
85 Lees & Christie (2001) to exist amongst some *ginginianus* birds. Despite the confusion that arises
86 from the various characterisations of beak colour by others, the bird we observed fits perfectly the
87 description of *ginginianus*.

88 Whether the birds described in this and the earlier publications were pure *ginginianus*, or some level
89 of hybridization first by mixed pairs in India as hypothesized by Londei (2018) remains an unresolved
90 question. We agree with the observation by Angelov *et al.* (2013) and the implication by Mundy
91 (2014) that the lack of records of *ginginianus* in Africa could be affected by the low number of
92 observers in most places. Because nothing is known about the individual that we sighted, it does
93 little to settle the speculative possibilities discussed by Angelov *et al.* (2013), Mundy (2014) and
94 Londei (2018). However, new information, such as this observation, about Egyptian Vultures serves
95 to frame that speculation more closely.

96 Additionally, the manner in which pale-billed phenotype arrived in Africa is also unresolved.
97 Assuming the pale-billed birds are indeed some product of *ginginianus* and not an entirely locally-
98 produced morph/mutation, the birds observed in the Horn of Africa must be the result of rather rare,
99 long distance movements by some undetermined route, either by individuals spanning one or many
100 seasons or the stepwise advance of the *ginginianus*-type across Arabia spanning generations.

101 Although Egyptian Vultures avoid water crossings, they do make them (e.g. Bab el Mandeb: Welsh &
102 Welsh 1988, 1998; Straits of Hormuz; [http://egyptianvultureoman.blogspot.com/2018/10/in-](http://egyptianvultureoman.blogspot.com/2018/10/in-january-2018-we-fit-satellite.html)
103 [january-2018-we-fit-satellite.html](http://egyptianvultureoman.blogspot.com/2018/10/in-january-2018-we-fit-satellite.html)). The dearth of observations of migrating Egyptian Vultures (of
104 any subspecies) near the head of the Arabian Gulf (O. Al Sayed pers. comm.) points to passage via
105 that route being also limited. Despite the rarity of such movements (via any route) the truth in
106 Mundy's (2014) statement that vultures could "do what they want" is obvious, given that vultures
107 can make long migratory movements (e.g. Buechley *et al.* 2018a, b), and non-migratory and
108 migratory individuals can range widely (García-Ripollés *et al.* 2010, McGrady *et al.* 2019).
109 Nonetheless, and especially in light of the low number of observers in the Horn of Africa, it is
110 remarkable that three observations of *ginginianus* have been made, and may suggest their
111 occurrence to be more common. Understanding how the pale-billed phenotype arrived in Africa
112 might be facilitated by observational effort aimed at territory-holding adults and birds at communal
113 gatherings (e.g. roosts and waste disposal sites) in Arabia.

114 Mundy (2014) also mentions that the occurrence of pale-billed birds could have been facilitated by
115 escapes from private collections in the Middle East. Collections that include Egyptian Vultures exist
116 in the region and an unknown proportion of those captive birds have pale bills (A. Al Sharaf pers.
117 comm.), though we know of no cases of escapes or releases of those birds. Indeed, the only releases
118 of such captive birds of which we are aware was of four individuals confiscated in Bahrain and
119 released in Oman in 2017. All of those birds were of the nominate subspecies.

120 Finally, we could not eliminate the possibilities that the three observations (Angelov *et al.* 2013,
121 Londei 2018, and this one) might be of one, two or three individuals. Current tracking by us
122 (unpublished) and McGrady *et al.* (2019) show that Egyptian Vultures in Djibouti can indeed range
123 over distances larger than the ca 125 km between Tadjoura and the Ethiopian observation, and the
124 minimum age of the bird in 2020, if it was the same as that seen in 2010 (i.e. ≥ 14 yrs.) would be well
125 within values for Egyptian Vulture longevity (Grande *et al.* 2009). However, we think that it is highly
126 improbable that our observation was of either of the individuals observed earlier. The main reasons

127 for this are that the chance of such repeat observations in the region are low, and that the earlier
128 observations were of birds with darker bills and wing feathers.

129 Although breeding Egyptian Vultures have not been surveyed in Djibouti, it seems that the country
130 may be a stronghold because food availability is sufficient, human activity in rural areas revolve
131 around pastoralism, and there appears to be a general lack of many threats faced by Egyptian
132 Vulture elsewhere in their distribution (e.g. electrocution, NSAIDs, persecution, etc., Botha *et al.*
133 2017). Together, the three sightings of *ginginianus*-types in the Horn of Africa and the Horn's
134 apparent stronghold status point to perhaps an underappreciated flow of that phenotype from India
135 into Africa. Finding pale-billed birds at Arabia, and determining whether they are breeders or
136 passage birds would shed some light on this current mystery.

137 **Acknowledgements**

138 Funding from the Greater Los Angeles Zoological Association and Hawk Mountain Sanctuary enabled
139 our research. P. Mundy provided helpful comments on an early draft.

140 **Literature cited**

141 Al Fazari, W.A. & McGrady, M.J. 2016. Counts of Egyptian Vultures *Neophron percnopterus* and other
142 avian scavengers at Muscat's municipal landfill, Oman, November 2013–March 2015.
143 *Sandgrouse* 38: 99–105.

144 Angelov, I., Abdu, B., Terziev, N. & Zelleke, S. 2013. Possible sighting of the Indian subspecies of the
145 Egyptian Vulture *Neophron percnopterus ginginianus* in Africa. *Vulture News* 64: 44–49.

146 Angelov, I., Bougain, C., Schulze, M., Al Sariri, T., McGrady, M. & Meyburg, B.-U. 2020. A globally-
147 important stronghold in Oman for a resident population of the endangered Egyptian Vulture
148 (*Neophron percnopterus*). *Ardea* 108: 1–10.

149 BirdLife International. 2020. Species factsheet: *Neophron percnopterus*. Downloaded from
150 <http://www.birdlife.org>. Cambridge, UK. Accessed 27/02/2020.

- 151 Botha, A.J., Andevski, J., Bowden, C.G., Gudka, M., Safford, R.J., Tavares, J. & Williams, N.P. 2017.
152 *Multi-species action plan to conserve African-Eurasian vultures* (Vulture MsAP). Raptors MOU
153 Technical Publication. [www.cms.int/raptors/sites/default/files/publication/vulture-
msap_e.pdf](http://www.cms.int/raptors/sites/default/files/publication/vulture-
154 msap_e.pdf). Convention on Migratory Species. Abu Dhabi, UAE. Accessed 27/02/2020
- 155 Brown, L.H. & Amadon, D. 1968. *Eagles, hawks and falcons of the world*. Country Life Books, London.
- 156 Buechley, E.R., McGrady, M.J., Çoban, E. & Şekercioğlu, Ç.H. 2018a. Satellite tracking a wide-ranging
157 endangered vulture species to target conservation actions in the Middle East and East Africa.
158 *Biodiversity and Conservation* 27: 2293–2310.
- 159 Buechley, E.R., Opper, S., Beatty, W.S., Nikolov, S.C., Dobrev, V., Arkumarev, V., Saravia, V., Bougain,
160 C., Bounas, A., Kret, E., Skartsi, T., Aktay, L., Aghababyan, K., Frehner, E. & Şekercioğlu, Ç.H.
161 2018b. Identifying critical migratory bottlenecks and high-use areas for an endangered
162 migratory soaring bird across three continents. *Journal of Avian Biology* 49: p.e01629.
- 163 Clark, W.S. 1999. *A field guide to the raptors of Europe, the Middle East, and North Africa*. Oxford
164 University Press, Oxford.
- 165 Cortés-Avizanda, A.C., Ceballos, O., Urmeneta, A. & Donazar J.A. 2010. First case of albinism in
166 Egyptian Vultures. *Journal of Raptor Research* 44: 328–330.
- 167 del Hoyo, J., Elliott, A. & Sargatal, J. (Eds) 1992. *Handbook of the birds of the world. Vol. 2*. Barcelona:
168 Lynx Edicions, Barcelona.
- 169 del Hoyo, J. & Collar, N.J. 2014. *Handbook of the birds of the world BirdLife International illustrated
170 checklist of the birds of the world. vol 1*. Lynx Edicions and BirdLife International, Barcelona
171 and Cambridge.
- 172 Ferguson-Lees, J. & Christie D.A. 2001. *Raptors of the world*. A&C Black, London.
- 173 Forsman, D. 1999. *The raptors of Europe and the Middle East*. London: T & AD Poyser London.

174 García-Ripollés, C., López-López, P. & Urios, V. 2010. First description of migration and wintering of
175 adult Egyptian Vultures *Neophron percnopterus* tracked by GPS satellite telemetry. *Bird Study*
176 57: 261–265.

177 Grande, J.M., Serrano, D., Tavecchia, G., Carrete, M., Ceballos, O., Díaz-Delgado, R., Tella, J.L. &
178 Donazar, J.A. 2009. Survival in a long-lived territorial migrant: effects of life-history traits and
179 ecological conditions in wintering and breeding areas. *Oikos* 118: 580–590

180 IUCN 2020. The IUCN Red List of Threatened Species. Version 2020-1. www.iucnredlist.org. IUCN,
181 Gland, Switzerland. Accessed 27/02/2020.

182 Londei, T. 2018. An Egyptian Vulture *Neophron percnopterus* with largely pale bill in Djibouti. *Vulture*
183 *News* 75: 33–35.

184 McGrady, M.J., Karelus, D.L., Rayaleh, H.A., Sarrouf Willson, M., Meyburg, B.-U., Oli, M.K. & Bildstein,
185 K. 2019. Home range and movement of Egyptian Vultures in relation to rubbish dumps in
186 Oman and the Horn of Africa. *Bird Study* 65: 544–556.

187 Meyburg, B.-U., Gallardo, M., Meyburg C. & Dimitrova, E. 2004. Migrations and sojourn in Africa of
188 Egyptian Vultures (*Neophron percnopterus*) tracked by satellite. *Journal of Ornithology* 145:
189 273–280.

190 Meyburg, B.-U., McGrady, M.J. & Sarrouf Willson, M. 2019. Oman’s resident Egyptian Vulture
191 *Neophron percnopterus* population appears much larger than estimated. *British Birds* 112:
192 535–540.

193 Mishra, S., Kumar, A. & Kanaujia, A. 2018. A review on subspecies of Egyptian Vulture. *Journal on*
194 *New Biological Reports* 7: 60 – 67.

195 Mundy, P.J. 2014. Egyptian Vultures and the principle of subspecies in vultures. *Vulture News* 66: 60–
196 65.

197 Naoroji, R. 2006. *Birds of prey of the Indian subcontinent*. Christopher Helm, London.

198 Opiel, S., Dobrev, V., Arkumarev, V., Saravia, V., Bounas, A., Kret, E., Veleviski, M., Stoychev, S. &
199 Nikolov, S.C. 2015. High juvenile mortality during migration in a declining population of a
200 long-distance migratory raptor. *Ibis* 157: 545–57.

201 Porter, R.F. & Suleiman, A.S. 2012. The Egyptian Vulture *Neophron percnopterus* on Socotra, Yemen:
202 population, ecology, conservation and ethno-ornithology. *Sandgrouse* 34: 44–62.

203 Welch, G.H. & Welch, H. 1988. The autumn migration of raptors and other soaring birds across the
204 Bab-el-Mandeb Straits. *Sandgrouse* 10: 26–50.

205 Welch, G.H. & Welch, H. 1998. Raptor migration Bab al Mandab, Yemen — Spring 1998. *Phoenix* 15:
206 11–12.

207

208 **Figure captions**

209 **Figure 1.** *Neophron percnopterus ginginianus* observed at Tadjoura, Djibouti on 14 February 2020.

210 Photo by H. Rayaleh.



211

212