

The seven hundred and fifty-third Meeting of the Club was held in the Senior Common Room, South Side, Imperial College, London, S.W.7 on Tuesday, 22 May 1984 at 7 p.m. The attendance was 27 Members and 23 guests.

Members present were: B. GRAY (*Chairman*), P. J. BELMAN, Mrs. DIANA BRADLEY, D. R. CALDER, R. D. CHANCELLOR, P. J. CONDER, R. A. N. CROUCHER, J. H. ELGOOD, Sir HUGH ELLIOTT, A. GIBBS, Dr. J. G. GREENWOOD, D. GRIFFIN, P. HOGG, Revd. G. K. McCULLOCH, C. J. MEAD, Mrs. U. V. MEAD, Dr. J. F. MONK, Miss TERUYO OBA, J. G. PARKER, R. E. F. PEAL, R. C. PRICE, R. E. SCOTT, P. J. SELLAR, Prof. S. SOMADIKARTA, S. A. H. STATHAM, N. H. F. STONE and Lieut.-Col. T. C. WHITE.

Guests present were: Dr. S. AUTGAERDEN, A. BOOSEY, Miss J. B. BRACEY, Dr. A. E. CHANDLER, J. CHAPPELL, Mrs. P. CHAPPELL, D. M. COUZENS, Miss V. COX, S. L. CZAPSKI, Mrs. C. ELLIS, H. FOSKETT, Mrs. B. M. GIBBS, P. HAYMAN, I. LEWIS, Miss E. McCULLOCH, G. P. McCULLOCH, Mrs. I. McCULLOCH, Dr. AMICIA MELLAND, Mrs. ELIZABETH PEAL, Mrs. E. A. SCOTT, C. STILEMAN, Miss J. SUNTER and Miss S. M. D. YERBURGH.

Mr. Peter Hayman spoke on "Raptors and Identification Techniques" and illustrated his address with a number of his drawings of raptors and waders. He spoke especially on the need to consider shape and proportions and their effects on the overall appearance of a bird to be identified, rather than to concentrate unduly on the pattern of plumage colouring.

Recent records of the Ostrich *Struthio camelus* in Egypt

by Steven M. Goodman, Patrick F. Houlihan & Ibrahim Helmy

Received 19 August 1983

Nicoll (1919) and Meinertzhagen (1930) respectively were of the opinion that the Ostrich *Struthio camelus* had been extinct in Egypt for at least 70 and 100 years. Excluding the recent work of Brown *et al.* (1982), these views have been reiterated in every work which has dealt with the distribution of the Ostrich in North Africa, and in spite of a record to the contrary being published in 1959 (see below), it is still generally held that the bird is extinct in Egypt (Vaurie 1965, Cramp & Simmons 1977, Snow 1978). For this reason, the collection of an adult ♂ Ostrich, a chick and 2 fresh whole eggs in Egypt in 1967, in addition to a number of recent records, is of considerable interest. The purpose of this paper is to describe the collected specimens, their subspecific identity, and to summarize briefly Ostrich records in Egypt since the 18th century. The specimens described herein are in the Field Museum of Natural History (FMNH), Chicago, and were collected by a field team, which included Dr. Dale Osborn & IH, under the direction of Dr. Harry Hoogstraal (HH), Medical Zoology Department, NAMRU-3. Wherever possible we have used the gazetteer of Osborn & Helmy (1980) for Egyptian locality spellings and coordinates.

Description of recent specimens

The adult ♂ specimen was collected on 20 February 1967, along a tributary of Wadi Hareitra (22°05'N, 36°13'E), west-southwest of Gebel Elba, Sudan Administration, Egypt (FMNH 279307, HH original number 8185). The head, upper two thirds of the neck, sides of belly and thighs are naked except for a sparse white down, the forehead has a distinct horny shield, the body feathers are black, and the wings and tail white. No information is available on bare-part colours.

TABLE 1

Comparison of the body measurements of a collected *Struthio camelus* specimen (1967) with *S.c. camelus* and *S.c. syriacus*¹

Specimen or reference	Bill from gape (mm)	Bill from front of skull (mm)	Tail (mm)	Tarsus (mm)
FMNH 279307 (see text)	141	80	510	485 ²
Bannerman (1930) <i>camelus</i> ♂	138	—	490	450
Rothschild (1919) <i>camelus</i> ♀	140	83	540	530
<i>syriacus</i> ♂	132	75	330	400
<i>syriacus</i> ♀	111	65	440	400
Vaurie (1965) ³ <i>camelus</i> (n=7)	—	—	—	450-530 (490)
<i>syriacus</i> (n=6)	—	—	—	390-465 (420)

¹All birds adults and, unless noted, n=1 or not specified.

²Approximate.

³Ranges and means (in parentheses).

In his description of *S. c. syriacus*, Rothschild (1919) found this race virtually identical in plumage and bare-part colour to *S. c. camelus*, but distinctly smaller. *S. c. massaicus*, which presently inhabits portions of Kenya and Tanzania, is similar in size to *camelus* but lacks the distinctive shield on the forehead (Rothschild 1919, Snow 1978). In Table 1 we compare several measurements of *camelus* and *syriacus* from various sources with those of the collected specimen. Based on plumage, body measurements, and forehead shield, the collected specimen is clearly referable to *camelus*. Other measurements (mm) from the specimen not given in Table 1 include: wing 460 (approximately); longest toe without claw 165; the width of bill at posterior edge of nostril 49 and anterior edge of nostril 55. A partial skeleton of leg and toe elements (FMNH 107758), as well as the heart preserved in liquid (FMNH 107758), were saved.

The young bird was collected on the same day and locality as the adult mentioned above (FMNH 279306, HH original number 8186). Measurements (mm) include: bill from gape 55; exposed culmen (bill from anterior-most feathering on forehead) 29; width of bill at posterior edge of nostril 17; tarsus 90; tail 31.

TABLE 2

The egg dimensions of the two collected specimens of *Struthio camelus* (1967) compared with those of *S.c. camelus*, *syriacus* and *massaicus*

Specimen or subspecies	Greatest length (mm)	Greatest breadth (mm)
HH 8187 (see text)	165	142
HH 8188 (see text)	167	143
<i>camelus</i> (n=48) ¹	142-175 (158.5)	120-145 (131.0)
<i>syriacus</i> (n=13) ¹	135-148.5 (142.8)	111.5-122 (115.8)
<i>massaicus</i> (n=28) ¹	142-165 (154.5)	120-142 (127.5)

¹Measurements of subspecies after Schönwetter (1960), ranges and means (in parentheses).

Two whole fresh eggs were collected on 14 February 1967 at Wadi Yoider (22°17'N, 36°18'E), north of Gebel Elba, Sudan Administration, Egypt (FMNH 3480, HH original numbers 8187 & 8188). The maximum length and breadth of each egg are given in Table 2, and are compared to those of *camelus*, *syriacus* and *massaicus*. The reason *massaicus* is included is that Moreau (1934), using Lowe's identification (presumably by pore pattern), claimed that some Ostrich eggshell fragments of indeterminable age, found north of Kharga Oasis, were referable to *massaicus*, while in addition eggshell

fragments from Libya have been identified as *massaicus* (Bundy 1976). The measurement overlap is considerably less between *camelus* and *syriacus* than between *camelus* and *massaicus*, with *camelus* generally the largest. One of the collected eggs (HH 8188) is longer than the largest *massaicus*, whereas the other (HH 8187) is at the upper extreme length measurement of *massaicus* (Table 2). Based on size, the 2 collected eggs are referable to nominate *camelus*. We have not used pore pattern characters to identify the eggs to subspecies, because variation in size was sufficient for identification; but more importantly, the use of this character is not always reliable on the subspecific level (Sauer 1972). The fragments from Libya and the Western Desert of Egypt identified as *massaicus* need to be re-evaluated, but before this is done, the variation in pore pattern within the subspecies needs to be thoroughly studied.

Records of the Ostrich in Egypt

Western Desert. Pococke (1743) and Geoffroy Saint-Hilaire (1799) described the Ostrich as common in the mountains southwest of Alexandria. Sonnini (1800) saw fresh tracks in the desert near Bahariya Oasis and further reported that Ostriches were hunted in the country for plumes and fat. Browne (1806) found tracks between Alexandria and the Siwa Oasis in 1792, and in 1821 flocks of 10–15 individuals were observed in the same region (Minutoli 1824). In c. 1909, a Bedouin told Nicoll (1919), that Ostriches continued to nest in the Western Desert (locality not specified) until around 1844. Heuglin (1856: 305) stated (my translation), "I have never observed Ostriches in the Libyan Desert or in Middle Egypt north of Cairo". However, in his definitive work on the birds of northeast Africa, Heuglin (1873: 928) wrote (my translation), "The Ostrich still lives around the oases of Middle Egypt, from the Faiyum south and westwards to the oases of El Kharga and El Dakhla", although he provided no supporting evidence. Presumably Heuglin's modified view resulted from evidence of the Ostrich in the Western Desert coming to him after 1856, but whether the records were personal observations or reports of others is impossible to say. It was not until 1935 that the Ostrich was again reported in the Western Desert, when Al-Hussaini (1959) was informed that a bird had been caught at "Abou-al-Oql" (not located), somewhere midway between the Kharga and Dakhla oases. To our knowledge, this is the last published record of this species in Egypt west of the Nile.

Eastern Desert (excluding the extreme southeast). On 22 April 1816 Burckhardt (1822) observed 2 Ostriches between Cairo and Suez at "El Mograh". While describing the Egyptian avifauna, Russell (1842: 338) stated that the Ostrich "occasionally occurs in the extensive desert which borders the western shore of the Red Sea. . . ." Heuglin (1873) in 1854 encountered a group of 50–60 Ostriches, mostly young birds, near Korosko (22°36'N, 32°20'E), south of Aswan. In 1972 an Ostrich followed a camel caravan from the Sudan to (New) Ballana (24°23'N, 32°54'E), where it was shot by a Nubian hunter, stuffed and placed on top of his house (photographed by IH). In February 1975 IH found Ostrich tracks near Barqet Tokham (23°35'N, 33°25'E), c. 75 km southeast of Aswan. SMG learned in late March 1983 from the captain of the Aswan Frontier Patrol that he saw a ♀ Ostrich with 8 chicks in March 1982 in Wadi el Kharit (24°26'N, 33°03'E), c. 60 km northeast of Aswan.

Extreme southeast of Egypt. Heuglin (1859) considered Port Berenice ($23^{\circ}55'N$, $35^{\circ}28'E$) the Ostrich's northern limit in Egypt east of the Nile. Linant de Bellefonds (1868) found them to be common at Wadi Daffeti ($22^{\circ}13'N$, $34^{\circ}11'E$) in 1831. Schweinfurth (1865) saw them in early 1865 in the desert north of Gebel Elba, and further noted that a local tribe, the Bisharin, did not hunt Ostriches. In 1891, Floyer (1893) found it at Wadi Naam ($23^{\circ}18'N$, $34^{\circ}59'E$) and perhaps at Wadi Natash ($24^{\circ}20'N$, $34^{\circ}02'E$). (It is interesting to note that Wadi Naam means "Ostrich Valley" in Arabic.) Fahmy (1936) stated that the Ostrich could sometimes be found in the desert north of Gebel Elba, but gave no localities, numbers nor dates. In 1962, the late Dr. Vivi Täckholm, Botany Department, Cairo University, reportedly saw Ostriches between Gebel Elba and the Red Sea Coast (Darby *et al.* 1977). While travelling north of Halaib, east of Gebel Elba, Schreider & Schreider (1965) also observed this species.

Early in 1979, an expedition of Egyptian scientists visited the south-eastern portion of Egypt and observed Ostriches at several localities (Amer *et al.* 1980). They learned from a geologist whom they met, that he had shot 2 Ostriches at Wadi Naam in October 1979; and on 24 January 1979 they saw Ostrich tracks at Wadi Gemal ($24^{\circ}40'N$, $35^{\circ}06'E$), northwest of Port Berenice. When at Bir Shalatein ($23^{\circ}08'N$, $35^{\circ}36'E$), near the Red Sea Coast, they observed 2 separate flocks of Ostriches, one containing 6 adults and 10 young, the presence of the latter indicating that breeding had been recent and presumably in the general vicinity of Bir Shalatein. Amer *et al.* (1980) also reported this species near Wadi Diib ($22^{\circ}28'N$, $36^{\circ}06'E$), northeast of Gebel Elba.

Employees of the talc mine near Gebel Hamata ($24^{\circ}12'N$, $35^{\circ}00'E$) killed 6 Ostriches during the winter of 1961–62 (Dr. Mohammed Kassas) and another 2 in October 1978 (IH) in the general vicinity of the mine.

Other recent records include: tracks were observed in 1966 at Bir Murra ($22^{\circ}32'N$, $33^{\circ}54'E$), north of Wadi Allaqi (IH); in February 1973 one was reported killed in Wadi Abu Ghusun ($24^{\circ}27'N$, $35^{\circ}12'E$) (IH); in April 1981 tracks were noted at Hamra Dom ($22^{\circ}39'N$, $35^{\circ}39'E$) (IH); in April 1981 one was captured, photographed and released at Wadi Diib (IH); on 26 March 1983 1 adult ♀ and 1 immature ♂ were observed together in Wadi Hareitra and the weathered bones of at least 4 individuals were found in a hunter's camp (SMG); and on 29 March 1983 the remains of 2 Ostriches were found on the beach 4 km north Abu Ramad ($22^{\circ}21'N$, $36^{\circ}27'E$)—the birds had presumably been transported to the sea from the wadis north of Gebel Elba for skinning (SMG).

Discussion. On the basis of the accounts of 18th and 19th century travellers in Egypt, it is apparent that up until the second quarter of the 19th century, the Ostrich had an extensive distribution within the country. By around 1890, however, the bird had apparently disappeared from both the Western and Eastern deserts of Egypt. Early this century, before or during 1935 (Al-Hussaini 1959), the Ostrich began to repopulate the Western Desert, while the more recent records from the Gebel Elba region are from the Eastern Desert, suggesting that the species must have recolonized the country at least twice (assuming of course that Ostriches do not swim across the Nile). The birds entering the Western Desert might have come from the Darfur Province, Sudan, where a population still exists (see Wilson 1976).

Those on the eastern side could have come from the Kassala Province of Sudan, where Beckinsale (1920) in 1920 saw a group of 20, near Baramaiyu Station ($18^{\circ}35'N$, $36^{\circ}46'E$), south of Port Sudan. The possibility of the bird re-entering the Western Desert from Libya seems unlikely, for all recent reports of Ostrich in Libya are from its extreme southeastern corner along the Chad border (Toschi 1969).

A different explanation of its re-discovery in Egypt could be that the Ostrich has, in fact, always been present in Egypt in small isolated areas, and the hiatus of records between the last quarter of the 19th and early this century reflects merely a lack of observers rather than that of actual birds. However, several scientific expeditions visited these areas (particularly the Western Desert) in these intervening years, and they did not report any signs of Ostrich nor learn of their presence through the observant local Bedouins.

An Ostrich farm was established at Heliopolis, just outside Cairo, sometime around 1880 and was in existence at least until 1913 (Sclater 1895, Mercier 1898, Walter 1898, Raveret-Wattel 1913). In 1895 the farm had c. 1400 Ostriches, composed of the subspecies *camelus* and *molybdophanes* (Sclater 1895). One cannot rule out the possibility that some of these birds could have escaped and were able to reach the southeastern portion of the country. However, this seems unlikely, for the birds would have had to travel over 800 miles through the desert and across the Red Sea Mountains under rather rigorous conditions, or along the Red Sea Coast or in the Nile Valley where they would almost certainly have been observed. Further, this would not explain their appearance in the Western Desert, on the other side of the Nile.

It is impossible to estimate the number of wild Ostriches currently living in Egypt, but their stronghold appears to be in the Gebel Elba region. In order to secure this species' future in Egypt, measures need to be taken to relieve the pressure induced by human persecution. Perhaps this can best be achieved by setting aside areas where this species is known to nest as national wildlife refuges, and where general hunting would be unlawful.

Acknowledgements. We would like to thank Drs. John W. Fitzpatrick and David Willard (FMNH) for allowing us access to the Ostrich specimens under their care. Drs. Harry Hoogstraal and Robert W. Storer provided useful comments on an earlier draft. The Frank M. Chapman Memorial Fund of the American Museum of Natural History financed SMG's 1983 field work in southeastern Egypt and the Egyptian Wildlife Service, particularly Dr. Gamil Abdel Mowla Atta, provided logistic support. The work was supported by the Naval Medical Research and Development Command, National Naval Medical Center, Bethesda, Maryland, U.S.A. The opinions and assertions contained herein are the private ones of the authors and are not to be construed as official or as reflecting the views of the Department of Navy or of the naval service at large.

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Addresses: Steven M. Goodman & Patrick F. Houlihan, Bird Division, Museum of Zoology, University of Michigan, Ann Arbor, Michigan 48109, USA; Ibrahim Helmy, Medical Zoology Department, United States Naval Medical Research Unit Number Three (NAMRU-3), American Embassy, Cairo, Arab Republic of Egypt.



Goodman, Steven M., Houlihan, P F, and Helmy, I. 1984. "RECENT RECORDS OF THE OSTRICH STRUTHIO-CAMELUS IN EGYPT." *Bulletin of the British Ornithologists' Club* 104, 39–44.

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