

**SHORT COMMUNICATION**

**PHARAOH EAGLE-OWL *BUBO ASCALAPHUS* (SAVIGNY, 1809)  
(STRIGIFORMES, STRIGIDAE), THE “SHROUDED IN MYSTERY”  
OWL OF IRAQ AND IRAN**

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**ABSTRACT**

The easternmost extent of the Pharaoh Eagle-Owl *Bubo ascalaphus* (Savigny, 1809) distribution has remained enigmatic due to identification problems and lack of owl research. In Iraq, *B. ascalaphus* has been reported from only few localities in western Iraqi deserts; while its occurrence in Iran has not been reported before this study. In 2017–2020, several new records of *B. ascalaphus* in western through southeastern Iraq were made and a new distribution range in western Iran was confirmed. Furthermore, field identification, interspecific relationships and conservation status of *B. ascalaphus* in Iraq and Iran were comprehensively discussed.

**Keywords:** Conservation, Eagle-owl, Field identification, Iraq, Iran.

**INTRODUCTION**

The Pharaoh Eagle-owl *Bubo ascalaphus* (Savigny, 1809) is a nocturnal predator confined to desert habitats, arid plains, wadis and rocky cliffs in North Africa and the Middle East from Morocco south to the Gambia, Mali, Sudan and South Sudan, Eritrea, and in the Middle East from Syria to the south of Oman (Mikkola, 2013; del Hoyo *et al.*, 2014). Resident populations occur in Egypt, Israel, Jordan, Saudi Arabia, Kuwait, Qatar, United Arab Emirates, and Oman; vagrant in Bahrain and probably breeds in Yemen with some post-breeding dispersal and wandering in winter (Porter and Aspinall, 2010; Jennings, 2010; Blair *et al.* 2018; BirdLife International, 2020).

The status of *B. ascalaphus* in Iraq and Iran is enigmatic possibly due to identification problems with the polytypic Eurasian Eagle-owl *B. bubo* (Linnaeus, 1758) (see field identification). In Iraq, the occurrence of *B. ascalaphus* is not fully explored and probably confused with the sympatric *B. bubo* which is fairly common and breeds wherever it occurs, but mainly in northern Iraq (Sassi, 1912; Meinertzhagen, 1914; Ticehurst *et al.*, 1922; 1926;

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Moore and Boswell, 1956; Al-Dabbagh, 1998). Specimens obtained from Baghdad and Babylon provinces were all ascribed to the smaller race/subspecies *B. b. nikolskii* (Zarudny, 1905) by Allouse (1953). George and Mahdi (1969) listed *B. b. nikolskii* and *B. b. interpositus* (Rothschild and Hartert, 1910) from Iraq; however, Allouse (1961) mentioned that the exact *Bubo* races/subspecies occurring in Iraq were difficult to determine.

A voucher specimen of a male *B. bubo* collected from Al-Hadithah on the Euphrates River in western Iraq in November 1937 and deposited in the Chicago Natural History Museum was typically indicative to *B. ascalaphus* on the basis of its morphometrics: wing measures and colour pattern (Vaurie, 1960). Further investigation located that skin at the now field museum in Chicago; its total length was 48 cm; wing 364 mm and tail 195 mm which were perfect fit to *B. ascalaphus* (Al-Sheikhly, 2012). Later on, the occurrence of *B. ascalaphus* was confirmed in Wadi Al Ubayyadh, an arid area of rocky hills between Al Rahaliya–Nekheab districts and at Al-Raoudha area in Anbar province in western Iraq, where a breeding population was also established (Al-Sheikhly, 2012). Since then, no further field observations of *B. ascalaphus* in Iraq were made. Similarly, the status of *B. ascalaphus* in Iran has been obscure and taxonomically interfered with *B. bubo*, a fairly common resident in mountainous areas throughout Iran, but few birds (presumably from the northern populations) are also wintering to southeast Caspian lowlands (Scott and Adhami, 2006; Khaleghizadeh *et al.*, 2017). The latter also indicated that the large *B. b. interpositus* and *B. b. omissus* (Dementiev, 1933) occur along with the small subspecies e.g. *B. [bengalensis?] nikolskii* and *B. ascalaphus* which probably includes *B. paradoxus* (Domaniewski, 1933) from Pol-e-Khatum and elsewhere on Hari Rud (holotype in Warszawa Museum, locality is on Iran/Afghani border). Khaleghizadeh *et al.* (2017) however, did not provide further records (number of specimens and localities) of *B. ascalaphus*. They also indicated that the ranges of the large and small taxa of the polytypic *B. bubo* overlap and the subspecies occurring in Iran required revisions.

*Bubo ascalaphus* has an extremely large zoogeographical range and its population trend appears to be stable, and therefore, the species is evaluated as Least Concern by the International Union for Conservation of Nature (IUCN) (BirdLife International, 2020). However, the overall status of *B. ascalaphus* is not fully known and seems to be locally endangered by human persecution (Mikkola, 2013).

#### Species status

The original description of *B. ascalaphus* was done already by Savigny (1809) in Egypt and recent phylogenetic analyses based on mitochondrial and nuclear DNA sequences have confirmed that cytochrome *b* sequences of *B. bubo* and *B. ascalaphus* differed by an uncorrected *p*-distance of 3.5%. A sequence distance of more than 2% is indicative of species level distinction (Wink *et al.*, 2009; BirdLife International, 2020). However, often this distinct owl has been lumped together with *B. bubo* despite the distinct morphology. This has caused numerous misidentifications in the museum collections and handbook texts. Al-Sheikhly (2012) gave a detailed history of one originally wrongly identified specimen in the Chicago Museum collected from western Iraq in 1937. Some of West African bird books often list *B. bubo* as species occurring for instance in Senegal and the Gambia although all confirmed birds have been *B. ascalaphus*, instead (Mikkola, *in litt.*).

**Field identification**

*Bubo ascalaphus* is the smallest size Eagle-owl species in the region, has shorter ear-tufts and multiple different plumage characters including pale sandy/tawny-rufous coloration, unstreaked rufous-barred belly and distinct black borders on the facial disc (Cramp, 1985; Mikkola, 2013). Although *B. ascalaphus* wing measurements are from North Africa, the owl measured from western Iraq (e.g. Al-Sheikhly, 2012) with a wing of 364 mm falls well within the female/male measurements in Table (1). This further supports the fact that *B. ascalaphus* is monotypic as concluded by Crochet *et al.* (2015).

**Table (1):** Wing measurements (in mm) of four *Bubo bubo* subspecies, *Bubo bengalensis*, and *Bubo ascalaphus*. Compiled from Dement'ev *et al.* (1951), Vaurie (1965), and Weick (2006).

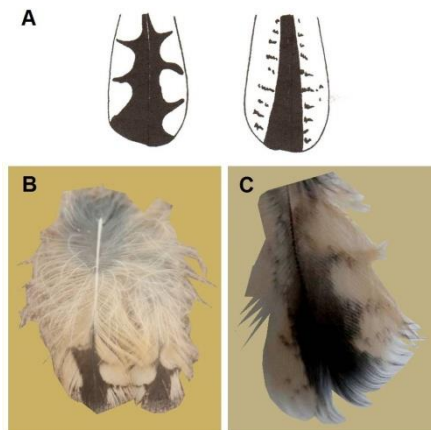
Species	♀ max	♀ min	Average	no.	♂ max	♂ min	Average	no.
<i>B. b. omissus</i>	460	425	445	15	424	404	415	7
<i>B. b. ruthenus</i>	515	471	485.4	22	468	430	445.6	17
<i>B. b. interpositus</i>	502	468	480	19	463	428	448	25
<i>B. b. nikolskii</i>	465	394	433	10	430	378	415	10
<i>B. bengalensis</i>	403	376	387	12	391	358	370	10
<i>B. ascalaphus</i>	390	340	367	20	368	325	346.5	20

We have listed from field observations and photos collected from Iraq and Iran several obvious morphological differences between *B. ascalaphus* and *B. b. nikolskii*. Besides field observations, an examination of *B. b. ruthenus* (Zhitkov and Buturlin, 1906)/*nikolskii* voucher specimens [(n=4): three deposited in the Iraqi Natural History Research Centre and Museum (INHRM) cited by Ticehurst *et al.* (1922) and Allouse (1953), and one collected in Khuzestan, western Iran by Seyd B. Mousavi on 24<sup>th</sup> of July 2020 were comprehensively studied.

In the field *B. ascalaphus* is so small that it can be separated from *B. b. nikolskii* even without measurements. In *Bubo ascalaphus* has pale rufous-sandy appearance, smaller size, and prominent dark line with white rim framing the plain tawny facial disc, and lighter streaks body in comparison to the sympatric *B. b. nikolskii*. It has short and barred ear-tufts (long and dark outer-web in *B. b. nikolskii*), much white in the throat (less or absent in *B. b. nikolskii*), sharp orange-yellow eyes bordered with wide white eye-ring and a dark-grey bill. The eyes are larger in proportion to the head when compared to other *B. bubo* subspecies [also in Robb (2015)]. *Bubo ascalaphus* breast-streaking is restricted on the upper parts [pattern of a breast feather resembles that of figure (1) in Vaurie (1960) also in this study (Pl.1)], with less dense fine pencil, clearer, and wider rufous barring beneath flanks, and under-tail coverts. The pale bars on the upper tail coverts are proportionately broader than the black bars (*vice versa* in *B. bubo*; see Collar and Boesman, 2019). The flying feathers have sandy/orange-rufous wash contrasting with darker carpals and upperwing primary coverts; under wing coverts are pale and less barred. *Bubo ascalaphus* has more spotted appearance and much less marbled wing-coverts, secondaries, tertials and tail, although both taxa may show half-marbled tail barrings (Collar and Boesman, 2019). It has thin tarsi and toes feathered pale tawny, paws are pale with blackish-brown claws (Pl. 2, 3A–C).

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In contrast, *B. b. nikolskii* has a pale-yellowish colour pattern; the facial disc is brown-greyish and the dark line framing the facial disc is usually absent, but rather faint and less pronounced than in *B. ascalaphus* and lacking the distinct white rim, even if present. Besides field observations, an examination of *B. b. ruthenus/nikolskii* museum specimens showed that the facial disc pattern is totally absent. Moreover, *B. b. nikolskii* has a bigger head and deep red/orange eyes which seem proportionally smaller. It has long dark outer webbed ear-tufts which show it to be clearly larger in appearance. Also it has rufous primaries, uniform upperparts, and upper wing coverts; secondaries, tertials and mantle feathers with pale-fringes and tips which resemble diamond-like spotting or “marbled pattern” (Pl. 3E). Among all races of *B. bubo*, the subspecies *B. b. nikolskii* has the greatest extent of dense black streaking and brown sparse vermiculation in the underparts (shaft-like spotting in *B. ascalaphus* in upper breast) reaching the lower belly, flanks, and under-tail coverts, and has a yellowish-tinged heavy tarsus.



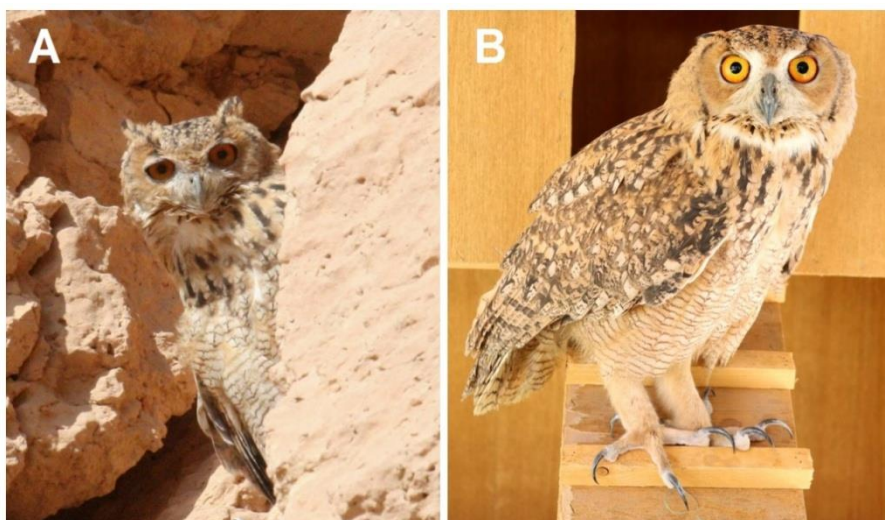
**Plate (1):** Pattern of breast feathers; (A) Adapted from Vaurie (1960), (B) Pharaoh Eagle-owl *Bubo ascalaphus*, Zurbatiyah foothills, eastern Iraq (10<sup>th</sup> of June 2020), (C) Eurasian Eagle-owl *Bubo. b. nikolskii*, Khuzestan, western Iran (24<sup>th</sup> of July 2020). [Photos © Omar Al-Sheikhly and Seyd B. Mousavi].

### Recent records

#### Iraq:

Until recently, published records of *B. ascalaphus* in Iraq were restricted to those made by Al-Sheikhly (2012) in the western desert. But subsequently further records have been made based on direct visual field observations supported with excellent photographic documentation. On 8<sup>th</sup> of March 2012, two breeding adults were observed and photographed using digital SLR Canon EOS 40D camera bodies fixed with 400mm telephoto lens at Wadi Al-Ga'ara, north of Rutba (33°25'58.35"N 40°20'2.11"E), Anbar province, extreme western Iraq (ca. 60–140Km) from the border with Syria and Jordan, respectively (Pl. 2A). In 2017, two new sightings of *B. ascalaphus* were obtained. On 2<sup>nd</sup> of April 2017, an adult owl was observed in the ruins of the old city of Ur (30°57'38.57"N 46° 6'21.12"E), Thi Qar province, southern Iraq. On 5<sup>th</sup> of May 2017, an adult was observed in the rocky cliffs of Jabal Sanam (30°7'26.75"N 47°37'50.46"E), Basra province, extreme southern Iraq (ca. 2.5 Km) from the border with Kuwait (Al-Dirawi A. pers. comm. to Omar Al-Sheikhly 2017). On 20<sup>th</sup> of April

2018, a full-sized adult owl was observed in the Zagros foothills of Al-Shirhani in Al-Teeb area (32°23.31'N 47°39'50.45"E), Myssan province, southeastern Iraq (ca. 0.5Km) from the border with Iran. On 10<sup>th</sup> of June 2020, an adult owl was captured alive at Zurbatiyah foothills (33°14'47.69"N 46° 9'14.55"E), Wasit province, eastern Iraq (ca. 2 Km) from the border with Iran, but no measurements were taken (Pl. 2 B). Furthermore, on many occasions, live-captured *B. ascalaphus* were observed in the local animal markets of Baghdad (Pl.4). Efforts to investigate the origins of the trapped owls were constantly invalid/ unverified; unfortunately, so all remained with unknown localities.



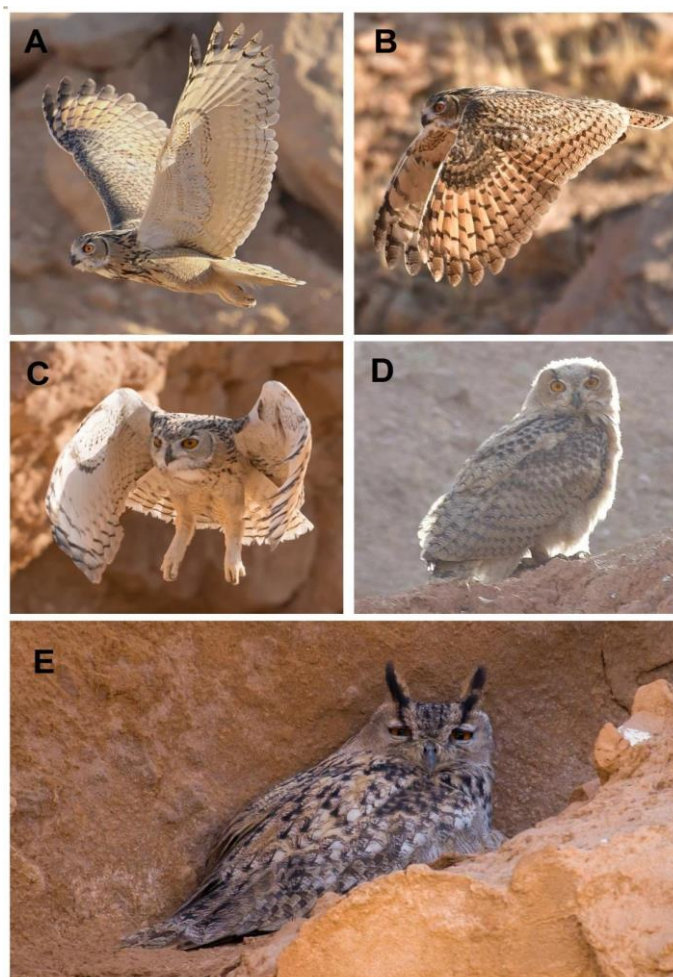
**Plate (2):** Pharaoh Eagle-owl *Bubo ascalaphus*; (A) Wadi Al-Ga'ara, north of Rutba, western Iraq, (B) Bird in captivity trapped at Zurbatiyah foothills, eastern Iraq. [Photos © Omar Al-Sheikhly].

#### **Iran:**

The first indication of the occurrence of *B. ascalaphus* in western Iran was made on 22<sup>nd</sup> of June 2014, when a full-sized juvenile Eagle-owl was observed and photographed at Bait Rashid area (see below). The juvenile Eagle-owl had distinctively pale rufous plumage, large head with proportionally large and sharp yellow-orange eyes and short ear-tufts, much white on throat and forehead, the prominent black-frame of the facial discs was absent (present in those of a similar age in Al-Sheikhly, 2012), unstreaked rufous-barred breast and underparts and short tail (Pl. 3D). Despite several opinions of esteemed ornithologists claimed it to be *B. ascalaphus*; however, we realized that the identification seemed inconclusive and further observations were required as that owl was in juvenile plumage, an age class that might morphologically overlap in little known taxa (e.g. *B. ascalaphus*/*B. b. nikolskii*). Additional field surveys in the rocky foothills of the Zagros Mountain forest steppe and South Iran Nubio-Sindian desert and semi-desert ecoregions in Khuzestan province in western Iran were conducted to further investigate the coexistence of both Eagle-owl species. As a consequence, based on the field identification remarks mentioned above supported by clear photographic documentation, the occurrence of *B. ascalaphus* was confirmed at two localities in western Iran. Site (I): Bait Rashid area (32°0'20.65"N 47°56'56.82"E), Khuzestan, western Iran. On

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12<sup>th</sup>–13<sup>th</sup> of July 2020, two adult individuals were observed and photographed using digital SLR Nikon D500 camera bodies fixed with f/5.6 500mm telephoto lens (Pl. 3A, B). Site (II): Suq Al-Kharban area (31°59'57.27"N 47°57'12.89"E), Khuzestan, western Iran. On 19<sup>th</sup>–20<sup>th</sup> of July 2020, two individuals were also observed and one had been photographed at (ca. 1Km) to the south from the 1<sup>st</sup> locality (Pl. 3C). Later on, an adult Eagle-owl was observed and photographed at site (II) on 25<sup>th</sup> of August 2020. It was identified as *B. b. nikolskii* (see Field Identification), evidence confirms the coexistence of both species in western Iran (Pl. 3E). The breeding of *B. ascalaphus* in western Iran has possibly been established in the Bait Rashid area. Several suitable nesting sites in rocky cracks/cliff caverns with owlets' downy feathers, pellets and remains of owl diet, with frequent visits by the adults were detected; however, further monitoring is required to confirm the breeding status of this species in Iran.



**Plate (3):** (A–B) Adult Pharaoh Eagle-owls *Bubo ascalaphus* in Bait Rashid, Khuzestan, Iran; (C) Adult owls in Suq Al-Kharban, Khuzestan, Iran; (D) Juvenile in Bait Rashid; (E) Eurasian Eagle-owl *Bubo. b. nikolskii* in Suq Al-Kharban, Khuzestan, Iran. [Photos © Seyd B. Mousavi].

### Interspecific Relationships

According to Weick (2006), *B. ascalaphus* could be sympatric with *B. b. interpositus* and *B. b. omissus* at least in Iran. However, the geographical range of *B. b. interpositus* is confined to the northwestern and northern Iran from Alborz, region Tehran, and probably the south Caspian region while *B. b. omissus* is confined to northeastern Iran and Turkmenistan to western China (Khaleghizadeh *et al.*, 2017). Specimens collected from Luristan not far from the type locality of *B. b. nikolskii* in western Iran showed that *B. b. omissus* was a synonym of *B. b. nikolskii*, as these specimens were identical in size and coloration, including the streaking (Vaurie, 1960). However, *B. b. omissus* was later recognized as a subspecies restricted to the north of Kopet Dagh, in south Turkmenistan (Khaleghizadeh *et al.*, 2017). In recent study of Obuch (2014), the collected diet remains from seven owl subspecies (mainly from *B. bubo*) from 38 sites throughout Iran including two localities (B10, 11) in Khuzestan in western Iran where *B. b. nikolskii* was resident; however, the exact subspecies involved were not mentioned.

The exact boundaries of the different races of *B. bubo* are obscured by the fact that there is considerable intergradation. However, we have seen during this study that *B. ascalaphus* occurs in eastern, southeastern Iraq towards western Iran sympatrically with *B. b. nikolskii*, but we do not know whether the two taxa will hybridize or not, so this requires further specimen examinations and genetic investigations. *Bubo bubo nikolskii*; however, could be separated better than any other race of *Bubo* (with the exceptions of *B. ascalaphus* and *B. bengalensis* which are smaller still, but are not closely related to *B. b. nikolskii*) by its small size (see Table 1), pale-yellowish colour, less heavily streaked, and vermiculated with brown below (Vaurie, 1960). *Bubo bubo nikolskii*, a distinctively small Eagle-owl (wing ♂=378; ♀=394 mm, both of these values being the minimum for any subspecies of *B. bubo*, and almost falling in the category of *B. ascalaphus* measurements, see Table 1) was firstly described by Zarudny from the Jebel (Djebel) Tnué in Khuzestan, in western Iran. This subspecies is resident in small numbers in the Zagros and Karun districts (see Ticehurst *et al.*, 1922), as well as in Khorsan south of Sistan, west of Kerman, and in the Zagros west at least as far as Luristan “Lorestan” to western Pakistan (Zarudny and Loudon, 1905; Vaurie, 1965; Khaleghizadeh *et al.*, 2017). *Bubo bubo nikolskii* was reported from central Iraq by Allouse (1953); however, Vaurie (1960) believed that Allouse was incorrect in calling the Eagle-owls of Mesopotamia (Iraq nowadays) as *B. b. nikolskii*. Ticehurst *et al.* (1922; 1926) assigned Eagle-owls of Iraq to the subspecies *B. b. ruthenus* after he had compared specimens from Iraq with others from Trebzon in Turkey. However, *B. b. interpositus* and *B. b. ruthenus* were not synonymous and confused by E. Hartert with each other and the error of Ticehurst and Hartert was corrected by Hartert and Steinbacher (1935). Ticehurst *et al.* (1922) also mentioned that *B. b. nikolskii* remained mysterious and the three specimens collected from Iraq cannot be of that subspecies based on wing measurements, while the subspecies could occur in the adjacent areas of southeastern Iraq (see Zarudny and Loudon, 1905), from where specimens thence materialized later. Therefore, it is important to know the morphological differences visible in the field and useful for assessing good quality photographic documentation to help differentiate these owls. Furthermore, it seems that *B. b. nikolskii* is sharing the same ecological niche with *B. ascalaphus* which is evident by the coexistence of both species in the lower Zagros foothills and arid steppes of southeastern Iraq and western Iran where a hybridization zone may exist. To establish this, additional research is needed.



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### Conservation status

Besides threats, the survival status of *B. ascalaphus* in both Iraq and Iran is not fully known and warrants further monitoring. Mikkola (2013) indicated that the species has been often persecuted by humans. In Arabian culture, the owl is a symbol of bad omen and abhorrent to be trapped or kept as domesticated pets. Despite the traditional beliefs, in Iraq, the species is targeted by wildlife trade, especially during the breeding season (February–June). Breeding adults are trapped by nets and owlets/juveniles are taken from their nesting holes. Besides other birds of prey, *Bubo* owls of different age classes are persecuted by local poachers and trappers (see Al-Sheikhly and Al-Azawi, 2019) in western through southeastern Iraq, and presented in the local animal markets to be raised as cage birds (Pl. 4). It is worth mentioning that hunting of *B. bubo* is banned by the Iraqi Wild Animals Protection Law (no. 17 issued in 2010); however, owls are deliberately trapped/captured whenever and wherever possible. The enforcement of the hunting legislations, the establishment of the National Protected Areas (PAs) Network, and advocating toward the conservation of endangered species by local communities (e.g. Al-Sheikhly *et al.*, 2020) remain major challenges facing the future of the species conservation, at least in Iraq.



**Plate (4):** Different age classes of Pharaoh Eagle-owls *Bubo ascalaphus* trapped from unknown localities in Iraq by local hunters to be raised as pets. [Photo © Omar Al-Sheikhly].

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**بومة النسر الفرعونية (*Bubo ascalaphus* (Savigny, 1809)  
(Strigiformes, Strigidae)**

**البومة التي "يكتنفها الغموض" في العراق وإيران**

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**الخلاصة**

لازال أقصى شرق الأنتشار لبومة النسر الفرعونية *Bubo ascalaphus* (Savigny, 1809) مجهولاً بسبب المشاكل التصنيفية وقلة البحوث المتعلقة بدراسة الأبوام.

في العراق تم تسجيل بومة النسر الفرعونية في مواقع قليلة في الصحراء الغربية العراقية بينما لم يذكر تسجيلها في إيران قبل هذه الدراسة. في عام 2010-2017، تم الحصول على تسجيلات جديدة لبومة النسر الفرعونية في غرب باتجاه جنوب شرق العراق وتم تأكيد تواجد نطاق أنتشار جديد لها في غرب إيران. إضافة لما سبق، تمت مناقشة التشخيص الحقلية، العلاقات بين الأنواع المتقاربة، وحالة الصون لبومة النسر الفرعونية في العراق وإيران بأسهاب.