

An Investigation on Fishes of The Turkish Republic of Northern Cyprus

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Received: 06.09.1999

Abstract: This investigation was carried out for the determination of fish species living on the coasts of the Turkish Republic of Northern Cyprus. Of 49 determined species, *Pempheris vanicolensis* is a new record for Turkish Republic of Northern Cyprus. Some morphometric, meristic and ecological characteristics of this species were examined.

Key Words: Fish species, Systematic, *Pempheris vanicolensis*, Turkish Republic of Northern Cyprus.

Kuzey Kıbrıs Türk Cumhuriyeti Balıkları Üzerine Bir Araştırma

Özet: Bu araştırma, Kuzey Kıbrıs Türk Cumhuriyeti sahillerinde yaşayan balıkları belirlemek amacıyla yapılmıştır. Saptanan 49 türden, *Pempheris vanicolensis* Kuzey Kıbrıs Türk Cumhuriyeti için yeni kayıttır. Bu türün bazı morfolojik karakterleri incelenmiştir.

Anahtar Sözcükler: Balık türleri, Sistematik, *Pempheris vanicolensis*, Kuzey Kıbrıs Türk Cumhuriyeti.

Introduction

Taxonomic investigations for determination of fish fauna along the coasts of Cyprus (Greek area) started in Israel, Greece and England in the late twentieth century. However, the number of fish species has not been determined completely due to the constant influx of Lessepsian fauna to the eastern Levant. Of these, 65 marine species and 8 freshwater species with 4 new records identified by Norman (1929) have been listed. An article on Cypriot fish enumerating 16 species (two from fresh water) has been published, followed by a list of 19 presumptive new records from the same region (1). A systematic account of 45 species of fish has been given from Cyprus (2). A list and the distribution of some fishes have been given from Cyprus (2, 3, 4, 5). A checklist of 196 Cypriot fishes, 24 of which are new records to the eastern Levant, has been published (6). A list of some fishes from Cyprus with the major general ichthyofaunistic studies in the eastern Levant has been given (7, 8).

Insufficient attention has been given to the Republic of Northern Cyprus for investigations on marine

research, especially fish fauna, due to its geographical, social and political status. Thus, only a preliminary investigation was conducted on the bioecology of the waters of Northern Cyprus in 1999 (9). The goal of the present study was to determine new species that could contribute to Cyprus fisheries management in the future.

Materials and Methods

The investigation area is located roughly between the latitudes 35° 42' N and 34° 26' N, and the longitudes 32° 18' E and 34° 34' E. The study was carried out between 1995 and 1996.

The pelagic and benthic samples were collected by trawl and local gears in the stations shown in Figure 1. The obtained samples were washed with fresh water immediately; after identifications, the new species was photographed and morphometric measurements were taken with a dial caliper of 0.05 mm accuracy, and all meristic characters were determined under binocular microscope. Finally, they were preserved in 70% alcohol or 4% formaldehyde solutions.



Figure 1. Sampling stations

Results

In this investigation, 49 species belonging to 2 classes, 12 orders, 32 families and 42 genera were collected. Systematic categories are given as described earlier (1, 10).

Phylum: Chordata

Subphylum: Vertebrata

Superclass: Gnathostomata

Class: Selachii (Chondrichthyes)

Order: Lamniformes

SCYLORHINIDAE

Scyliorhinus canicula (Linnaeus, 1758) Smallspotted catshark, Skylaki, Küçük kedi balığı

Order: Rajiformes

RAJIDAE

Raja radula Delaroche, 1809 Rough ray, Vatoz

DASYATIDAE

Dasyatis pastinaca (Linnaeus, 1758) Common stingray, Rina, Dikenli vatoz

Class: Osteichthyes

Order: Apodes (Anguilliformes)

MURAENIDAE

Muraena helena Linnaeus, 1758 Mediterranean moray, Smyrna, Müren

Order: Aulopiformes

SYNODONTIDAE

Synodus saurus (Linnaeus, 1758) Atlantic lizardfish, Scarmos, Iskarmoz

Order: Anacanthini (Gadiformes)

GADIDAE

Phycis blennoides (Brünnich, 1768) Greater fork-beard, Malactos, Çatalsakal gelincik balığı, Eşek balığı

Order: Atheriniformes

ATHERINIDAE

Atherina (Hepsetia) boyeri Risso, 1810 Gümüş balığı

Order: Beryciformes

HOLOCENTRIDAE

Sargocentron rubrum (Forsskål, 1755) Red soldier, Squirrel fish, Rossos, Hindistan, Asker, Pijama, Çin balığı

Order: Syngnathiformes

SYNGATHIDAE

Hippocampus ramulosus Leach, 1814 Sea-horse, Alogaki, Deniz ati

Order: Scorpaeniformes

DACTYLOPTERIDAE

Dactylopterus volitans (Linnaeus, 1758) Flying gurnard, Chelidanopsaro, Ornithari, Uçan kırlangıç balığı

SCORPAENIDAE

Scorpaena notata Rafinesque, 1810 Petite rascasse, Scorprios, Benekli iskorpit

Scorpaena porcus Linnaeus, 1758 Black scorpion fish, Small-scaled scorpion fish, Scorprios, Lipsoz, Çorba balığı

Scorpaena scrofa Linnaeus, 1758 Red scorpion fish, Skorprios, İskorpit, Adabeyi, Çorba balığı

TRIGLIDAE

Trigla lyra Linnaeus, 1758 Pipe gurnard, Capani, Kırlangıç, Öksüz, Japon

Trigloporus lastoviza (Brünnich, 1768) Streaked gurnard, Capani, Mazak, Kırlangıç, Horoz balığı

Order: Perciformes

SERRANIDAE

Epinephelus quaza (Linnaeus, 1758) Dusky grouper, Orphos, Taş hanisi, Orfoz

Serranus cabrilla (Linnaeus, 1758) Channos, Comber, Asil hani balığı, Ahmak

Serranus scriba (Linnaeus, 1758) Pointed comber,
Perca, Yazılı hani balığı

APOGONIDAE

Apogon nigripinnis Cuvier, 1828 Cardinal, Kardinal
balığı

CARANGIDAE

Alectis alexandrinus (E. Geoffray Saint-Hilaire,
1817) Alexandria pompano, İskender balığı

Trachinotus ovatus (Linnaeus, 1758) Pompano,
Derbio, Litsa, Yaloderma

Trachurus picturatus (T.E. Bowdich, 1825) Blue
jack mackarel, Mavrosafrido, Karagöz istavrit, İstavrit

SPARIDAE

Boops boops (Linnaeus, 1758) Bogue, Voppa, Kupes

Diplodus annularis (Linnaeus, 1758) Annular sea
bream, Sparos, İsparoz balığı

Diplodus sargus (Linnaeus, 1758) White sea bream,
Sargos, Sorgoz, Sargoz

Diplodus vulgaris (E. Geoffrey Saint-Hilaire, 1817)
Common two-banded sea bream, Haratzida, Karagöz

Oblado melanura (Linnaeus, 1758) Saddled bream,
Melanoura, Melanurya

Pagellus acerna (Risso, 1826) Axillary seabream,
Bronzabream, Phatsoukli, Yabani mercan

CENTRACANTHIDAE

Spicara maena (Linnaeus, 1758) Mendole, Menoula,
Meluna, Beyazgöz

Spicara smaris (Linnaeus, 1758) Terro, Caramel,
İstrangiloz, İzmarit

SCIANIDAE

Umbrina cirrosa (Linnaeus, 1758) Shidrum, Corb,
Millokopi, Minakop, Kötek

MULLIDAE

Mullus surmuletus Linnaeus, 1758 Striped red
mullet, Strillia, Tekir balığı

POMACENTRIDAE

Chromis chromis (Linnaeus, 1758) Damsel fish,
Kromidopsaro, Papaz, Popaz

MUGILIDAE

Liza aurata (Risso, 1810) Golden grey mullet,
Cephalos, Kefal, Altınbaş kefal

SPHYRAENIDAE

Sphyraena sphyraena (Linnaeus, 1758) Barracuda,
Sphyrna, Iskarmoz, Turna

LABRIDAE

Coris julis (Linnaeus, 1758) Rainbow wrasse, Yillos,
Gelin balığı

Symphodus mediterraneus (Linnaeus, 1758)
Axillary wrasse, Chilou, Çırçır

Symphodus tinca (Linnaeus, 1758) Peacock wrasse,
Chilou, Lekeli çırçır balığı, Ot balığı, Arap balığı

Thalassoma pavo (Linnaeus, 1758) Ornate wrasse,
Prasinoyillos, Gün balığı

Xyrichthes novacula (Linnaeus, 1758) Cleaver
wrasse, Ponticos, Ustura balığı

SCARIDAE

Sparisoma (Enscarus) cretense (Linnaeus, 1758)
Parrot fish, Scaros, Papağan balığı, İskaroz, Girit balığı

TRACHINIDAE

Trachinus draco Linnaeus, 1758 Greater weaver,
Drakaena, Trakonya, Çarpan

URANOSCOPIDAE

Uranoscopus scaber Linnaeus, 1758 Stargazer,
Lychnos, Kurbağa balığı

GOBIIDAE

Gobius niger Linnaeus, 1758 Black goby, Stravos,
Kömürcü kaya balığı

PEMPHERIDAE

Pempheris vanicolensis (Cuvier, 1831)

Synonyms: *Pempheris vanicolensis* Cuvier, 1831

Pempheris moluca Bleeker, 1850

Pempheris magula Kner, 1865

Common name: Sweeper

Local names: Ateş balığı, Üçgen balığı (Salamis ruins,
n: 2, ranging 151-154 mm)

D: V, 9-10; A: III, 35-36; P: I, 16; V: I, 5; LI: 55-60

TL/BD: 2.83; TL/HL: 4.02; BD/HL: 1.42; HL/ED: 2.30

Its body is laterally compressed and the belly is
triangular.

Colour: back brownish-pink with small spots on the dorsal and anal fins. It is morphologically characterized by a dark area on the tip of the dorsal fin and the presence of a similar projection on the distal edges of the first few anal rays (Figure 2).



Figure 2. *Pempheris vanicolensis* Cuvier, 1831 (TB: 151 mm)

Ecological characters: This small nocturnal species was first recorded from off Lebanon. Then, it was reported from off Israel. *P. vanicolensis* recorded from the Aegean Sea (Greece) is the best indicator, showing fast westward migration (1, 7, 11, 12, 13, 14). The lack of potential competitors is probably the reason for the population increase in its new habitat. During daylight hours, this species forms large hovering aggregations in caves and rocks. At dusk, it leaves the caves (15, 16).

SIGANIDAE

Siganus rivulatus (Forsskål, 1775) Marbled spinefoot, Prosphygoulla aspri, Beyaz sokar

Order: Pleuronectiformes

BOTHIDAE

Bothus podas (Delaroche, 1809) Wide-eyed flounder, Glossa, Kalkan balığı

References

1. Golani, D. The marine ichthyofauna of the eastern Levant-History, Inventory and Characterization. Israel. Jour. of. Zool. 1996. vol. 42: 15-55.
2. Ben Tuvia, A. Collection of Fishes from Cyprus. The Bull. of the Research Council of Israel. Section B. no.3. 1962. vol. 11: 132-145.
3. Ben Tuvia, A. Red Sea fishes recently found in the Mediterranean. Copeia. 1966. no. 2: 254-275.
4. Ben Tuvia, A. Revised list of the Mediterranean Fishes of Israel. Israel Jour. of Zool. 1971. vol. 20: 1-39.
5. Ben Tuvia, A. Immigration of fishes through the Suez Canal. Fishery Bull. 1977. vol. 6. no. 1:249-255.

SOLEIDAE

Solea lascaris (Risso, 1810) Sand sole, French sole, Dil balığı

Order: Tetraodontiformes

MONOCANTHIDAE

Stephanolepis diaspros Fraser-Brunner, 1940
Chiropsaro, Dikenli çütre, Domuz balığı

Discussion

In this investigation, fish species living on the coasts of the Turkish Republic of Northern Cyprus were determined. For this purpose, fishes comprising 49 species, 42 genera, 32 families, 12 orders, and 2 classes were caught. Of these, 3 were cartilaginous species and 46 bony. Of the bony ones, *P. vanicolensis* was a lessepsian migrant and a new record for the Turkish Republic of Northern Cyprus. The morphometric and meristic characters of the species confirm the references.

In addition to 82 recorded species (9), *R. radula*, *M. helena*, *A. boyeri*, *S. rubrum*, *D. volitans*, *E. guaza*, *A. nigripinnis*, *A. alexandrinus*, *T. ovatus*, *D. sargus*, *O. melanura*, *U. cirrosa*, *L. aurata*, *S. sphyraena*, *T. pavo* and *X. novacula*, *T. draco*, *S. lascaris*, *B. podas* and *P. vanicolensis* were also determined in the present study. It is hoped that new fishes may be added to the present fish fauna of the Turkish Republic of Northern Cyprus with better equipment in the future.

Acknowledgements

The authors wish to thank B. E. Bereketli from the Turkish Republic of Northern Cyprus for his help with the sample collection.

6. Demetropoulos, A. and Neocleus, D. The fishes and Crustaceans of Cyprus. Fisheries Bull. 1969. no. 1: 1-21.
7. Por, F.D. Lessepsian Migration. The influx of Red Sea biota into the mediterranean by way of the Suez Canal ecological studies. Springer-Verlag Berlin Heidelberg New York. vol. 2. 1978.
8. Por, F.D. Lessepsian Migration. An appraisal and new data. Bull. de. Institut oceanographique. 1990. Monaco. no. special 7: 1-9.
9. Benli, H.A., Bilecik, N., Cihangir, B., Katağan, T., Cirik, Ş., Sayın, E., Kaya, M., Koray, T., Çınar, M.E., Salman, A., Sever, M.T., Ünlüoğlu, A., Küçüksezgin, F., Buhan, E., Yılmaz, H., Akalın, S. Balıkçılık Kaynakları. Kuzey Kıbrıs Deniz Alanlarının Biyoekolojisi Üzerine Bir Ön Araştırma. Bodrum. Tarım ve Köyişleri Bakanlığı Su Ürünleri Araştırma Enstitüsü Müdürlüğü. 39-43. 1999. (Seri B, No:4)
10. Whitehead, P.J.P., Bauchot, M.L., Hureau, J.C., Nilsen, J., Tortonese, E., Fishes of the North-Eastern Atlantic and the Mediterranean. Unesco. Paris. vol. 1,2,3. 1984-1986.
11. Papaconstantinou, C. Distribution of the Lessepsian Fish. Biologia Gallo-Hellenica. 1987. 13: 15-20.
12. Papaconstantinou, C. The spreading of Lessepsian fish migrants into the Aegean Sea (Greece). Sci. Mar. 1990. 54 (4): 313-316.
13. Golani, D. & Diamant, A. Biology of the sweeper, *P. vanicolensis* Cuvier and Valenciennes, a Lessepsian migrant in the Eastern Mediterranean with a comparison of original Red Sea population. J. Fish Biol. 1991. 38: 819-820.
14. Gücü, A., Bingel, F., Avşar, D. Distribution and Occurrence of Red Sea Fishes at the Turkish Coast-Northern Cilician Basin. Acta Adriatica. 1994. 34 (1/2): 103-113.
15. Torcu, H. Mater, S. Lessepsian Fishes Spreading Along the Coasts of the Mediterranean and the Southern Aegean Sea of Turkey. Doğa-Tr. J. Zool. 2000. 24 (2): 139-148.