

## **A Taxonomical Study on the Fish of Sabun Suyu and Deliçay Stream (Kilis, Turkey)**

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**Abstract:** This study was carried out between July 2004 and June 2005 in order to determine the fish fauna of Sabun Suyu and Deliçay stream. Totally, 201 fish samples from 8 stations were caught by electro shocker and fishing nets. A total of 4 species from the family Cyprinidae and 5 species from Balitoridae were identified. The systematically characters of each fish species have been explained. Then, these characters have been compared to data recorded with previous taxonomical studies; also the original photographs of every species are showed.

**Keywords:** Sabun Suyu, Deliçay, Fauna, Kilis, Taxonomy

### **Sabun Suyu ve Deliçay (Kilis) Balıklarının Taksonomik Yönden Araştırılması**

**Özet:** Sabun Suyu ve Deliçay'ın balık faunasını ortaya çıkarmak amacıyla Temmuz 2004-Haziran 2005 tarihleri arasında 8 farklı istasyondan toplam 201 örnek elektro-şoker ve balık kepçeleri aracılığıyla yakalanmıştır. Bu çalışma sonucunda Cyprinidae familyasına ait 4 tür ve Balitoridae familyasına ait 5 tür tespit edilmiştir. Balık türlerinin sistematik karakterleri açıklanarak daha önce yapılan çalışmalarla karşılaştırılmış ve her türün orijinal fotoğrafı gösterilmiştir.

**Anahtar Kelimeler:** Sabun Suyu, Deliçay, Kilis, Fauna, Taksonomi

#### **1. Introduction**

The first study on freshwater fish fauna of Turkey was carried out by Abbolt in 1835 according to the Geldiay and Balık (1). Then, a lot of researches have been carried out on freshwater fish fauna of Turkey by both local and foreign researchers. Some of them are Richardson (2), Steindachner (3), Hanko (4), Kosswig (5), Battalgil (6), Sözer (7), Kuru (8), Banarescu, Nalbant and Balık (9), Balık (10), Erdemli (11). But there is no any study related to the fish fauna of the Deliçay and Sabunsuyu stream. These streams flow into the Afrin Stream which is a branch of Asi River. The sources of the Deliçay stream is south of Kızılkent village in the town of Musabeyli. There are Balikli and Üçpınar pond on the this stream. The water obtained from this stream and ponds is used for irrigation. Sabunsuyu stream springs from Çataltepe which is in the western of Gaziantep

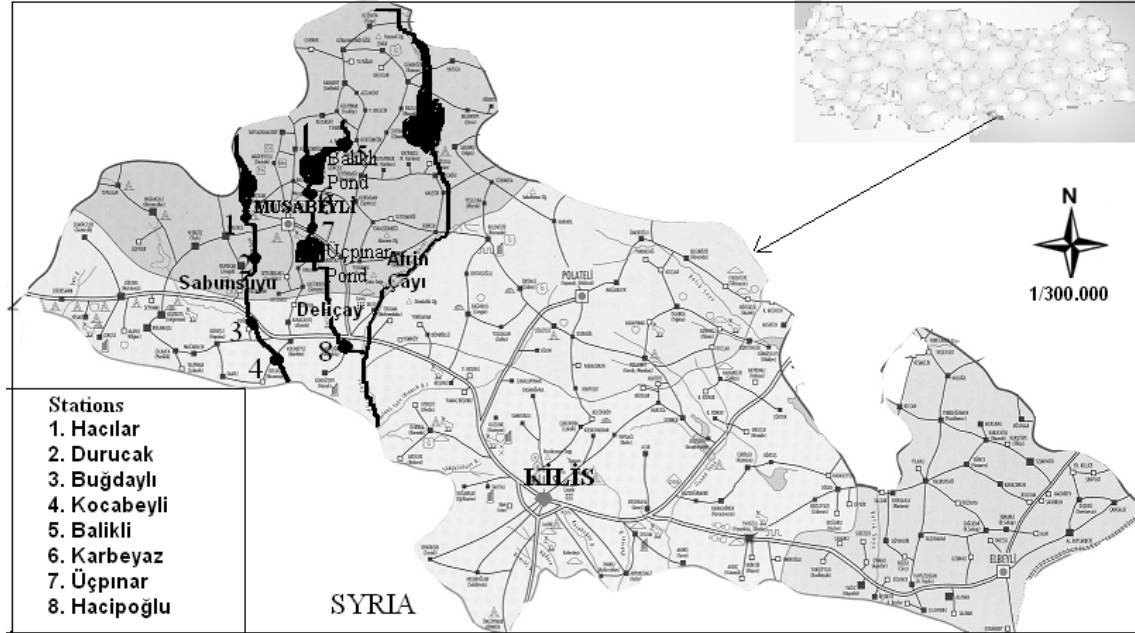
Plato. Sabunsuyu Stream, with a catchment area of 276 km<sup>2</sup>, is a second big stream in the region after Afrin Stream. The length of the stream is about 50 km. Beyond boundary of Syria joints with Afrin stream.

#### **2. Materials and Methods**

This study was carried out between July 2004 and June 2005. The collections of fishes were made at eight selected stations located on Hacılar, Durucak, Buğdaylı, Kocabeyli, Balikli, Karbeyaz, Üçpınar, Hacipoğlu (Figure1). At each station, fish were collected using electro fishing device consisting of two copper electrodes on wooden handles, powered by a 650-watt portable generator. Fishes were then collected using fishing nets or caught by hand. Samples analysed were fixed in 4% formalin and later preserved in 70% ethanol. A milimetric

ruler was used to measure the metric characteristics of the fish samples. As the metric characteristics; total length (T.L.), standard length (S.L.), body depth ( B.D), body width (B.W.), head length (H.L.) and eye diameter (E.D.) were measured. Meristic characteristics

were determined under stereo and binocular microscope. As the meristic characteristics; the number of fin rays (Dorsal: D., Anal: A., Ventral: V., Pectoral: P.), the number of scales on the lateral line (L. Lat.) and pharyngeal teeth were counted.



**Figure 1.** The research area and sampling stations.

### 3. Findings and Discussion

A total of 201 individuals caught from the research areas were represented Cyprinidae by 4 species from 3 genera and Balitoridae by 5 species from 3 genera. These species have been classified according to Kuru (12) and given below.

Phylum: Chordata  
 Subphylum: Vertabrata  
 Cladus: Gnathostomata  
 Superclassis: Pisces  
 Classis: Osteichthyes  
 Subclassis: Actinopterygii  
 Superordo: Teleostei  
 Ordo: Cypriniformes  
 Subordo: Cyprinoidei  
 1. Familia: Cyprinidae  
 2. Familia: Balitoridae

#### Familia: Cyprinidae

##### *Leuciscus lepidus* (Heckel, 1843)

Terra typica: Mossul (Iraq)

Turkish and Local name: Ak Balık

Diagnostic characteristics: According to Çolak (13), D: III/8, A: III/9-10, Lateral line scales are between 48-49.

According to the characteristics of the 35 samples analysed; D: III/(7)8, A: III/9-10. Lateral line scales are between 46-49. Pharyngeal teeth are 2.5-5.2.



Figure 2. *Leuciscus lepidus*

Morphological Characters: Mouth is in dorsal position. While colour is silvery on the flanks and belly, the back is darker. There is orange colour on the fins (Figure 2). The total length is ranged between 8.5-11.5 cm. Body morphometric rations are showed in Table 1. These rations are similar to the findings of Çolak (13), Erdemli (14), Örün and Erdemli (15).

##### *Capoeta barroisi* (Lortet, 1894)

Terra typica: Antakya (Homs Lake)

Turkish and Local name: Siraz, Benekli Balık

Diagnostic characteristics: According to Alp and et al. (16); D: III-IV/8-9, A: III/5, Lateral line scales are between 76-84.

According to the characteristics of the 15 samples analysed D: IV/8-9, A: III/5, Lateral line scales are between 68-76. Pharyngeal teeth are 2.3.4-4.3.2.



Figure 3. *Capoeta barroisi*

Morphological Characters: Mouth is inferior, with one pairs of short barbels. There are fairly dark dots on the body and head (Figure 3). Their body are compressed and deep. Colour is grey at back and whitish belly. While dorsal fin is lightly concave, pectoral, ventral and anal fin are convex. The last unbranched ray of the dorsal fins is ossified (3/4) and its rear edges are serrated. The total length is ranged between 13-25 cm. Body morphometric rations are showed in Table 1. These rations are similar to the findings of Bostancı (17). However, H.L/E.D rations in our study were found smaller than that in Bostancı (17).

##### *Capoeta damascina* (Valenciennes, 1842)

Terra typica: Jordon river (Israel)

Turkish and Local name: Siraz, Sarı Balık

Diagnostic characteristics: According to Pellegrin (18); D: III-IV/8-9; A: III/5; L.lat: 68-75.

According to the characteristics of the 20 samples analysed; D: IV/8-9; A: III/5; L.lat: 65-75. Pharyngeal teeth are 2.3.4- 4.3.2



Figure 4. *Capoeta damascina*

Morphological Characters: The last unbranched ray of the dorsal fins is ossified and

its rear edges are serrated. While the back and flanks are brownish, belly is yellowish. (Figure 4). Mouth is inferior position, a pair of short barbels at its corner. The total length is ranged between 13.5-23 cm. Body morphometric rations are showed in Table 1. These rations are similar to the findings of Bostancı (17). However, H.L/E.D rations in our study were found smaller than that in Bostancı (17).

### ***Garra rufa* (Heckel, 1843)**

Turkish and Local name: Kaya Balığı, Vantuzlu Balık

Terra typica: Aleppo (Syria)

Diagnostic characteristics: According to Ekingen and Sarıyüboğlu (19); D: III/8-9, A: II/5, Lateral line scales are between 35-40.

According to the characteristics of the 25 samples analysed; D: III/8, A: II/5, L.Iat.: 36-38. Pharyngeal teeth are usually 2.4.5-5.4.2.



**Figure 5.** *Garra rufa*

Morphological Characters: Mouth is inferior and horseshoe-shaped. Two pairs of barbels are present. One of pairs is in the corners of the mouth, the other on tip of the snout (Figure 5). Overall colour is brownish-olive to dark green and a yellowish to whitish belly. There is a black spot on the caudal peduncle at the base of the caudal fin. There are breeding tubercles on the front and sides of the snout. The total length is ranged between 7.5-13 cm. Body morphometric rations are showed in Table 1. These rations are similar to the findings of Erdemli and Kalkan (20), Dağlı and Erdemli (21).

### **Familia: Balitoridae**

#### ***Barbatula panthera* (Heckel, 1843)**

Terra typica: Damascus (Syria)

Turkish and Local name: Çöpcü Balığı

Diagnostic characteristics: According to Kuru (12); D: II-III/7-8(9), A: II/5, V: I/6

According to the characteristics of the 34 samples analysed; D: III/8-9, A: II/5, P: I/8-9, V:

I/5-6.



**Figure 6.** *Barbatula panthera*

Morphological Characters: Three pairs of barbels are present. One of pairs is at the corners of the mouth, the others on tip of the snout. Body is weakly compressed on the sides. There are numerous irregular shaped dots on the yellowish-white body. The dorsal and caudal fins have dots in 2-3 rows. Lateral line is incomplete and ending in middle of the dorsal fin level (Figure 6). The total length is ranged between 5.0-8.4 cm. Body morphometric rations are showed in Table 1. These rations are similar to the findings of Kuru (12), Erdemli and Kalkan (20), Çolak (13).

### ***Paracobitis tigris* (Heckel, 1843)**

Turkish and Local name: Çöpcü Balığı

Terra typica: Aleppo (Syria)

Diagnostic characteristics: According to Erdemli and Kalkan (20); D: II-III/(7)8(9), A: II/5.

According to the characteristics of the 31 samples analysed; D: III/8, A: II/5-6.



**Figure 7.** *Paracobitis tigris*

Morphological Characters: Lateral line incomplete, ending in the middle of the dorsal fin level. The body and caudal peduncle are deep. The caudal fin has a very shallow fork and its lobes are rounded. A dermal crest is present both dorsally and ventrally. Body marked with 12 to 15 vertical bands (Figure 7). The total length is ranged between 5.2-8.5 cm. Body morphometric rations are showed in Table 1. These rations are similar to the findings of Kuru (12), Erdemli and Kalkan (20).

***Oxynoemacheilus argyrogramma***  
(Heckel, 1846)

Terra typica: Aleppo (Syria)

Turkish and Local name: Çöpcü Balığı

Diagnostic characteristics: According to Pellegrin (18); D: III/8, A: II/5, P: I/9-10, V: I/5-6

According to the characteristics of the 16 samples analysed; D: III/8, A: II/5, P: I/9-11, V: I/6-7.



Figure 8. *Oxynoemacheilus argyrogramma*

Morphological Characters: The body is slender and compressed, particularly posterior. The overall colour is yellowish-white. There are 10-12 irregular dark brown bars on the body. The bars are frequently interrupted at the lateral line. A black bar usually runs from the eye obliquely forward on the snout. The dorsal fin origin is at mid-body (Figure 8). The lateral line extends to the base of the caudal peduncle. Ventral fin extends to the base of the anal. The total length is ranged between 6.3-7.1cm. Body morphometric ratios are showed in Table 1. These ratios are similar to the findings of Bostancı (17). However, H.L/E.D ratios in our study were found bigger than that in Bostancı (17).

***Oxynoemacheilus samantica*** (Banareescu and Nalbant, 1968)

Terra typica: Ceyhan River (Turkey)

Turkish and Local name: Çöpcü Balığı

Diagnostic characteristics: According to Bostancı (17); D: II/8, A: II/5, P: I/10-12, V: I/5-7.

According to the characteristics of the 17 samples analysed; D: III/8, A: II/5, P: I/9-10, V: I/6-7.



Figure 9. *Oxynoemacheilus samantica*

Morphological Characters: The flank is minutely scaled and the lateral line is well-developed along the whole flank. There are 8-10 irregular dark brown dots on the body. The dots are frequently lined up on the lateral line (Figure 9). The total length is ranged between 5.7-7.0 cm. Body morphometric ratios are showed in Table 1. These ratios are similar to the findings of Bostancı (16). However, H.L/E.D ratios in our study were found bigger than that in Bostancı.

***Paracobitis malapterura*** (Valenciennes, 1846).

Terra typica: Syria

Turkish and Local name: Çöpcü Balığı

Diagnostic characteristics: According to the characteristics of the 8 samples analysed; D: III/7-8, A: III/5, P: I/10-12, V: I/6-7.



Figure 10. *Paracobitis malapterura*

Morphological Characters: Lateral line is incomplete and ending in front of the dorsal fin level. The dorsal and anal fins are concave while edges of caudal fin are almost straight. A well developed dermal crest is present both dorsally and ventrally on the caudal peduncle. Dorsal crest extend posterior to the level of the dorsal fin and there are 4-5 row of dark dots on the dorsal crest (Figure 10). Body marked with 10 to 13 vertical bands. The total length is ranged between 6.1-8.7 cm. Body morphometric ratios are showed in Table 1.

**Table 1.** The body ratios of fish examined. The values were given minimum-maximum and mean  $\pm$  standard deviation

Fish species	S. L / B. D	S. L / H. L	B.D./B.W	H. L. / E.D
<i>L. lepidus</i> n=35	3.5-4.5 3.80 $\pm$ 0.25	3.7-4.1 3.76 $\pm$ 0.14	1.6-1.9 1.68 $\pm$ 0.12	3.2-3.7 3.45 $\pm$ 0.18
<i>C. barroisi</i> n=15	3.6-4.0 3.70 $\pm$ 0.17	4.0-4.7 4.31 $\pm$ 0.15	1.5-1.8 1.55 $\pm$ 0.15	3.4-4.6 3.81 $\pm$ 0.30
<i>C. damascina</i> n=20	3.8-4.8 4.34 $\pm$ 0.26	4.1-4.7 4.44 $\pm$ 0.20	1.4-1.7 1.50 $\pm$ 0.12	3.6-4.4 4.10 $\pm$ 0.25
<i>G. rufa</i> n=25	3.9-4.5 4.15 $\pm$ 0.20	4.0-4.7 4.37 $\pm$ 0.18	1.2-1.6 1.33 $\pm$ 0.12	4.2-5.2 4.75 $\pm$ 0.30
<i>O. panthera</i> n=34	4.5-5.6 4.79 $\pm$ 0.29	4.0-4.7 4.43 $\pm$ 0.20	1.3-1.5 1.40 $\pm$ 0.10	6.1-6.8 6.36 $\pm$ 0.30
<i>P. tigris</i> n=31	5.8-6.6 6.10 $\pm$ 0.30	4.1-4.7 4.40 $\pm$ 0.18	1.2-1.5 1.35 $\pm$ 0.10	4.9-5.6 5.2 $\pm$ 0.25
<i>O. argyrogramma</i> n=16	5.1-5.6 5.28 $\pm$ 0.26	4.0-4.5 4.26 $\pm$ 0.20	1.3-1.6 1.40 $\pm$ 0.15	6.9-7.7 7.54 $\pm$ 0.22
<i>O. samantica</i> n=17	5.0-6.0 5.61 $\pm$ 0.28	3.9-4.7 4.28 $\pm$ 0.18	1.2-1.6 1.36 $\pm$ 0.16	7.0-7.8 7.5 $\pm$ 0.25
<i>P. malapterura</i> n=8	5.0-5.7 5.38 $\pm$ 0.10	4.0-4.5 4.36 $\pm$ 0.20	1.3-1.6 1.40 $\pm$ 0.10	5.3-5.6 5.4 $\pm$ 0.15

#### 4. Conclusion

The water of Sabun Suyu and Deliçay streams flow in to Asi River by Afrin stream. Mediterranean climate with hot, dry summers and mild, wet winters prevails in the area. In the winter and spring months when it rains alot but there is little evaporation the flow rate of these streams is high; however, in summer and autumn months when it rains less, but there is more evaporation, the flow rate of these stream is low. In recent years, since the water obtained from these streams is used for irrigation, these streams completely dry in the summer months. We think that this situation may have negatively affected species of fish. Because of the construction of the Balikli and Üçpınar ponds on the Deliçay stream and fish farm established in these ponds, extant fish kinds must be taken into consideration. Otherwise, fish diversity can reduce.

At result of this study, *Leuciscus lepidus*, *Capoeta barroisi*, *Capoeta damascina*, *Garra rufa* belong to Cyprinidae and *Barbatula panthera*, *Paracobitis tigris*, *Paracobitis malapterura*, *Oxynoemacheilus samantica*, *Oxynoemacheilus argyrogramma* belong to Balitoridae were identified at every two stream systems. Species of Balitoridae family are not economically important since very small fish. But they are an important ecological link in the food chain. They are also important indicators of water quality and ecosystem health.

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