

Threatened Birds of Asia:

The BirdLife International Red Data Book

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INDIAN VULTURE

Gyps indicus

Critical ■ A1c,e; A2c,e

Endangered □ —

Vulnerable □ C1



This newly recognised species is classified as Critical because it has suffered an extremely rapid population decline as a result of epidemic disease, compounded by poisoning, pesticide use and changes in the processing of dead livestock.

DISTRIBUTION The Indian Vulture (see Remarks 1) breeds in south-east Pakistan (where it is rare) and peninsular India south of the Gangetic plain, north to Delhi, east through Madhya Pradesh, south to the Nilgiris, and occasionally further south (Ali and Ripley 1968–1998, Brown and Amadon 1968, Roberts 1991–1992, del Hoyo *et al.* 1994, Alström 1997, Grimmett *et al.* 1998; see Remarks 1 under White-rumped Vulture *Gyps bengalensis* for comments on the comprehensiveness of the following distribution account).

Considerable confusion over the taxonomy and identification of *Gyps* vultures has occurred (see Remarks 1), making it difficult to be sure of claims for this species. However, it appears to be allopatric or parapatric with Slender-billed Vulture *G. tenuirostris* (P. C. Rasmussen and S. J. Parry *in litt.* 2000). The regions where the two species' ranges abut (or potentially do so) are: Haryana, Delhi, north-eastern Rajasthan, northern Madhya Pradesh, northern Orissa, southern Uttar Pradesh, and southern Bihar. Records in the following account have been assigned to this species based on cliff nest-sites (see Ecology: Breeding) or the location relative to the range detailed above. The available evidence suggests that in regions west and south of the zone of potential confusion with Slender-billed Vulture, records can safely be assumed to refer to Indian Vulture, and these sites are listed in bold below. For localities within the zone of potential confusion, sites are only considered confirmed (and listed in bold) in the case of firm identification, usually museum specimens.

■ **PAKISTAN** The Indian Vulture is resident in the south-east, with records known from: **Kalinjhar**, undated (Roberts 1991–1992); **Karunjhar hills**, extreme SE Sind, undated (Roberts 1991–1992); **Kasbo**, undated (Roberts 1991–1992); **Koskhi**, Badin district, undated (Roberts 1991–1992); **Nagar Parker area**, Thar desert, undated (Roberts 1991–1992); **Vorao**, Tharparker district, undated (Roberts 1991–1992).

■ **INDIA** The species is resident south of the Gangetic plain, west to Rajasthan, east to Madhya Pradesh, and south to Kerala and Tamil Nadu. Records are known from localities in the following states:

■ **Rajasthan Ajmer** (Ajmere) including Taragurh hill, 1870s (Butler 1875–1877; also undated clutch, Oates 1902); **Aravalli mountains** (Rahmani 1996b); **Bayana**, September 2000 (Rahmani and Prakash 2000b); **Jodhpur**, undated specimen collected by Hume (Butler 1875–1877; also 1980s Satheesan 1999); **Keoladeo National Park**, 1999 (Prakash 1999a); Gaimookh cliffs on **Mount Abu** (Mount Aboo), 1867 (Butler 1875–1876; also undated specimen Barnes 1888–1891; undated Hume and Oates 1889–1890; undated specimen collected by Ali and Abdulali 1945a), also 1993–1994 (Prakash and Singh 1995); **Sambhar lake**, undated (Adam 1874); **Sariska Sanctuary**, 1988–1992 (Sankar *et al.* 1993); **Thar desert**, 1993–1994 (Rahmani 1997a);

■ **Gujarat Ajwa**, 1944–1946 (Ali 1954–1955); **Dabka**, Baroda district, 1944–1946 (Ali 1954–1955); **Deesa** (Disa), Palanpur, 1944–1946 (Ali 1954–1955); **Gir forest** (Sasan Gir), 1970–1972 (Grubh 1978); **Kathiawar**, undated specimen collected by Hume (Butler 1875–1877);

Khambat (Cambay), 1944–1946 (Ali 1954–1955); **Little Rann of Kutch** (Cutch), undated specimen collected by Hume (Butler 1875–1877), 1989–1992 (Shah *et al.* 1995); **Mandvi**, 1944–1946 (Ali 1954–1955); **Mozda**, December 1981 (Monga and Naoroji 1984); **Rajpipla**, December 1981–January 1982 (Monga and Naoroji 1984); **Shoolpaneshwar Wildlife Sanctuary**, 1989–1992 (Desai *et al.* 1993); **Songadh**, Navsari district, 1944–1946 (Ali 1954–1955); **Tappar**, January 2000 (Varu 2000); **Vadodara** (Baroda), undated clutch (Baker 1932–1935); **Vaghjipur**, Mehsana district, 1944–1946 (Ali 1954–1955);

■ **Delhi** Sohna, south of the city, 1980s (Vyas 1996), and Delhi aerodrome, December 1981–December 1982 (Ali and Grubh 1984), records in Delhi being presumed to refer to Indian rather than Slender-billed Vulture;

■ **Uttar Pradesh** Agra, 1986 (Satheesan 1988, 1989a, 2000a), and Hapur, January 1998 (Prakash and Rahmani 2000), records being presumed to refer to Indian rather than Slender-billed Vulture;

■ **Madhya Pradesh Bandhavgarh National Park**, 1999 (*per* S. M. Satheesan *in litt.* 2000); **Kanha National Park**, November 1981 (Newton *et al.* 1986); **Khurai**, Sagar district, October 2000 (*per* S. M. Satheesan *in litt.* 2000); **Mathar**, Bhopal, January–September 1938 (Ali and Whistler 1939–1940); **Mhow**, 1927–1929 (Briggs 1931); **Pachmarhi** (Puchmuree), undated (Hume and Oates 1889–1890), October 1984 (Satheesan 1988); Gwalior, 1980s (Satheesan 1999); **Bandhavgarh National Park**, 1986–1990 (Tyabji 1994); **Sehore**, Bhopal, 1900s (Whitehead 1911);

■ **Maharashtra Ahmednagar**, 1870s (Fairbank 1876); **Ajanta** (Ajunta), undated (Hume and Oates 1889–1890); **Barda hills**, undated (Dharmakumarsinhji 1955); **Girnar mountain hills**, undated (Dharmakumarsinhji 1955); **Khandala**, 1879–1881 (Davidson 1882); **Khandesh**, undated (Davidson 1882, Barnes 1888–1891), also undated clutch (Baker 1932–1935); south **Konkan** district, 1870s (Vidal 1880); **Mahabaleshwar**, 1879–1881 (Davidson 1882); **Mumbra**, near Thani, 1924–1936 (Ali and Abdulali 1936–1939); **Nashik** (Nassick), undated specimen (Barnes 1888–1891); **Naywi**, Sholapur district, 1870s (Davidson and Wenden 1878); Bhameir fort, **Nizampur**, 1879–1881 (Davidson 1882); **Panshet dam**, 1980s (Gole 1988); **Perseek hills**, 38 km from Bombay (Mumbai), undated (Hume and Oates 1889–1890); **Pimpalnir**, 1879–1881 (Davidson 1882); **Pune** (Poona), undated clutch (Baker 1932–1935); **Ratnagiri**, undated (E. A. Butler 1881); **Sahyadri mountains**, 1879–1881 (Davidson 1882); **Shatrunjaya hill**, undated (Dharmakumarsinhji 1955); Satara cliffs, **Sina valley**, Sholapur district, 1870s (Davidson and Wenden 1878); **Tadli**, 1870s (Davidson and Wenden 1878);

■ **Karnataka Kanara** district, Gairsoppa falls, December 1893 (Davidson 1898a); **Londa**, January–March 1938 (Koelz 1942, Ali and Abdulali 1951); **Nagarhole National Park**, January 2000 (Sarath 2000); Devarayana Durga forest, **Tumkur**, 1996 (Prakash and Rahmani 2000);

■ **Kerala Kumili**, January–December 1933 (Ali 1935–1937); **Maraiyur**, January–December 1933 (Ali 1935–1937); **Padagiri**, January–December 1933 (Ali 1935–1937); **Periyar Sanctuary**, 1954 (Robertson and Jackson 1992); **Wynaad** region, March–May 1881 (Davison 1883);

■ **Tamil Nadu Bangalore**, undated specimen (Gurney 1864; also April 1984 Satheesan 1990); **Coimbatore**, undated (Badshah 1968); **Gya**, undated clutch (Baker 1932–1935); **Jog falls**, Mysore, February 1940 (Ali and Whistler 1942–1943, Ali and Abdulali 1945); **Kodaikanal**, 1866 (Fairbank 1877); **Kukal**, April 1929–May 1930 (Whistler and Kinnear 1931–1937); **Mudumulai Wildlife Sanctuary**, 1994–1995 (Gokula and Vijayan 1996), 1998–1999 (Satheesan 2000a, S. M. Satheesan *in litt.* 2000); **Nagercoil**, undated (Baker and Inglis 1930); **Nilgiri hills**, March–May 1881 (Davison 1883), also undated clutch (Baker 1932–1935), undated (Satyamurti 1970) and recent reports from Masinagudi, Gudalur, Coonoor and Naduvattum (Thirumurthi and Balaji 1999); **Palni hills**, undated (Satyamurti 1970); **Shevaroy hills**, April 1929–May 1930 (Whistler and Kinnear 1931–1937), also undated clutch (Baker 1932–1935); **St Thomas's Mount**, April 1929–May 1930 (Whistler and Kinnear 1931–1937); **Udagamandalam** (Ootacamund, Ooty), undated clutch (Baker 1932–1935);

■ **Andhra Pradesh Aurangabad**, 1931–1932 (Ali and Whistler 1933–1934, Ali and Abdulali 1945a); **Coringa Wildlife Sanctuary**, 1990–1995 (Rao *et al.* 1996); **Daulatabad Fort**, 1931–1932 (Ali and Whistler 1933–1934, Ali and Abdulali 1945a); **Deglur**, 1931–1932 (Ali and Whistler 1933–1934, Ali and Abdulali 1945a); **Eswantaraopet**, undated (Ali and Whistler 1933–1934); **Hyderabad**, 1931–1932 (Ali and Whistler 1933–1934, Ali and Abdulali 1945a); **Kandahar**, 1931–1932 (Ali and Whistler 1933–1934, Ali and Abdulali 1945a); **Karimnager** (East) forest division, 1992–1995 (Nagulu *et al.* 1997); **Kaulas**, 1931–1932 (Ali and Whistler 1933–1934, Ali and Abdulali 1945a); **Mananur**, 1931–1932 (Ali and Whistler 1933–1934, Ali and Abdulali 1945a); **Mulkaram**, undated (Ali and Whistler 1933–1934); **Nelipaka**, 1931–1932 (Ali and Whistler 1933–1934, Ali and Abdulali 1945a); **Rajiv Gandhi National Park**, 1991–1995 (Rao *et al.* 1997); **Uttoor**, 1931–1932 (Ali and Whistler 1933–1934, Ali and Abdulali 1945a); **Waltair**, Vizagapatam district, May 1944 (Abdulali 1945).

Other locations for which the state is unknown, are: Mogra lake, near Muddapore (presumably Madhopur), undated (Hume and Oates 1889–1890);

POPULATION As with White-rumped Vulture, this species was common until very recently (although less so than that species in most areas), with severe population declines noted since the late 1990s.

Pakistan The Indian Vulture was regarded as a rare resident, being virtually absent from the Thar desert except for a few pairs nesting on outcrops in the Nagar Parker area; and “quite numerous” around cliffs in the Karunjhar hills in the extreme south-east of Sind in December 1980 (Roberts 1991–1992). Four were seen near Koskhi in Badin district in December 1978 (Roberts 1991–1992). Recent widespread declines in “vulture” populations (presumably including this species) have been recorded (see relevant account under White-rumped Vulture: Population).

India This species was regarded as rarer than the White-rumped Vulture in the Indian peninsula (Satheesan 1988). Surveys from 1970 to 1986 “at selected localities throughout the [Indian] region” found The Indian Vulture to be “much less common than reported earlier”; mistaken identification of immature White-rumped Vultures as this species (and presumably also Slender-billed Vulture) was implicated (Grubh 1983, 1986). Widespread recent population declines have, however, been recorded: see account for White-rumped Vulture for details of areas where “vultures” (undoubtedly encompassing both species) have declined. In northern and central India surveys in April–June 2000 found local extinctions of all *Gyps* vultures including this species in protected areas at Corbett (Uttar Pradesh); Gir and Little Rann of Kutch (Gujarat), and Keoladeo in Rajasthan; (Rahmani and Prakash 2000a,b), and symptoms of disease (head-drooping behaviour) were noted in 11% of individuals of this species (Prakash 2000).

Notes on population sizes and trends at specific localities include:

Delhi “Large numbers” of “Long-billed Vulture” (presumably Indian Vulture) used to be seen, although they were described as “not uncommon” in low hilly and rocky areas such as Sohna, south of the city, in winter, but “never over the city” (Vyas 1996). However, these populations “are dwindling fast” (Satheesan 1999). The area between Delhi, Agra (Uttar Pradesh) and Bharatpur (Keoladeo National Park, Rajasthan) was estimated to hold “a few hundred” of (presumably) this species in 1990, but very few were estimated to remain in 2000 (Satheesan 2000c).

Uttar Pradesh “Large numbers” (of presumably this species rather than Slender-billed Vulture) were regularly observed during 1980–1986 in Agra, but populations were “dwindling fast” (Satheesan 1988, 1989a, 1999). Near Hapur, only 10–12 individuals of a mixed flock of this and White-rumped Vulture were found in January 1998 in an area which held “thousands a couple of years ago” (Prakash and Rahmani 2000).

Rajasthan This species was said to be very common at Sambhur lake, where it was attracted to “great numbers of camels and bullocks which die here” (Adam 1874). In Sariska Tiger

Reserve it was estimated to be a fairly common breeder during 1988–1992 (Sankar *et al.* 1993). In the Thar desert, it probably nested near Dhorimanna (Rahmani 1997a), and it nested commonly during 1993–1994 in the Aravalli mountains; in both areas it was found to be commoner in winter than summer (Rahmani 1996b, 1997a). “Large numbers” of this species used to be seen in Jodhpur, but populations “are dwindling fast” (Satheesan 1999).

In Keoladeo National Park, the species has declined by over 97% in a decade: 816 individuals (28 birds per km²) were found in 1985–1986, but only 25 (0.86 birds per km²) by 1998–1999 (Prakash 1999a). In September–early December 1999 only one individual was observed in the park, and no nest was found inside the park, although two were found in the vicinity (Risebrough 1999). The proportion of the population found in a sick state rose from <5% in 1996 to 100% in July 1999 (Prakash 1999a; see account for White-rumped Vulture: Population). At a colony in Bayana, 50 km south-west of Bharatpur, over 1,000 nests were estimated in the early 1980s, but only 75 nests were recorded in 2000, many individuals showed symptoms of disease, and 50 individuals of all ages were found dead between May and September 2000; villagers reported declines of 80% in the last five years, with most deaths being in the dry summer months (Rahmani and Prakash 2000b).

Gujarat At Gir forest, the population in 1970–1972 was estimated to be about 35 individuals in the dry season (November to May) and 28 in the wet season (June–October) (Grubh 1978). The species was considered fairly common around Mozda (Monga and Naoroji 1984) and uncommon at Shoolpaneshwar Wildlife Sanctuary (Desai *et al.* 1993); eight were seen in a mixed-species flock near Tappar, in January 2000 (Varu 2000).

Madhya Pradesh This species was once considered to be “very common throughout” (Swinhoe and Barnes 1885), and it was still widespread in the 1950s (Hewetson 1956). “Large numbers” used to be sighted in Pachmarhi, where Osmaston (1922) found it to be common, and also at Gwalior (presumably this species rather than Slender-billed Vulture) (Satheesan 1999). It was regarded as a resident breeder in Bandhavgarh National Park (Tyabji 1994; records presumably referring this species); common around Bhopal (Ali and Whistler 1939–1940); uncommon in Kanara district, where it bred at Gairsoppa falls (Davidson 1898a); uncommon at Sehore, Bhopal (Whitehead 1911); and rare in Kanha Tiger Reserve (Newton *et al.* 1986).

Maharashtra Indian Vultures were described as common, especially in large coastal villages (Vidal 1880); abundant south of Pimpalnr, and at Bhameir fort in Nizampur (clutches collected) in western Khandesh (Davidson 1882); “not uncommon” in districts with high cliffs in the Deccan and South Mahratta (E. A. Butler 1881); and “moderately common” in Sholapur district (Davidson and Wenden 1878). Recent declines of vultures in Bombay at least presumably also refer to this species (see under White-rumped Vulture).

Karnataka About 40–50 individuals of this species were seen in a mixed-species flock feeding on an elephant carcass in Nagarhole National Park in January 2000 (Sarath 2000). At a colony 6 km east of Tumkur, eight nests of this species were active on a cliff-face in 1991 and this number remained constant for several years, but the colony was abandoned in 1996 (Prakash and Rahmani 2000). Furthermore, no individuals have been seen in south Karnataka since 1996 by at least one observer (Prakash and Rahmani 2000).

Kerala The species was stated to be “not common or abundant” in the low country and hills, with apparently no breeding record known (Ali 1969); it was considered “not very common” in the Wynaad region in 1881 (Davison 1883), but none was seen there during surveys in 1985–1988 (Zacharias and Gaston 1993). It was recorded at Periyar in 1933 and regularly in 1954, but not subsequently (Robertson and Jackson 1992).

Tamil Nadu This species was found to be “somewhat rare” in southern India, breeding on cliffs on the northern face of the Nilgiri hills, and recorded rarely from the base of the Palni (=Palani) hills (Fairbank 1877; also Satyamurti 1970). It was “occasional” in the Nilgiri hills (Davison 1883); a few pairs nested at Jog falls, Mysore, in 1935 (Ali and Whistler 1942–1943);

and it was “apparently rare” in Travancore (=southern Kerala and southern Tamil Nadu) with a single specimen from Nagercoil (Baker and Inglis 1930), although it was reported to be “generally distributed in small numbers in the district”, e.g. 15 at Padagiri on a Nilgiri tahr *Hemitragus hylocrius* carcass, but not known to breed (Ali 1935–1937). None was seen in Kanyakumari district around Nagercoil during 15 months in 1995–1997 (S. H. M. Butchart *in litt.* 2000). It was regarded as resident in Mudumulai Wildlife Sanctuary (Gokula and Vijayan 1996); and 25 were seen in a mixed-species flock on carcasses near Bangalore in April 1984 (Satheesan 1990).

Andhra Pradesh This species was one of the commonest vultures around Hyderabad, and probably bred at Daulatabad Fort in 1931–1932 (Ali and Whistler 1933–1934); it was common at Waltair, Vizagapatam district in May 1944 (Abdulali 1945), and in Coringa Wildlife Sanctuary in 1990–1995 (Rao *et al.* 1996), and it was an abundant resident in Karimnager (East) forest division in 1992–1995 (Nagulu *et al.* 1997), and Rajiv Gandhi National Park in 1991–1995 (Rao *et al.* 1997).

ECOLOGY Habitat As with White-rumped Vulture (see relevant account), this species is found in cities, towns and villages near cultivated areas, and in open and wooded areas (Grimmett *et al.* 1998).

Food This species often associates with the White-rumped Vulture, and shares a similar diet (Grimmett *et al.* 1998; see relevant account under White-rumped Vulture). This species was found to be generally dominant to White-rumped Vultures (but subordinate to Eurasian Griffon) when feeding at carcasses in Gir forest, Gujarat, India (Grubb 1978), and elsewhere (Satheesan 1988), but Brown and Amadon (1968) stated that the White-rumped and Indian Vultures were equally dominant.

Breeding This species nests colonially at traditional sites during November–March (Ali and Ripley 1968–1998, Brown and Amadon 1968, del Hoyo *et al.* 1994, Alström 1997, Grimmett *et al.* 1998, Rasmussen and Parry 2000, *in press*). In India, nests are built on ledges on cliff-faces or rocky outcrops (Baker 1932–1935), and colonies are small, usually 2–12 pairs, apart from one which had 50 nests, at Taragurh hill, Rajasthan (Baker 1932–1935), and another of 30 pairs mentioned by Hume and Oates (1889–1890). In Pakistan, colonies of 3–16 nests occur on rocky outcrops up to 325 m (Roberts 1991–1992).

Rasmussen and Parry (*in press*) state that in western Rajasthan trees are apparently used where appropriate cliffs are evidently lacking. Presumably this is based on Mukherjee (1995), who listed “tree-tops” amongst the sites for nesting; however, no other reports of tree-nesting are known, and this may therefore be doubtful; it certainly requires verification. The available evidence suggests that Indian and Slender-billed Vulture are consistently separated ecologically by nesting habitat; indeed, given that these micro-habitats occur together throughout much of the range of the two species, it is perhaps surprising that their ranges appear to be allopatric or parapatric (P. C. Rasmussen and S. J. Parry *in litt.* 2000).

The breeding season in India is November–March, mainly December–January (Baker 1932–1935), and in Pakistan clutches are laid in December–January (Roberts 1991–1992). Clutches always consist of one egg (Barnes 1885, Hume and Oates 1889–1890, Brown and Amadon 1968, Roberts 1991–1992). The incubation period is estimated to be about 50 days (Brown and Amadon 1968).

THREATS The weight of evidence suggests that the catastrophic population declines suffered by this species are likely to have been caused by a disease factor, presumed to be a virus (see the relevant account for White-rumped Vulture, for which the threats are probably identical to those for this species). An exception may be that the nesting sites on cliffs favoured by this species are less likely to be susceptible to disturbance or destruction than nest-sites in trees as used by White-rumped and indeed Slender-billed Vultures.

MEASURES TAKEN See relevant account for White-rumped Vulture.

Protected areas This species breeds in a number of protected areas across the region, but perhaps in fewer than the White-rumped Vulture owing to the more restricted distribution of cliffs and rocky habitat (e.g. the nearest nesting sites to Keoladeo National Park, Rajasthan, India, lie 50 km away: Prakash 1999a).

Determination of field characters as a guide to future monitoring The field identification of the vultures in India was only recently elucidated by Alström (1997). This proved to be a very timely review, since the potential confusion with other vultures had not previously been appreciated. Indeed, the huge body of Indian ornithological literature is rich in sight records of vultures which are unsafe to accept owing to the newly recognised complexities of certain identification, in particular the difficulties of separating the two taxa *indicus* and *tenuirostris*, previously believed to be one species. The elucidation of field characters to separate these two is a cardinal measure in assessing their conservation status, and details are offered here (including this volume's frontispiece) as part of the process of making this information as widely available as possible (see Remarks 3).

MEASURES PROPOSED See relevant account for White-rumped Vulture, for which the same conservation measures are required.

Given the considerable confusion over the identification and taxonomy of this species and Slender-billed Vulture, a detailed study of museum specimens is required to check their identification and provenance in order to validate the presumed distribution of these forms. This should be supported with field surveys, particularly in the region where the ranges of the two forms abut (see Distribution) using the identification features best described by Alström (1997) and Rasmussen and Parry (in press).

REMARKS (1) This taxon and Slender-billed Vulture were initially described as separate species *G. indicus* (Scopoli 1786), and *G. tenuirostris* (Gray 1844), but since the early twentieth century they have been treated as subspecies and known as “Long-billed Vulture” *G. indicus* (Rasmussen and Parry 2000, in press). Confusion over the nomenclature and taxonomy has existed for a long time, exacerbated by the mistaken naming of a Pakistani population of Eurasian Griffon *G. fulvus* as a new race *G. indicus jonesi* (Whistler 1927, Rasmussen and Parry in press). Recent study of skins and photographs has shown that the two forms are “extraordinarily distinct” and are not, in fact, even each others' closest relatives (Rasmussen and Parry 2000, in press). Among the morphological distinctions are differences in: shape of the head, bill and nares; colour of the bill, cere, eye-ring, and feathering on the head and neck; structure and skin texture of the neck; structure and colour of feathers on the breast, mantle and wing-coverts in adults; structure of remiges, abdomen and thigh feathers; colour of the undertail-coverts; length and scutation of the tarsi; colour and curvature of the claws; and development of bare pectoral patches. Further differences are found in nesting habitat and eggshell texture (Rasmussen and Parry in press). Identification details for separating the two forms in the field were given in Alström (1997) and are refined in Rasmussen *et al.* (in press) (see Remarks 3). The names Indian Vulture *G. indicus* and Slender-billed Vulture *G. tenuirostris* have been proposed, as continued use of “Long-billed Vulture”, which only really fits *tenuirostris*, would generate confusion (Rasmussen and Parry 2000, in press). Confusion has also occurred over the distribution of the two forms, with Peters (1931–1987) claiming incorrectly that *indicus* occurs in Burma and South-East Asia.

(2) A claim of a bird at Pulu Khumri in Baghlan province, Afghanistan, in March 1972 (Smith 1974) is west of the known range of this species, and probably erroneous.

(3) Field characters distinguishing Indian Vulture *Gyps indicus* (found in much of India) from Slender-billed Vulture *G. tenuirostris* (of the sub-Himalayan terai through South-East Asia) are as follows: *Gyps indicus* has the bill and cere heavier, and pale in adults, while in

tenuirostris they are slender, elongate and mostly dark; *indicus* has a larger, rounded head largely covered by pale hair-like feathers and the neck with down, whereas *tenuirostris* has a smaller, more angular head, and the head and neck are nearly naked, with deeply wrinkled black skin in adults and patchy white down in juveniles; adult *indicus* have rounded, broad body feathers and wing-coverts, the latter with broad pale edges, whereas they are narrow, pointed and hardly patterned in all ages of *tenuirostris*; *indicus* has full, long feathering on the outer thighs whereas there is scant, short contour feathering in *tenuirostris*; and adult *indicus* has conspicuously pale claws (these are dark in all *tenuirostris*); in flight, *indicus* has broad wings with a straighter trailing edge, heavy body feathering and a pale vent, while *tenuirostris* has an incurved inner trailing wing edge, thinly feathered body with contrasting white downy thighs, and a dark vent (Rasmussen *et al.* in press; see frontispiece by J. Schmitt).