

Short Communications

First record of the numbray, *Narke dipterygia* (Bloch & Schneider, 1801) from Iran (Elasmobranchii: Narkidae)

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Abstract: As a result of our survey in February 2011, a single female specimen of *N. dipterygia* was found in the tidal zone of Chabahar Bay and it was caught with a small deep net. The fish was transferred in a bucket to the Fisheries Laboratory of Chabahar Maritime University and kept in a salt water aquarium for further examinations. We witnessed the birth of 6 juveniles after 3 days. The female and her juveniles were kept in the aquarium for about six months and fed with live food. After that, they died and were fixed in 96% ethanol. The female fish total length was 172.02mm and weighed 18.21g. The fry total length ranged from 49.90-56.37mm and weighed 1.14-2.1.65g. The length-weight, length-disk length, disk length-electric organ length showed high correlations ($r^2 > 0.85$), but the relationship between electric organ width and fish weight was low ($r^2 = 0.33$). Although this species was recorded from the Arabian Sea and western Indian Ocean, this is the first record of this species from the Iranian waters.

Keywords: Biometry, Distribution, Meristics, Morphometrics, Zoogeography.

Introduction

Electric rays are a relatively diverse group of circum-tropical batoids which occur globally in most warm to sub-temperate marine waters. Electric rays are morphologically distinct and could be easily distinguished from other batoids (Compagno 1973). The numbray *Narke dipterygia* (Bloch & Schneider, 1801) is a tropical, marine demersal fish distributed from Oman and the Arabian Sea to Sumatra, Borneo and Philippines, north to southern Japan and Indo-West Pacific (Fig. 1). However, it does not occur in the southwestern Indian Ocean, Australia and the southwestern Pacific islands, since it lives exclusively on the continental shelf. The maximum length recorded for this fish is 18cm with a low resilience and minimum population doubling time of

4.5-14 years (Froese & Pauly 2014). Although this species was recorded from the Arabian Sea (Bianchi 1985), there are no record from the Iranian waters (Carpenter et al. 1997; de Carvalho & Randall 2003). Thus, this is the first record of this species from Iran. It should be mentioned that the species *Bengalichthys impennis* was synonymized in *N. dypterygia*, but has not been reported from Iran even under this name.

Methods and Materials

As a result of our survey in February 2011, a single female specimen of *N. dipterygia* (Fig. 2) was found in Chabahar Bay, around Shahid Beheshti pier, Chabahar (25°17'37"N, 60°36'35"E), in a 0.5m depth, in the tidal zone and it was caught with a small dip net (Fig. 2).



Fig.1. Distribution map of *Narke dipterygia*.



Fig.2. The female *Narke dipterygia* caught in coastal waters of Chabahar, Iran (172mm).

The fish was transferred in a bucket to the Fisheries Laboratory of Chabahar Maritime University and kept in a salt water aquarium for further examinations. We witnessed the birth of 6 juveniles after 3 days (Fig. 3). The female and her juveniles were kept in the aquarium for about six months and fed with live food. One of the juveniles got lost during the experiment; others died after this period and were fixed in 96% ethanol. The specimens were catalogued in the fish collection of Isfahan University of Technology (Fig. 4). The biometric measurements were carried out following de Carvalho & Randall (2003). All measurements were taken point to point by a digital caliper to the nearest 0.01mm. The temperature was measured by a regular



Fig.3. The six newly born juveniles of *Narke dipterygia* in an aquarium.



Fig.4. The female dead specimen of *Narke dipterygia* and her juveniles.

thermometer.

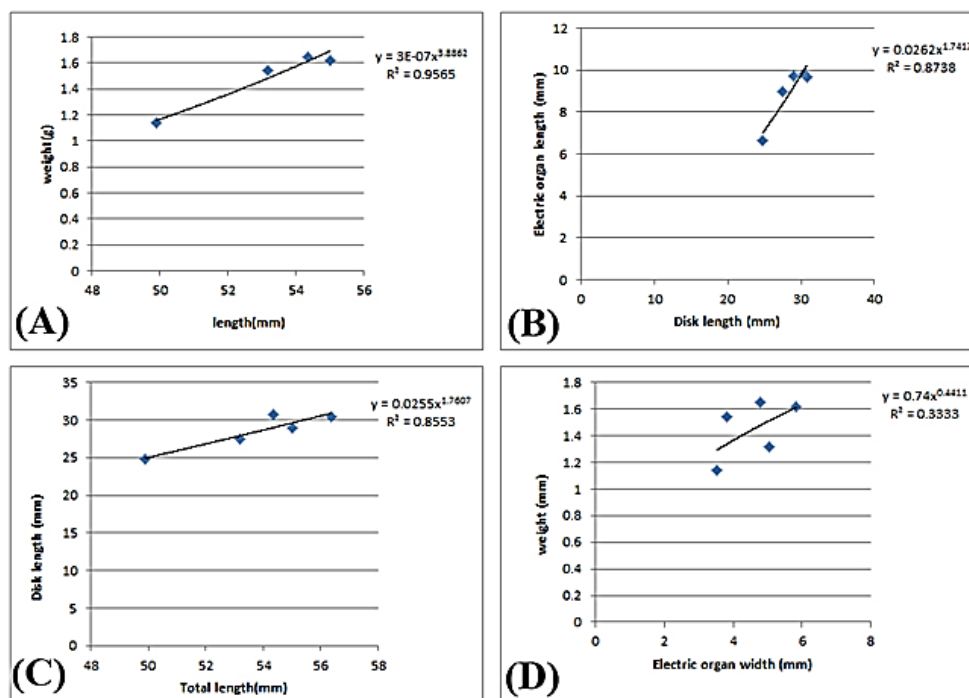
Results and Discussion

This species is distinguished by having a round disk and only one dorsal fin opposed to pointed disk and/or two dorsal fins, in other rays in the region and presence of one white spot on each pectoral fin.

The habitat was with a calm water flow on a sandy bed, covered by coral reefs, such as *Favia* sp., *Cyphastrea* sp. and *Acropora* sp. The water temperature was 23.5°C. Other fish species coexisted with *N. dipterygia* include *Pomacentrus leptus* Allen & Randall, 1980 and *Apogonichthyoides taeniatus* (Cuvier, 1828), *Scolopsis lineata* Quoy & Gaimard, 1824, *Coris caudimacula* (Quoy & Gaimard, 1834),

Table 3. Morphometric measurements for the female numbray and her five fry.

	Female adult	Fry 1	Fry 2	Fry 3	Fry 4	Fry 5
Total length (mm)	172.02	56.37	54.37	55.01	53.19	49.90
Disk width	72.60	26.67	24.03	24.57	20.81	18.78
Disk length	87.54	30.37	30.77	29.01	27.48	24.78
Preorbital snout length	14.68	5.34	5.22	5.25	4.48	3.26
Preoral snout length	8.35	4.71	4.39	4.50	3.89	2.43
Interorbital distance	12.13	4.46	4.03	4.06	3.60	3.47
Eye length	1.95	1.42	1.24	1.39	1.20	1.11
Mouth width	8.24	3.71	3.06	3.66	3.02	2.52
Distance between nostrils	6.08	1.94	1.63	1.76	1.55	0.99
Branchial basket length	22.67	8.37	8.19	8.33	7.93	5.96
Pelvic fin length	36.14	12.44	10.94	11.14	9.09	6.45
Tail width	90.44	28.11	24.41	26.58	24.35	23.65
Height of first dorsal fin	7.03	3.37	2.28	2.72	1.32	1.02
Dorsal lobe of caudal fin length	36.24	12.9	11.67	11.93	11.14	10.47
Height of caudal fin	20.71	5.57	5.49	5.51	4.44	3.87
Dorsal to caudal fin distance	16.62	3.3	2.63	2.92	2.55	1.49
Snout to first dorsal fin distance	105.61	33.23	33.16	33.2	33.08	29.76
Snout to cloaca distance	75.36	25.43	25.24	25.37	25.18	23.95
Cloaca to caudal fin distance	57.18	15.94	14.73	15.39	13.59	12.54
Electric organ length	26.13	9.81	9.65	9.71	8.99	6.66
Electric organ width	12.28	5.06	4.78	5.82	3.83	3.52
Weight (g)	18.21	1.32	1.65	1.62	1.54	1.14

**Fig.5.** The length-weight (A), length-disk length (B), disk length-electric organ length (C) and electric organ width-weight (D) relationships and their correlations coefficient in the five juveniles of *Narke dipterygia* kept in an aquarium.

Bathygobius fuscus (Rüppell, 1830), *Amblygobius albimaculatus* (Ruppell, 1830), *Cryptocentrus lutheri*

Klausewitz, 1960), *Ecsenius pulcher* (Murray, 1887), *Lutjanus ehrenbergii* (Peters, 1869), *Siganus javus*

(Linnaeus, 1766), *Parupeneus rubescens* (Lacepède, 1801), *Acanthopagrus bifasciatus* (Forsskål, 1775), *Lethrinus nebulosus* (Forsskål, 1775), *Epinephelus stoliczkae* (Day, 1875), *Pterois volitans* (Linnaeus, 1758), *Pterois miles* (Bennett, 1828).

The result of biometric measurements is presented in Table 1. The female fish total length was 172.02mm and weighed 18.21g. Her disk length and width was 87.54 and 72.60, respectively. The fry total length ranged from 49.90-56.37mm and weighed 1.14-2.1.65g. Their disk length and width ranged as 24.778-30.37 and 18.78-26.67, respectively. The length-weight, length-disk length, disk length-electric organ length and electric organ width-weight relationships are shown in Figure 5. All the relationships show high correlations ($r^2 > 0.85$) (Fig. 5A-C), but the relationship between electric organ width and fish weight ($r^2 = 0.33$) (Fig. 5D).

Acknowledgments

We are grateful to Mr. M. Ghorbani for his assistance in laboratory work. This study was financially supported by Chabahar Maritime University and Isfahan University of Technology.

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