

Confirmation of Occurrence of Olive Ridley Turtle *Lepidochelys olivacea* (Eschscholtz, 1829) (Reptilia: Testudines: Cheloniidae) from Khor Al-Zubair Lagoons, Iraq

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Abstract: A single female of 75 cm in total length of olive ridley turtle *Lepidochelys olivacea* (Eschscholtz, 1829) was caught from the Khor Al-Zubair lagoons, north-western of Arabian Gulf on 1st September 2018. The morphometric and meristic characters of the specimen were given. This report is considered as the first taxonomic study on olive ridley turtle in Iraqi marine waters.

Keywords: Olive ridley turtle, *Lepidochelys olivacea*, Sea turtle, Iraq, Arabian Gulf.

Introduction

Iraq has been ignored in herpetofauna (amphibians and reptiles) biodiversity assessment for long time (Bosch, 2003). Khalaf (1959) listed 91 reptile species from Iraq. Mahdi & Georg (1969) designed a list of vertebrates in Iraq and showed 91 species of reptiles which included two freshwater turtles and one species of tortoises and two species of sea turtles named leatherback turtle *Dermochelys coriacea* (Vandelli, 1761) and Hawksbill sea turtle *Eretmochelys imbricata* (Linnaeus, 1776). Bosch (2003) listed 100 species (included 13 species which need further confirmation) of reptiles from Iraq. Al-Barazengy et al. (2015) prepared an updated check list of amphibians and reptiles so far recorded in Iraq, and the list represents ten amphibian species and 105 reptile species. Afrasiab et al. (2018) organized an annotated checklist of reptilian fauna of Basrah which included 94 species. Salman (2019) reviewed the species diversity of herpetofauna in southern Iraq which accounted for 96 species of amphibians and reptiles.

Family Cheloniidae Oppel, 1811 is represented by five genera and six species (Zhang, 2011). Arabian Gulf- Gulf of Oman region harboured five species of sea turtles, four of them belong to Cheloniidae (Carpenter et al., 1997). Olive ridley turtle *Lepidochelys olivacea* is commonly occurred in Atlantic- eastern central, southeast, southwest, western central; Indian Ocean- eastern, western; Pacific- eastern central, southeast, southwest, western central (UNEP-WCMC, 2003), at the Middle East it is distributed in Hawkes's Bay, Karachi, Pakistan and from Masirah Island, Arabian Sea off Oman (Leviton et al., 1992) and rare in the Red Sea (Phillott & Rees, 2018). Kami (1997) published a first report on the occurrence of *L. olivacea* in Gulf of Oman at Iranian coasts. Bishop et al. (2007) recorded it for the first time from the Arabian Gulf off Kuwaiti waters. Recently, Tollab et al. (2015) investigated the first nesting area of olive ridley turtle in the Arabian Gulf. Since 60 years ago, no record of sea turtle from Iraqi waters. Hence, the present taxonomic data, which is considered as an interesting knowledge in herpetofauna of Iraq, is added.

Materials and Methods

A live female specimen of olive ridley turtle *Lepidochelys olivacea* was caught by hands by fishermen in 1st September 2018 from Khor Al-Zubair lagoons (30°08'16"N, 47°54'31"E). The turtle was transported to the laboratory of Aquaculture Unit, College of Agriculture, University of Basrah. Morphometric and meristic characteristics (Figure 1) were recorded followed Carpenter et al. (1997) and Kami (1997) by using digital Vernier or measurement tape to the nearest 1 mm. The specimen was preserved in 10% formalin and temporally deposited in the Basrah Natural History Museum.

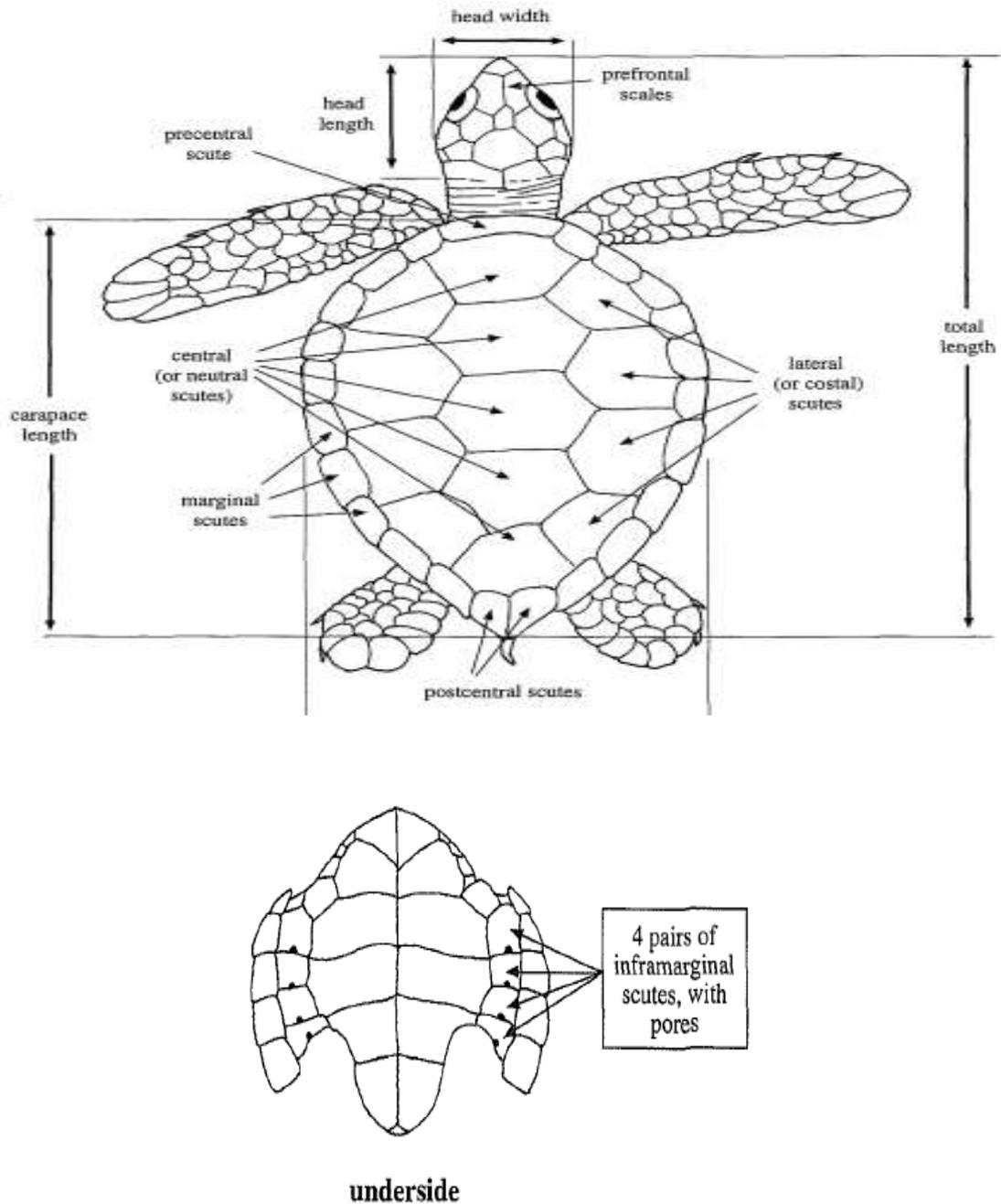


Figure 1: Upper- Schematic drawing of dorsal view of Sea turtle family Cheloniidae, Lower- Underside. (after Carpenter et al., 1997).

Results

Description (Figure 2)

The head of the turtle partially protruding of died specimen, making it impossible to see the neck. Carapace oval, flat on top and steep-sided. The ratio of carapace length to maximum width 1: 1.2. Three types of scutes on carapace (Figure 2) represent six central (excluding pre and postcentral scutes), seven pairs of lateral scutes and 12 pairs of marginal scutes. The first and last central scutes attach with precentral and postcentral scutes, respectively. Head semi triangular in dorsal view, comprises 22.9% of carapace length. Forelimbs modified as like flippers. Fore and hind flippers have one visible claw each on the anterior margin. First and second pairs of scales (prefrontal scales) are sub-quadrangle and third and fourth scales are rectangular.

Colour: Dusty olive above and creamy on the under-side. The dorsal surfaces of flippers are dark olive. Claws whitish. Morphometric and meristic measurements of the turtle are clarified in Table 1.



Figure 2: Olive ridley turtle *Lepidochelys olivacea*. Left- Dorsal view, Right- Head, lateral view.

Table 1: Morphometric and meristic characters of *L. olivacea* from Khor Al-Zubair lagoons, Iraq.

Morphometric characters	mm	Meristic characters	
Total length	750	Vertebral (=central) scutes	6
Straight carapace length	579	Nuchal (=precentral) scutes	1
Straight carapace width	697	Supracaudal (=postcentral) scutes	2
Curved carapace length	610	Costal (=lateral) scutes	7-7
Curved carapace width	734	Marginal scutes	12-12
Head length	140	Prefrontal scales	2 pairs
Head width	115	Inframarginal scutes	4-4
Orbital length	52	Axillary scutes	6-6
Preorbital length	92	Interanal scales	0-0
Anus to tail tip distance	35	Intergular scales	0-0
Tail length	83	Inguinal scales	0-0
Plastron length	435		

Discussion

By having more than five lateral scutes (seven) and four pairs of inframarginal scutes with pores, it could be easy to distinguish the olive ridley turtle from other species of the family Cheloniidae that occur in the Arabian Gulf. Bishop et al. (2007) questioned why the presence of the olive ridley turtle in one of the cold months of the year (October) in contrast with the presence of other species of marine turtle in the hot months in Kuwait. They expected this to be linked with the shrimp migration during this time of the year, and excluded that Kuwait is one of its nesting areas as it is known for other two species namely Green Turtle *Chelonia mydas* (Linnaeus, 1758) and Hawksbill Turtle *E. imbricata* (Linnaeus, 1776). Some studies demonstrated occasional records of the vulnerable, Olive Ridley sea turtle *L. olivacea* in the world (Rastegar-Pouyani et al., 2015). Tollab et al. (2015) demonstrated 11 records of olive ridley turtle from northern and southern coasts of Persian (= Arabian) Gulf through the period from 2013 to 2015. They proposed that the species lives and reproduces in the Gulf. However, Phillott & Rees (2018) found dense aggregates of ridley olive turtle in Sri Lanka in cool months (December to April) in a nesting area.

Morphometric and meristic characters of the present Iraqi specimen of *L. olivacea* agree with that mentioned by Kami (1997) except the orbital length which appears bigger in the present specimen, Nevertheless, it could be within the intraspecific variations of the same species or resulting from the differences in some ecological criteria between different geographic habitats, especially the high turbidity of northern of the Gulf that affects the colour of the turtle (Sandoval-Castillo, Pers. Comm.).

Until recently, only two species of marine turtles viz. Hawksbill sea turtle *E. imbricata* and Leatherback turtle *D. coriacea* (Vandelli, 1761) are so far recorded from Iraq (Khalaf, 1959; Mahdi & Georg, 1969; Afrasiab et al., 2018; Salman, 2019). However, Bosch (2003) and Al-Barazengy et al. (2015) listed another three species of sea turtles from Iraq: Loggerhead turtle *Caretta caretta* (Linnaeus, 1758), green sea turtle *C. mydas* (Linnaeus, 1758) and olive ridley turtle *L. olivacea*. Unfortunately, recent studies did not showed the original report(s) of records in Iraq. The present record of olive ridley turtle can be considered as a confirmation occurrence of marine herpetofauna from Iraqi marine waters.

Ridley olive turtle is a relevant given as vulnerable status of species worldwide and the endangered status even in its main distribution area of reproduction (Mexico to Ecuador) worldwide (Rodríguez-Zúrate et al., 2018). For this reason, it is highly recommended to give attention to this important vertebrate for conservation and sustaining the biodiversity of the sea turtles in the region and obtain more information on its biology, ecology, behaviour, nesting, enemies, parasites and diseases in the region.

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References

- Afrasiab, S.R.; Al-Moussawi, A.A. & Hadi, H.D. (2018). Annotated checklist of reptilian fauna of Basrah, south of Iraq. *Bull. Iraq Nat. Hist. Mus.*, 15 (1): 77-92.
- Al-Barazengy, A.N.; Salman, A.O. & Abdul Hameed, F.T. (2015). Updated list of amphibians and reptiles in Iraq 2014. *Bull. Iraq Nat. Hist. Mus.*, 13 (4): 29-40.
- Bishop, J.M.; Deshti, T. & Al-Ayoub, S. (2007). The Arabian Gulf's first record of the olive ridley, *Lepidochelys olivacea*, from Kuwait. *Zool. Midd. East*, 42: 102-103.
- Bosch, H.A.J. in den (2003). Iraqi Herpetology: An introductory checklist. *POD@RCIS*, 4 (2): 53-72.
- Carpenter, K.E.; Krupp, F.; Jones, D.A. & Zajonz, U. (1997). The living marine resources of Kuwait, Eastern Saudi Arabia, Bahrain, Qatar and the United Arab Emirates. FAO species identification field guide for fishery purposes, FAO, Rome: viii + 293 pp. + XVII pls.
- Kami, H.G. (1997). First record of olive ridley turtle, *Lepidochelys olivacea*, in Iranian coastal waters. *Zool. Midd. East*, 15: 67-70.
- Khalaf, K.T. (1959). Reptiles of Iraq, with some notes on the amphibians. ArRabita Press, Baghdad: vii + 96 pp.
- Leviton, A.E.; Anderson, S.C.; Adler, K. & Minton, S.A. (1992). Handbook to Middle East amphibians and reptiles. Society for the Study of Amphibians and Reptiles: 252 pp.
- Mahdi, N. & Georg, P.V. (1969). A systematic list of the vertebrates of Iraq. *Iraq Nat. Hist. Mus. Publ. No. 26*: 1-104.
- Phillott, A.D. & Rees, A.F. (2018). Sea turtles in the Middle East and South Asia Region: MTSG Annual Regional Report 2018. Draft Report of the IUCN-SSC Marine Turtle Specialist Group, 2018: 186pp.
- Rastegar-Pouyani, N.; Gholamifard, A.; Karamiani, R.; Bahmani, Z.; Mobaraki, A.; Abtin, E.; Faizi, H.; Heidari, N.; Takesh, M.; Sayyadi, F.; Ahsani, N. & Browne, R.K. (2015). Sustainable management of the herpetofauna of the Iranian plateau and coastal Iran. *Amphib. Reptile Conserv.*, 9 (1): 1-15.
- Rodríguez-Zúrate, C.J.; Sandoval-Castillo, J.; van Sebille, E.; Keane, R.G.; Rocha-Olivares, A.; Urteaga, J. & Beheregaray, L.B. (2018). Isolation by environment in the highly mobile olive ridley turtle (*Lepidochelys olivacea*) in the eastern Pacific. *Proc. Roy. Soc. B* 285: 20180264. <http://dx.doi.org/10.1098/rspb.2018.0264>.
- Salman, N.A. (2019). A review of southern Iraq herpetofauna. *Biol. Appl. Environ. Res.*, 3 (1): 61-71.
- Tollab, M.A.; Dakhteh, M.H.; Zaferani, G.G.; Hesni, M.A.; Ahmadi, F.; Langari, M.S.; Alavian, Z. & Rezaie-Atagholipour, M. (2015). The olive ridley turtle, *Lepidochelys olivacea*, in the Persian Gulf: A review of the observations, including the first nesting of the species in the area. *Chelonian Conserv. Biol.*, 14 (2): 192-196.
- UNEP-WCMC. (2003). Checklist of herpetofauna listed in the CITES appendices and in EC Regulation 338/97. 9th ed. JNCC Report No. 340: 176 pp.
- Zhang, Z.-Q. (2011). Animal biodiversity: An outline of higher-level classification and survey of taxonomic richness. *Zootaxa*, 3148: 1-237.