

## Historic Studies of Turkey's Freshwater Fish Fauna

There have been many studies of the freshwater fauna of Turkey.

All studies reported by foreigners and Turkish researchers <sup>since</sup> from 1835 include:  
ABBOTT (1835) (Salmonidae), RICHARDSON (1856) (Gobiidae, Cyprinidae),  
and (Salmonidae), DEYROLLE (1827) (Alburnus tarichi); GAILLARD (1895)  
(Cyprinodon sophiae and Cyprinodon chantrei); BOULENGER (1896) (Barbus  
lydianus, Capoeta holmwoodii, Leuciscus smyrnaeus); STEINDACHNER (1897)  
12 species; LEIDENFROST (1912) (Cyprinodon); DEVEDJIAN (1915); HANKO  
(1924) 27 species; PELLEGREN (1928) Hemigrammocapoeta culiciphaga;  
PELLEGREN and HENRI GADEAU DE KERVILLE (1928) 35 fish species;  
PIETSCHMANN (1933) (Schizothorax prophylax and Varicorhinus pestai)  
NEU (1933-1937) (Clupeonella muhlisi and Cyprinodon sureyanus); Prof.  
Dr. E. KOSSWIG (1937) <sup>many others</sup> studied on many fishes species. Systematic and  
ecologic origin studies slowed down in 1940 <sup>for</sup> by many reasons, but activated  
after World War II, for example,  
KOSSWIG (1950-1953), TORTONESE (1952, 1954, 1955), SLASTENENKO (1955-1956)  
LADIGES (1960, 1964, 1966), MUNZING (1962), BANARESCU-NALBANT (1964),  
LUEKEN (1967), BANARESCU (1968), WHITTAL (1967), BEHNKE (1968) and  
KARAMAN (1969, 1971), started working and helped Turkish researchers.

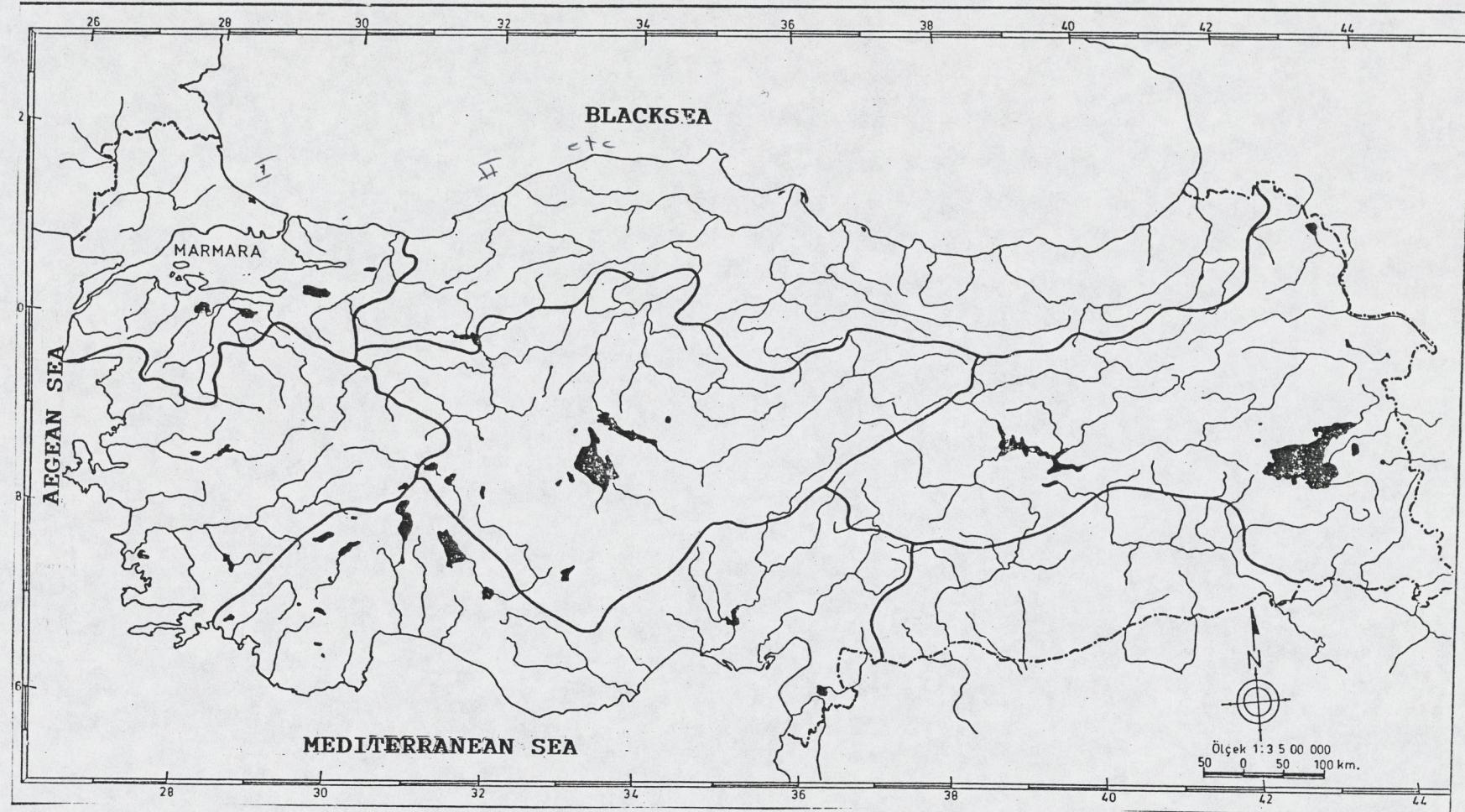
① There are three <sup>major</sup> seas around Turkey and one landlocked sea, many rivers, streams, lakes, dams, most of them contain various species and varieties. Fishing in these water. Many of fishermen have enjoyed sport fishing in Turkey. been coming to our pleasant yare after year in cool nights and fast stream and rivers with there sporting fish. Most of them are abundant enough, and suitable, for harvest and sale as <sup>good</sup> bait species.

① You should include a map indicating drainage patterns of Turkey - to Black, Caspian, Mediterranean seas, Tigris-Euphrates, and internal (landlocked) basins. - Fig. 1. needs descriptive text to identify above.

Others are beautiful form and color. All are important in the intricate interweaving of the complex aquatic ecosystem. Origin of the lakes is differnt. Most of them are natural, some of them are volcanic, a few are ~~an~~ artificial. Many species in Turkey are commonly sought by anglers for food or sport. Some of the species little known represent untapped sources of protein avaible for human consumption. Fish communities of each water system basin differ in species composition. Also historic distribution of fish species has been greatly charged by habitat alteration, man's modification of the physical and chemical environment and fish stocking programs.

~~European~~ Some parts of Turkey located on Europe land ( $28.000 \text{ km}^2$ ) and a big part located among the Blackr Sea, Sea of Marmara, the Aegean and the Mediterranean ( $744.000 \text{ km}^2$ ), other parts consist of uneven mountains and large valley ( $772.000 \text{ km}^2$ ). It has about 7200km seashore and total 175,000 km rivers, 203,000 hectare lakes, and more than 100.000 hectare dam lakes, innumerable inland waterway,steram.

Eventually each habitat come to have a distinct fauna adapted to various habitat types within lakes, sea, rivers and streams. several species are limited to only lakes and others are found state-wide. Some lakes is supported by the branch of the river. Several river Which arise in the mountains. Some rivers join to sea. Flowing changes part to part. Dicle, Firat, Seyhan, Ceyhan, Kizilirmak are very deep and ~~so~~ wide .Many species that are able to tolerate the severe conditions in these areas could survive. Some ecological conditions make changes flowing and level of the water. Mis-



**Figure 1: Turkey's principal rivers, lakes and dams**

I - descriptions of drainage - - -

II

III

e.g.

dentifications and taxonomic reclassifications are thought to account for difference. There has been little study of fishes some in a little rivers and lakes.

### Habitat Types in Turkey

Fish communities differ in the various river and lakes, some of the habitat types are quite similar. East part of Turkey water sources have cold water. Cold water source comes from ~~top of the~~ mountain<sup>sources</sup>. Water flows out of the hills. Water is also clean and flows rapidly. River substrate is commonly composed of gravel to boulder size rubble. Dissolved oxygen levels are usually very high with low dissolved solids and cold water temperatures. Stream are frequently shaded by trees and grasses. Stream and smaller rivers merge to form the river habitat. Stream speed still remains high , especially during the spring run off as snow melts in the high country. During periods of low flow, stream velocity in eddies can be quite and longuid. The stream substrate is composed of boulders and large rocks in the rapids. Gravel and sand bars found in areas of slower water. Some areas is usually covered by mud and silt. Oxygen content of the water is usually high while dissolved salt concentrations are moderate and summer water temparatures are rather warm. River banks are composed of sedimentary rock gravel and beaches. Bottom of the lakes is usually composed of moderate-sized cobble, sedimentary rock gravel or silt and mud. During the summer temperatures can be warm. Dissolved salt concentrations and oxygen change from the season to season by ~~temparatures~~. Deep vegetation is grass and shrubs. Total dissolved oxygen concentrations increase to a level of lakes. In these regions found fish species are able to

tolerate draught, changing habitat, ecologic conditions, flooding and turbidity. Algal growths is covered river bed. Algal growths utilize oxygen for respiration, dissolved oxygen levels fall at night. Oxygen levels can be so low at night that fish species are eliminated. The number of fish species found in the cold water and warm water portion are both present.

Individual species <sup>few many extinct, very rare sp., ></sup> have become rare, some disappeared entirely. Other species are tolerant of altered habitat conditions, have expanded in range and number. Industrial (Cleaning compounds, petroleum products, ammonia, pesticides and herbicides), domestic and agricultural activities have all contributed to the reduction of the states fish fauna. These kind of activities more effect fish in the sea and lakes in Turkey. Acidic, metallic waste effluents were dumped directly into sea. Sometimes they effect river. Fish population in many rivers and lakes are reduced or is gone by all the causes.

#### Turkey's Freshwater Fish General Classification

Turkey's freshwater fish <sup>es may be grouped into superorders</sup> classified two classis **Chondrostei** and **Teleostei**. Chondrostei classis constitute a <sup>few species</sup> small group of the <sup>of sturgeon,</sup> freshwater fish. It has one familia. Many fish include Teleostei class.

Turkey's freshwater fish fauna can classify two classis, five superorder and 23 families.

TURKEY FRESHWATER FISH GENERAL CLASSIFICATION

Phylum : Chordata  
S.phylum : Vertebrata  
~~Class~~ : Chondrostei superorder or ~~infraclass~~ cl<sup>ss</sup>  
Order : Acipenseriformes  
Familia : Acipenseridae  
Genus : Huso  
            Huso huso  
Genus : Acipenser  
            Acipenser sturio  
            Acipenserstellatus  
            Acipenser guldenstaedti  
~~infraclass~~ : Teleostei  
~~Superorder~~ : Elopomorpha  
Order : Anguilliformes  
Familia : Anguillidae  
Genus : Anguilla  
            Anguilla anguilla  
Order : Mastacembeliformes → not part of superorder  
Familia : Mastacembelidae  
Genus : Mastacembelus simack  
Superorde : Clupeomorpha  
Order : Clupeiformes  
Familia : Clupeidae  
Genus : Alosa  
            Alosa fallax nilotica  
            Alosa (Caspialosa) caspia nordmanni  
            Alosa (Caspialosa) caspia tanaica  
            Alosa (Caspialosa) maeotica  
            Caspialosa caspia  
Genus : Clupeonalla  
            Clupeonela abrau muhlisi  
Superorder : ~~P~~latacanthopterygii  
Order : Salmoniformes  
Familia : Salmonidae  
Genus : Salmo  
            Salmo trutta macrostigma  
            Salmo trutta abanticus ~~s.~~ platycephalus?  
            Salmo trutta labrax  
            Salmo trutta caspius  
Familia : Esocidae  
Genus : Esox  
            Esox lucius  
Superorder : Ostariophysi  
Order : Cypriniformes  
Familia : Cyprinidae  
Genus : Cyprinus  
            Cyprinus carpio

Genus : *Carassius*  
          *Carassius carassius*

Genus : *Aramis*  
          *Aramis brama*

Genus : *Acanthobrama*  
          *Acanthobrama marmid*  
          *Acanthobrama mirabilis*

Genus : *Alburnoides*  
          *Alburnoides bipunctatus*

Genus : *Alburnus*  
          *Alburnus alburnus*  
          *Alburnus akili*  
          *Alburnus filippi*  
          *Alburnus heckeli*  
          *Alburnus albidus*  
          *Alburnus orontis*

Genus : *Vimba*  
          *Vimba vimba*

Genus : *Scardinus*  
          *Scardinius erythrophthalmus*

Genus : *Phoxinellus*  
          *Phoxinellus zeregi*  
          *Phoxinellus zeregi kelvillei*  
          *Phoxinellus zeregi meandri*  
          *Phoxinellus zeregi fahirae*  
          *Phoxinellus crassus*  
          *Phoxinellus handlirschi*  
          *Phoxinellus (Spinophoxinellus) anatolicus*

Genus : *Rhodeus*  
          *Rhodeus sericeus amarus*

Genus : *Leuciscus*  
          *Leuciscus borysthenicus*  
          *Leuciscus cephalus*  
          *Leuciscus lepidus*

Genus : *Ladigesocypris*  
          *Ladigesocypris ghigii*

Genus : *Hemigrammocapoeta*  
          *Hemigrammocapoeta kemali*  
          *Hemigrammocapoeta sauvagei*

Genus : *Gobio*  
          *Gobio hettitorum*  
          *Gobio gobio*  
            *Gobio gobio gymnostethus*  
            *Gobio gobio microlepidotus*  
            *Gobio gobio intermedius*  
            *Gobio gobio insuyanus*  
          *Gobio persus*

Genus : *Cyprinion*  
          *Cyprinion macrostomum*

Genus : *Garra*  
          *Garra rufa*  
          *Garra variabilis*

Genus : Chondrostoma  
Chondrostoma nasus  
Chondrostoma regium

Genus : Blicca  
Blicca bjoerkna

Genus : Aspius  
Aspius aspius  
Aspius vorax

Genus : Tor  
Tor grypus

Genus : Carassobarbus  
Carassobarbus luteus

Genus : Kosswigobarbus kosswigi ~~X~~  
Kosswigobarbus kosswigi

Genus : Barbus  
Barbus murza  
Barbus plebejus  
Barbus plebejus esherichi  
Barbus plebejus ercisanus  
Barbus plebejus lacerta  
Barbus plebejus kosswigi  
Barbus rajanorum  
Barbus capito  
Barbus capito capito  
Barbus capito pectoralis  
Barbus esocinus  
Barbus xanthopterus

Genus : Rutilus  
Rutilus rutilus  
Rutilus rubilio  
Rutilus tricolar  
Rutilus frisii

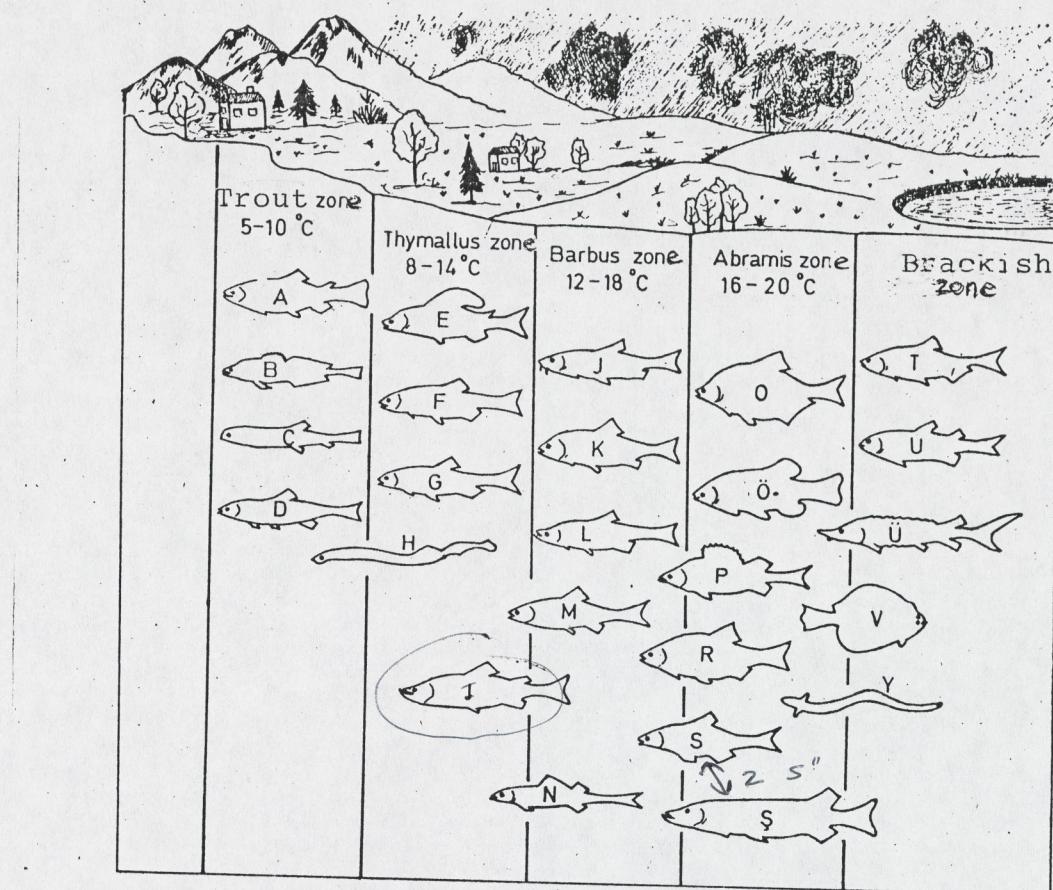
Genus : Chacalburnus  
Chacalburnus chalcoides  
Chacalburnus mossulensis  
Chacalburnus sellal  
Chacalburnus tarichi

Genus : Phoxinus  
Phoxinus phoxinus

Genus : Capoeta  
Capoeta tinca  
Capoeta pestai  
Capoeta trutta  
Capoeta barroisi  
Capoeta capoeta  
Capoeta capoeta capoeta  
Capoeta capoeta bergamae  
Capoeta capoeta sieboldi  
Capoeta capoeta umbla  
Capoeta capoeta kosswigi  
Capoeta capoeta angorae

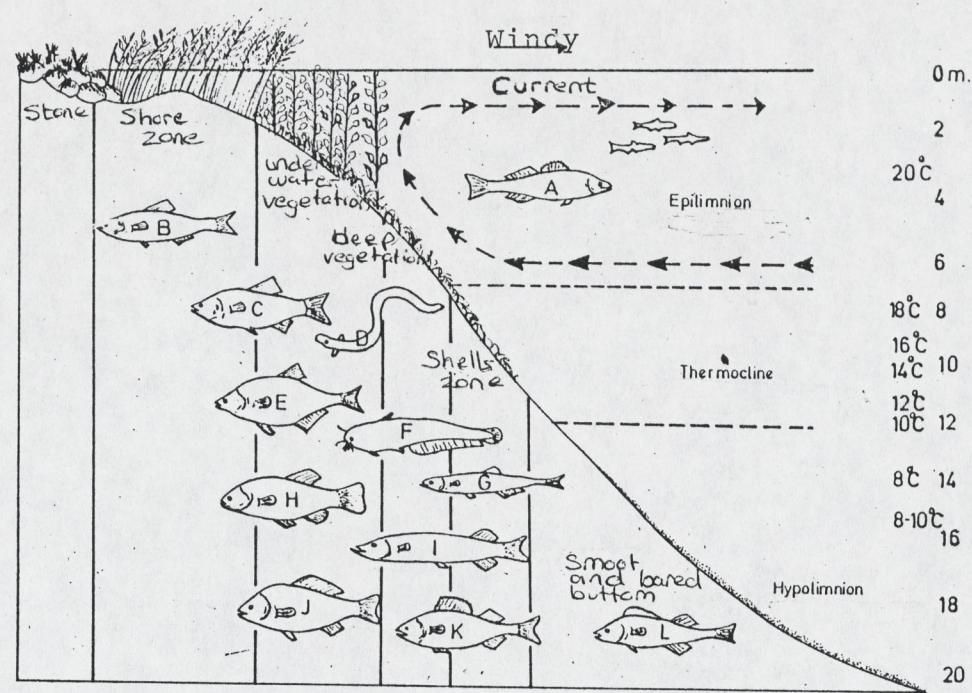
Genus : *Leucalburnus*  
          *Leucalburnus satunini*  
          *Leucalburnus kosswigi*  
Familia : Cobitidae  
Genus : *Cobitis*  
          *Cobitis taenia*  
          *Cobitis simplicipinna*  
          *Cobitis aurata*  
          *Cobitis elongata*  
          *Cobitis elongata bilseli*  
Genus : *Nemacheilus*  
          *Nemacheilus tschaiyssuensis*  
          *Nemacheilus lendli*  
          *Nemacheilus tigris*  
          *Nemacheilus angorae*  
          *Nemacheilus malapterurus*  
          *Nemacheilus argyrogramma*  
          *Nemacheilus panthera*  
          *Nemacheilus insignis*  
Genus : *Turcinemacheilus*  
          *Turcinemacheilus kosswigi*  
Order : Siluriformes  
Familia : Siluridae  
Genus : *Silurus*  
          *Silurus glanis*  
Familia : Ariidae  
Genus : *Arius*  
          *Arius coua*  
Familia : Bagridae  
Genus : *Mystus*  
          *Mystushalepensis*  
          *Mystus colvillii*  
Familia : Sisoridae  
Genus : *Glyptothorax*  
          *Glyptothorax kurdistanicus*  
          *Glyptothorax armeniacum*  
Familia : Clariidae  
Genus : *Clarias*  
          *Clarias lazera*  
Superorde : Acanthopterygii  
Order : Gasterosteiformes  
Familia : Gasterosteidae  
Genus : *Gasterosteus*  
          *Gasterosteus aculeatus*  
Familia : Syngnathus  
Genus : *Syngnathus*  
          *Syngnathus abaster*  
Order : Cyprinodontiformes  
Familia : Cyprinodontidae  
Genus : *Aphanius*  
          *Aphanius burduricus*  
          *Aphanius anatolias*  
          *Aphanius chantrei*  
          *Aphanius cyprius*

Familia : Poecilidae  
Genus : Gambusia  
Order : Mugiliformes  
Familia : Mugilidae  
Genus : Mugil  
          Mugil cephalus  
          Mugil (Liza) Abu  
          Mugil (Liza) ramada  
          Mugil (Liza) auratus  
          Mugil (Protomugil) saliens  
          Mugil (Chelon) labrosus  
          Mugil (Oedalechilus) labeo  
Familia : Atherinidae  
Genus : Atherina  
          Atherina boyeri  
Order : Perciformes  
Familia : Percidae  
Genus : Perca  
          Perca fluviatilis  
Genus : Stizostedion  
          Stizostedion lucioperca  
Familia : Blenniidae  
Genus : Blennius  
          Blennius fluviatilis  
Familia : Gobiidae  
Genus : Gobius  
          Gobius (Mesogobius) batrachocephalus  
          Gobius (Babka) gymnotrachelus  
          Gobius melanostomus melanostomus  
          Gobius fluviatilis fluviatilis  
          Gobius cephalarges cephalarges  
          Gobius (Ponticola) ratan  
          Gobius platyrostris  
          Gobius (Zosterisessor) ophiocephalus  
Genus : Pomatoschistus  
          Pomatoschistus microps leopardinus  
Genus : Proterorhinus  
          Proterorhinus marmoratus  
Order : Pleuronectiformes  
Familia : Pleuronectidae  
Genus : Plactichthys  
          Platichthys flesus



**Figure 3:At the stream fish distribution varieties to zone**

**A**-Salmo trutta **B**-Cottus gobio **C**-Noemacheilus  
barbatulus **D**-Phoxinus phoxinus **E**-Thymallus  
thymallus **F**-Leuciscus cephalus **G**-Chondrostoma  
nasus **H**-Lampetra fluviatilis **J**-Barbus barbus  
**K**-Leuciscus idus **L**-Aspius aspius **M**-Leuciscus  
leuciscus **N**-Aspro zingel **O**-Abramis brama  
**P**-Tinca tinca **R**-Perca fluviatilis **S**-Scardinius  
erytrophthalmus **T**-Esox lucius **U**-Mugil cephalus  
**V**-Acipencer sturio **Y**-Pleuronectes flesus  
**Z**-Anguilla anguilla

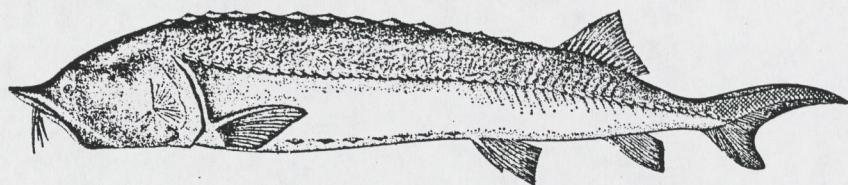


**Figure 2: According to zones vertical distribution of the fish**

- A-Stizostedion lucioperca
- B-Rutilus rutilus
- C-Scardinius erythrophthalmus
- D-Anguilla anguilla
- E-Abramis brama
- F-Silurus glanis
- G-Alburnus alburnus
- H-Tinca tinca
- I-Esox lucius
- J-Carassius carassius
- K-Perca fluviatilis
- L-Acerina cernua

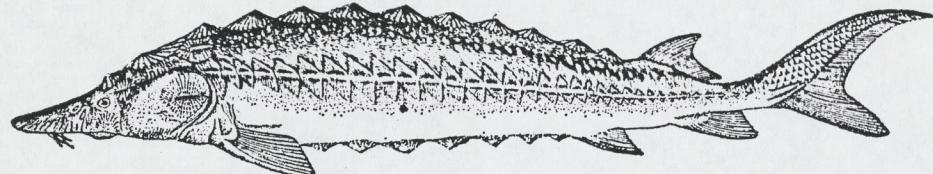
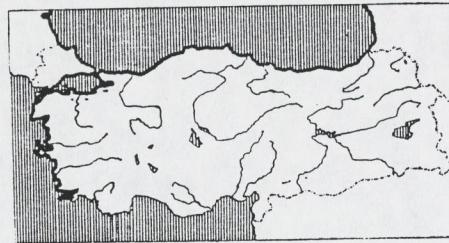


where is  
distribution?



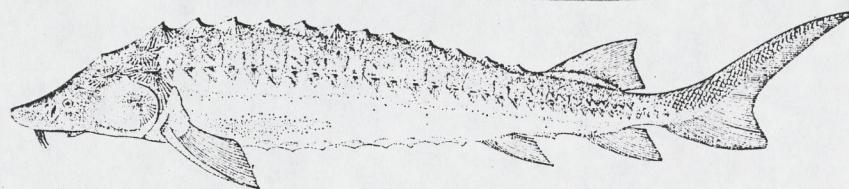
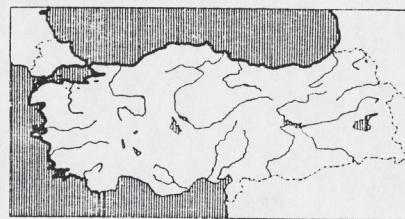
**Huso huso** (Beluga)

(Turkish name: Mersin Morinasi)



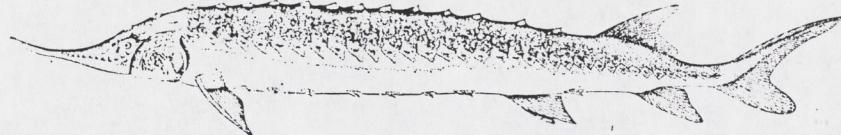
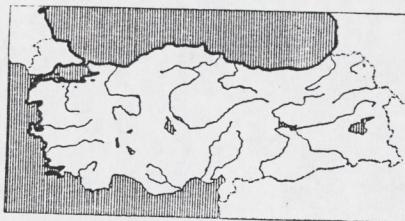
**Acipenser sturio** (Sturgeon)

(Kolan baligi)

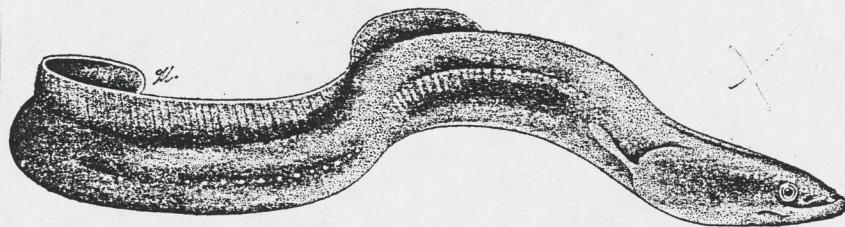
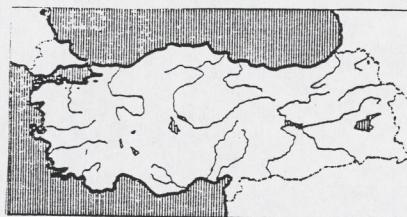


**Acipenser gueldenstaedti** (Russian sturgeon)

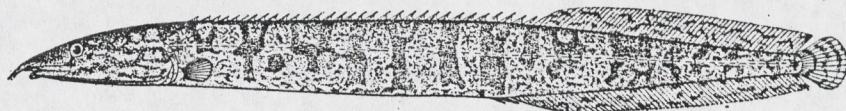
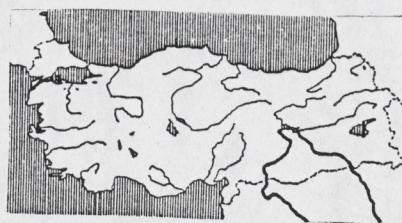
(Rus Mersin baligi)



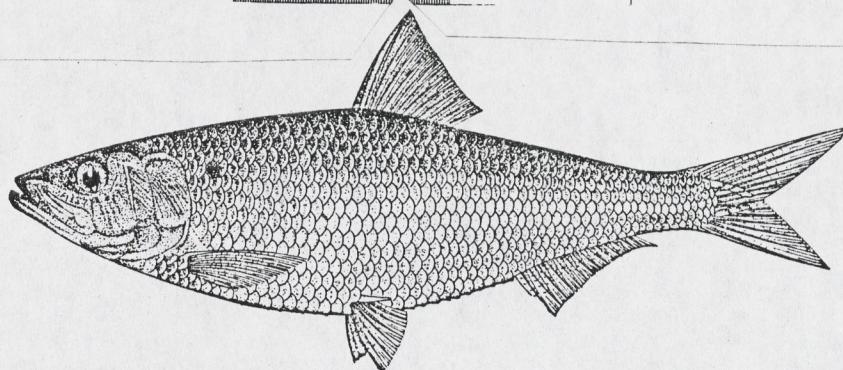
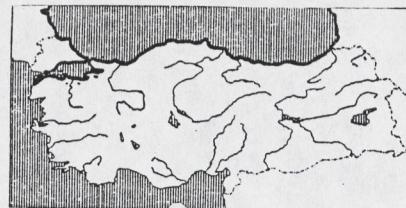
**Acipenser stellatus** (Stellate, sturgeon)  
(Mersin baligi)



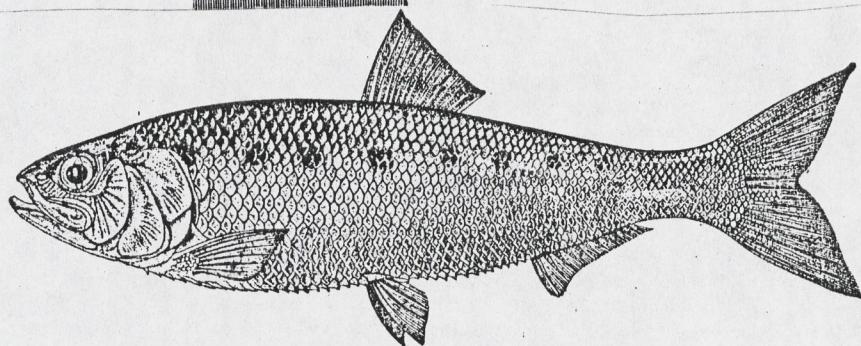
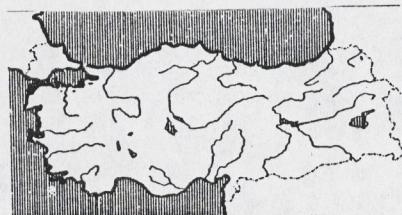
**Anguila anguilla** (Eel)  
(Yilan baligi)



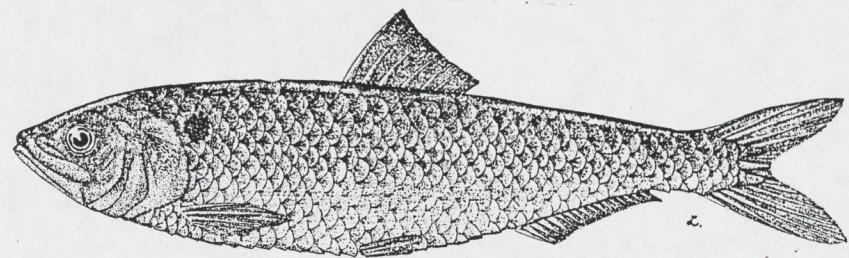
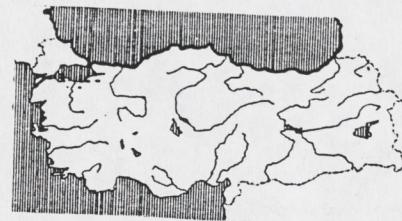
**Mastacembelus simack** (Spiny eel)  
(Dikenli yilan baligi)



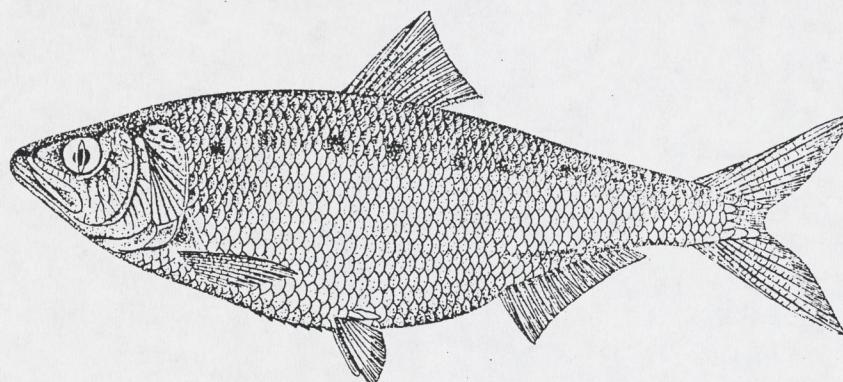
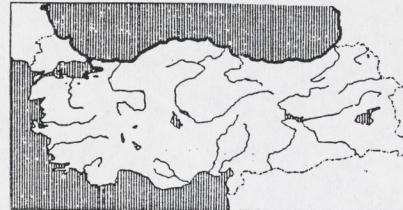
**Alosa (Caspialosa) maeotica**  
(Ringa baligi)



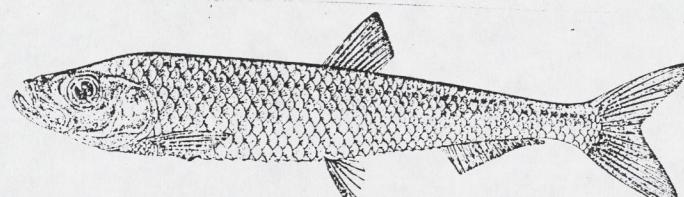
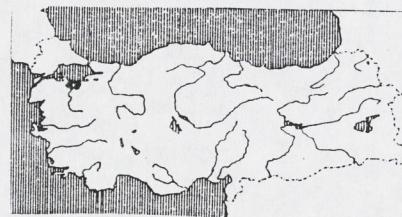
**Alosa fallax nilotica** (Twaite shad)  
(Tirsi baligi)



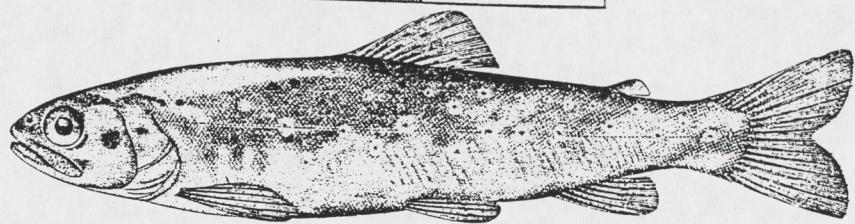
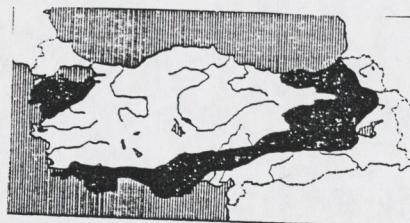
**Alosa (Caspialosa) caspia nordmanni**  
(Caspian shad) (Tirsi baligi)



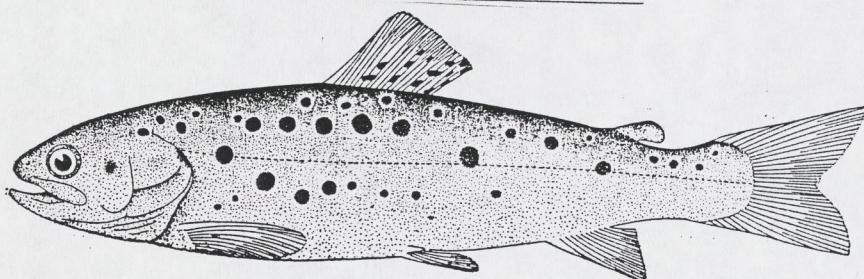
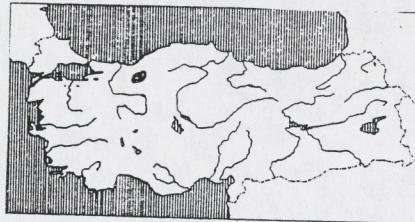
**Alosa (Caspialosa) caspia tanaica**  
(Ringa baligi)



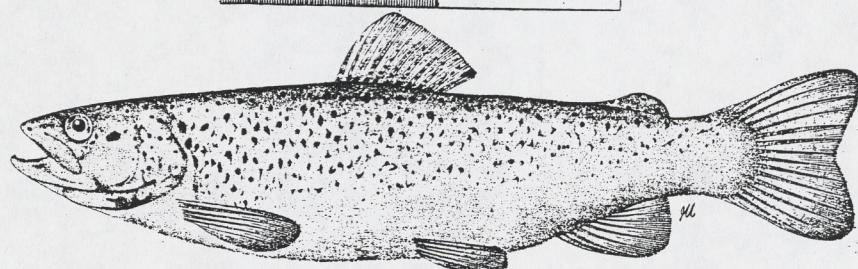
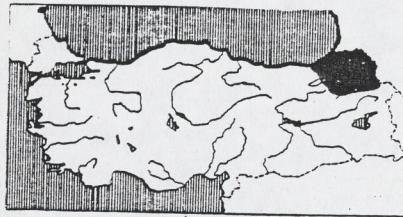
**Clupeonella abrau muhlisi**  
(Cuce ringa baligi)



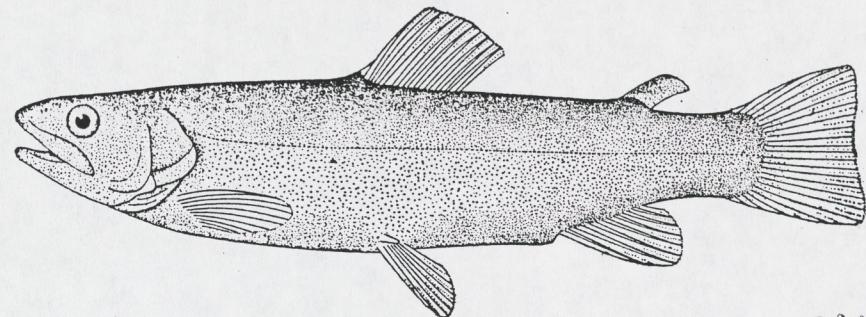
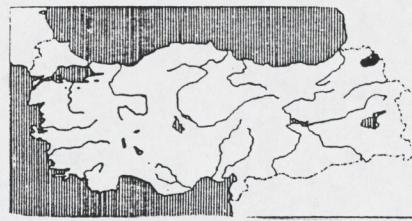
**Salmo trutta macrostigma**  
(Dag alabaligi=Mountain trutta)



**Salmo trutta abanticus**  
(Gol alabaligi = Lake trutta)



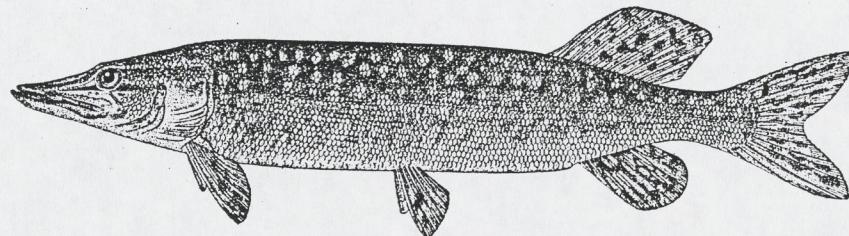
**Salmo trutta labrax**  
(Alabalik,deniz alasi)



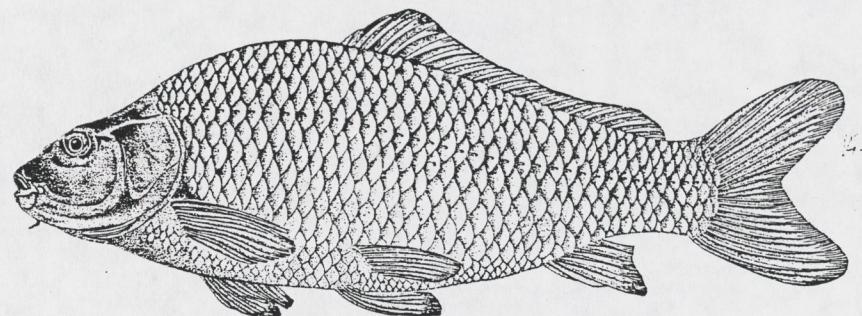
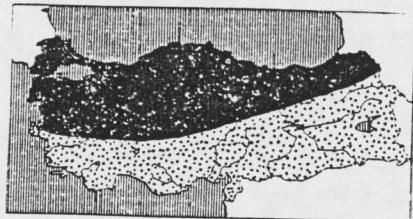
**Salmo trutta caspius**  
(Alabalik)

no spots ?

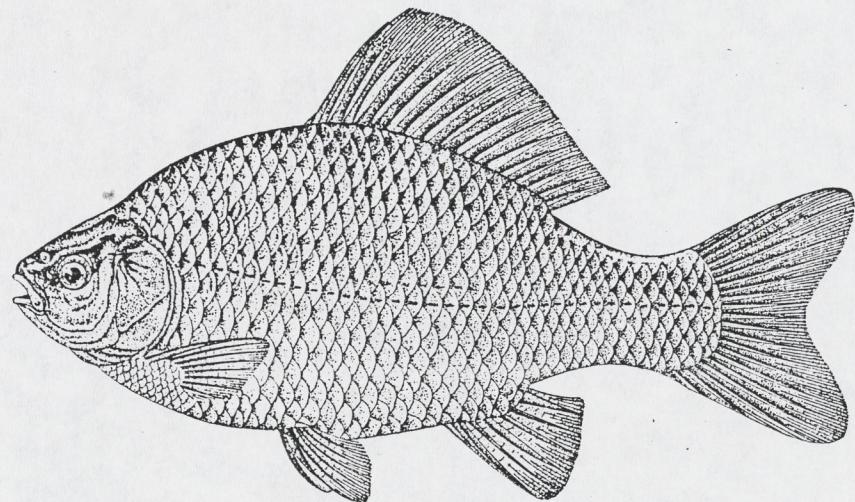
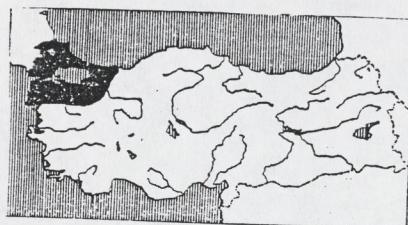
Salmo platycephalus ?



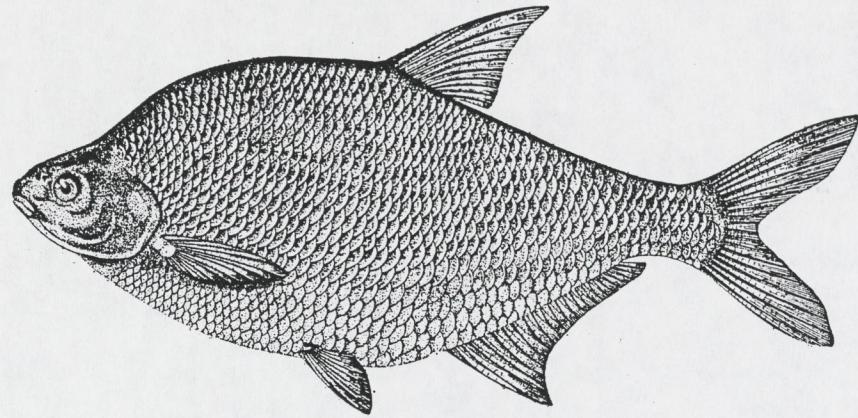
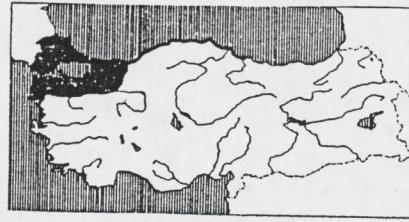
**Esox lucius** (Pike)  
(Turna baligi)



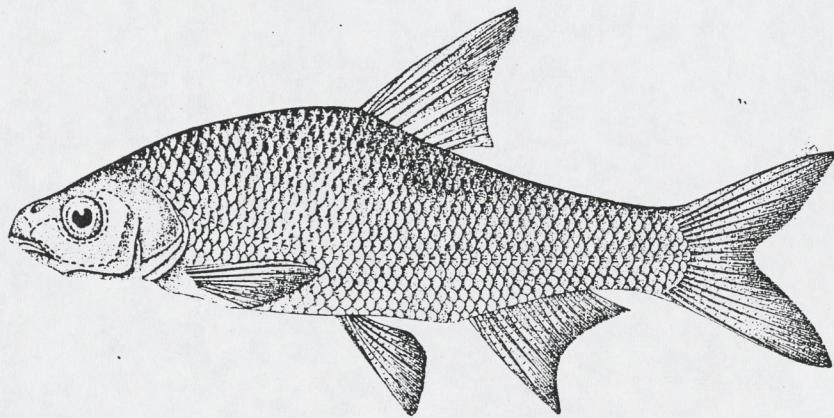
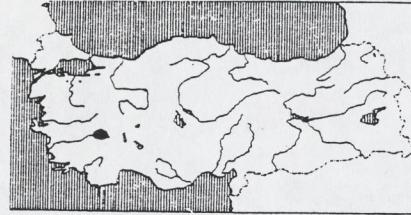
**Cyprinus carpio** (Common carp)  
(Sazan)



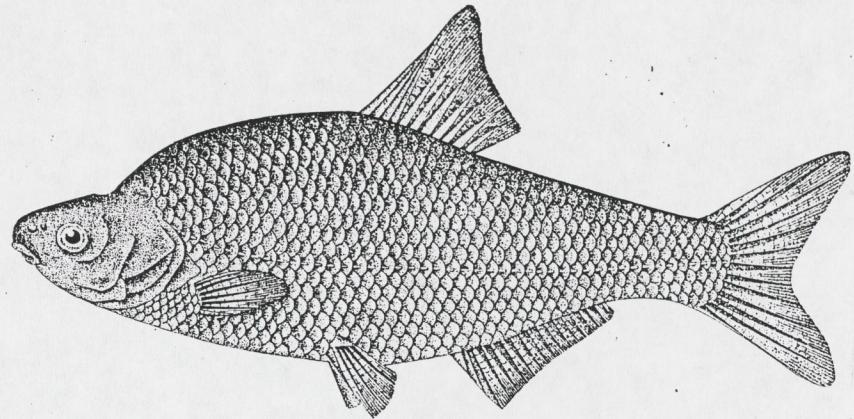
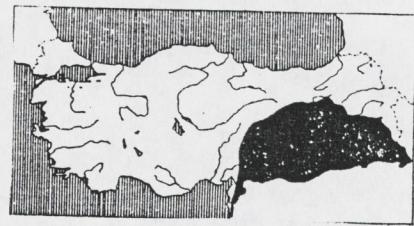
**Carassius carassius** (Crucian carp)  
(Havuz baligi = pond fish)



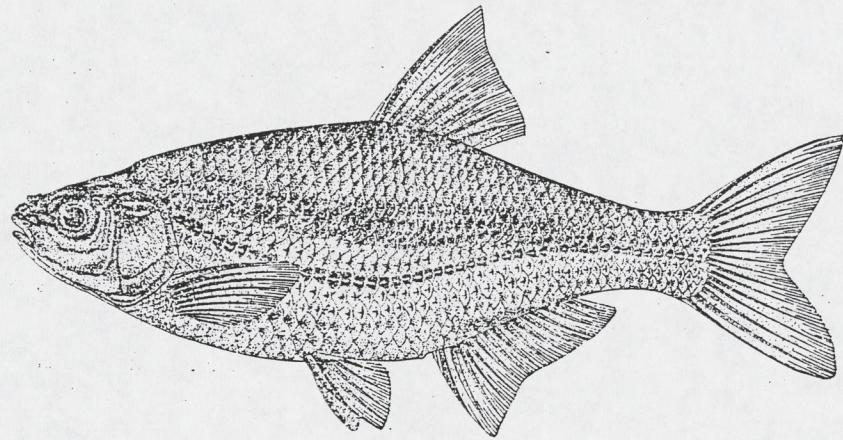
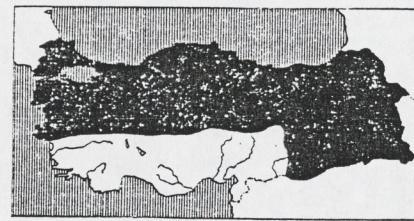
**Abramis brama** (Common bream)  
(Ciplak balik=naked fish)



**Acanthabrama mirabilis**

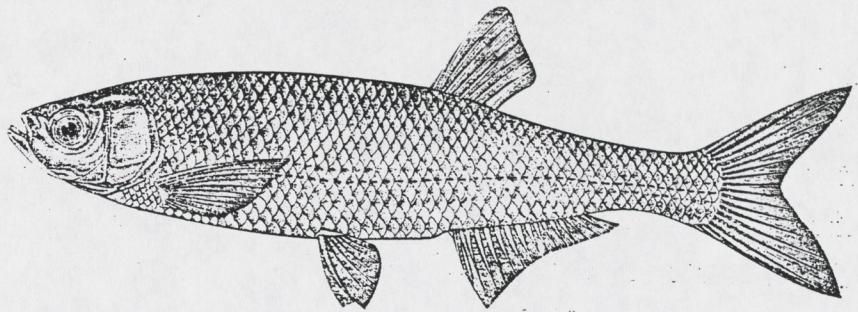
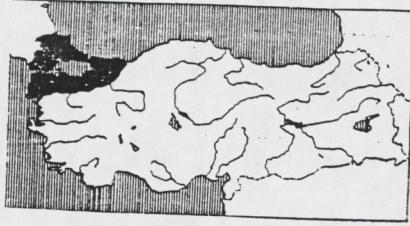


**Acanthobrama marmid**

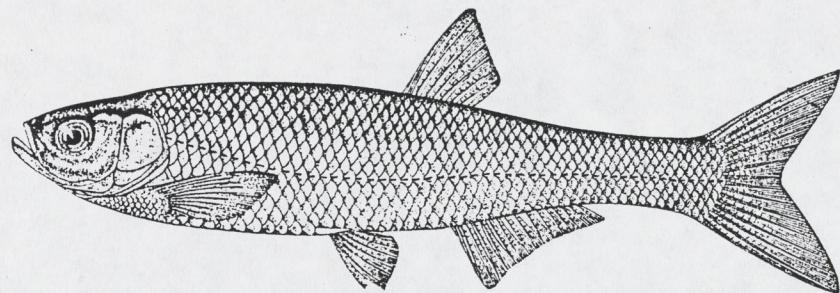
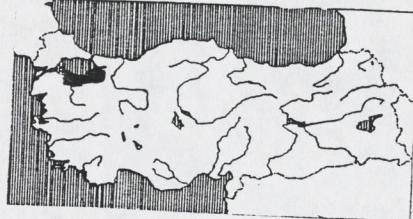


**Alburnoides bipunctatus**

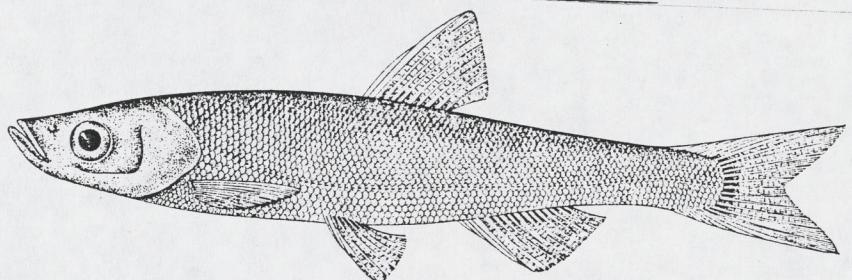
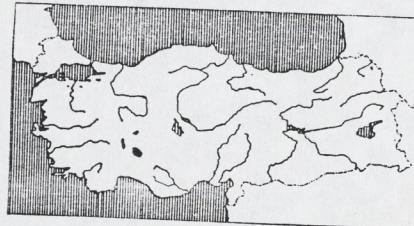
(Noktali inci baligi= with spot pearl fish)



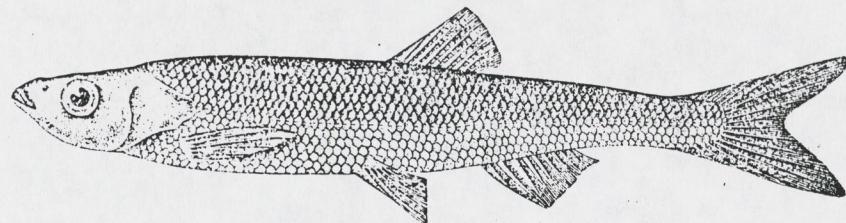
**Alburnus alburnus** (Bleak)  
(Inci baligi =pearl fish)



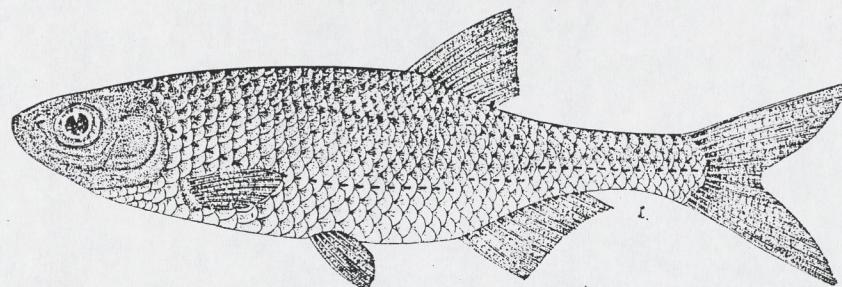
**Alburnus albidus**  
(Inci baligi)



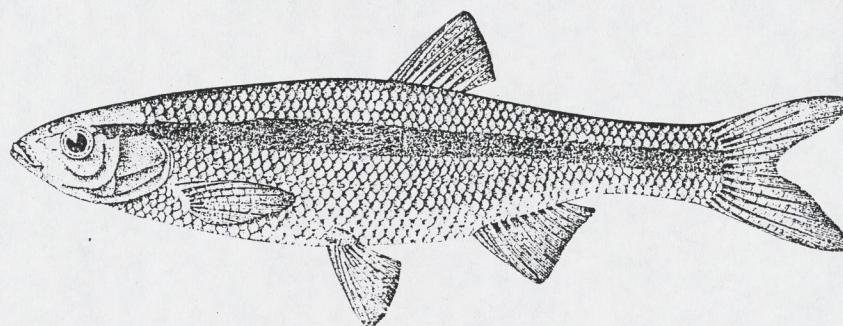
**Alburnus akili** (Gokce baligi)



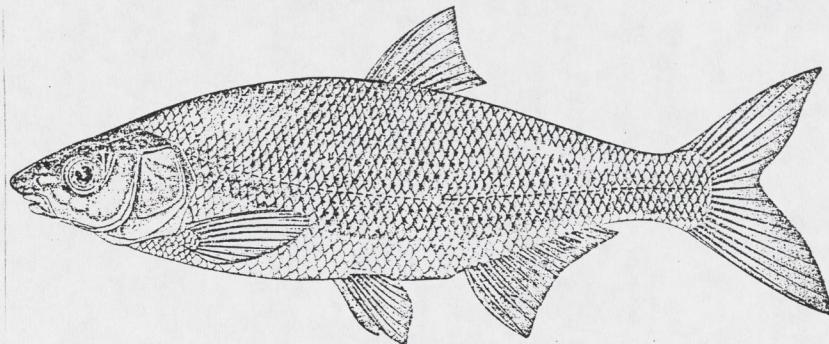
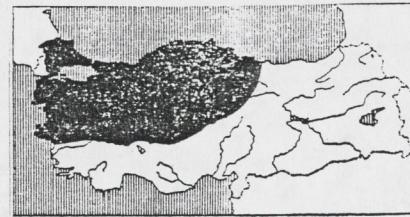
**Alburnus heckeli** b  
(INci baligi)



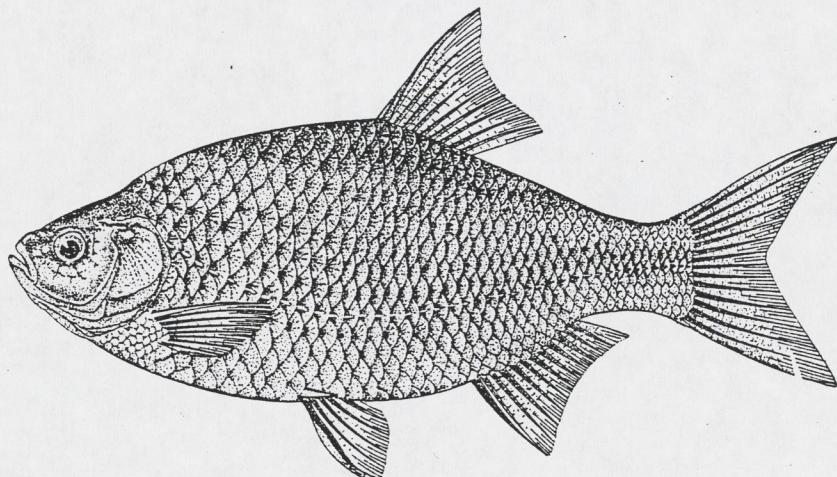
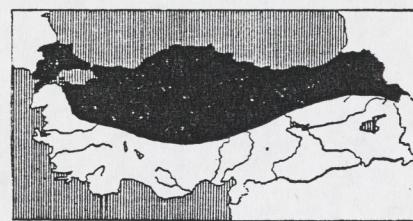
**Alburnus orontis**  
(inci baligi)



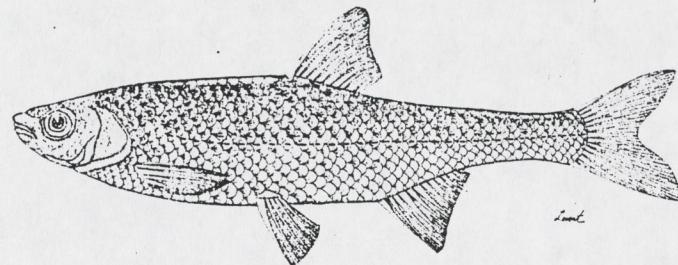
**Alburnus flippii** (c)  
(inci baligi)



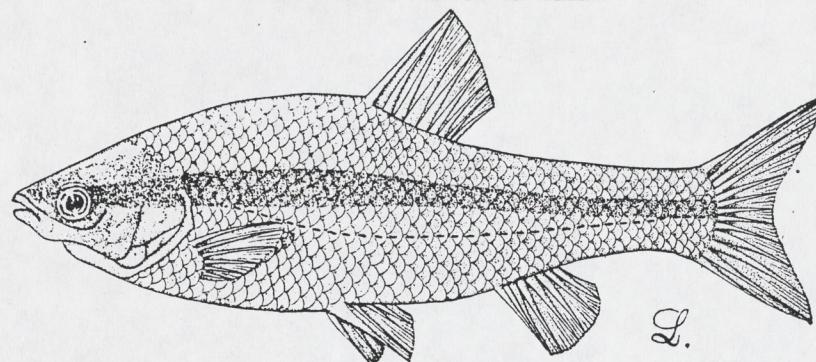
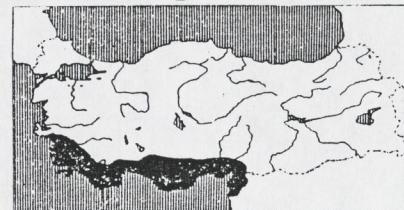
**Vimba vimba** (Vimba)  
(Kavinna baligi)



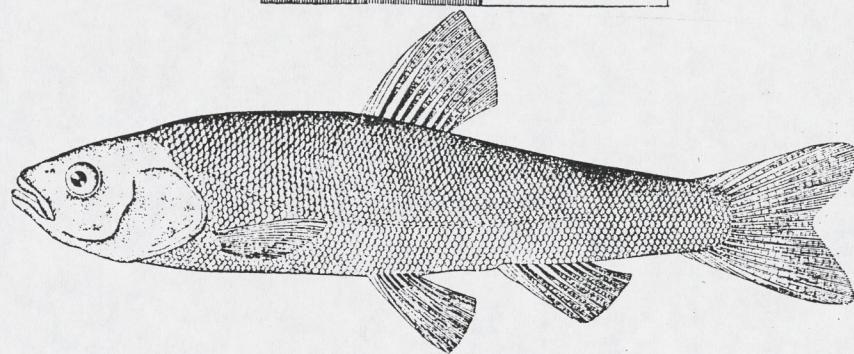
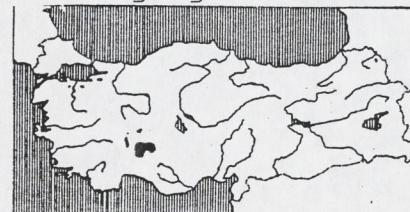
**Scardinius erythrophthalmus** (Rudd)  
(Kizilkanat)



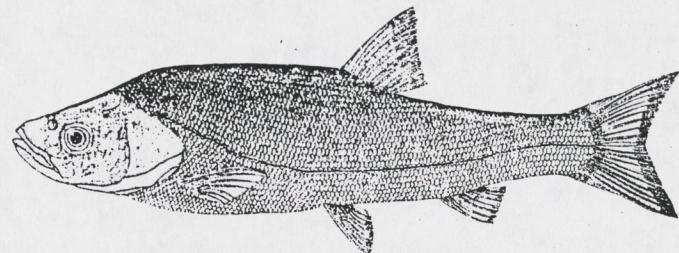
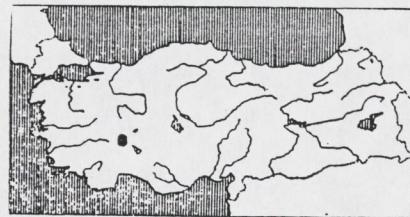
**Acanthalburnus microlepis**  
(inci baligi)



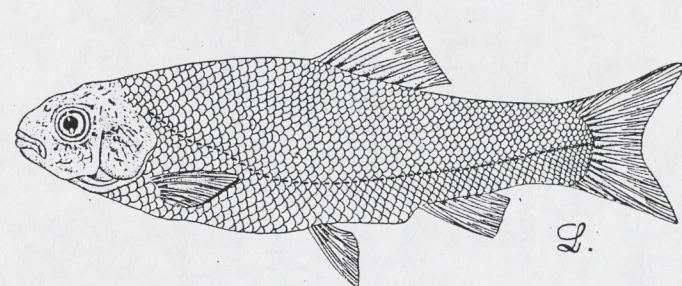
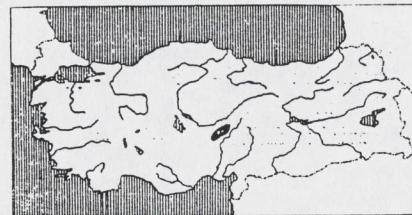
**Phoxinellus zeregii**  
(Ot baligi=grass fish)



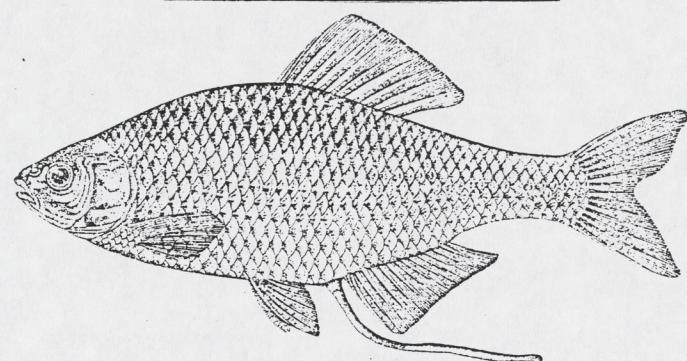
**Phoxinellus (Spinophoxinellus) anatolicus**  
(Yag baligi= oil fish)



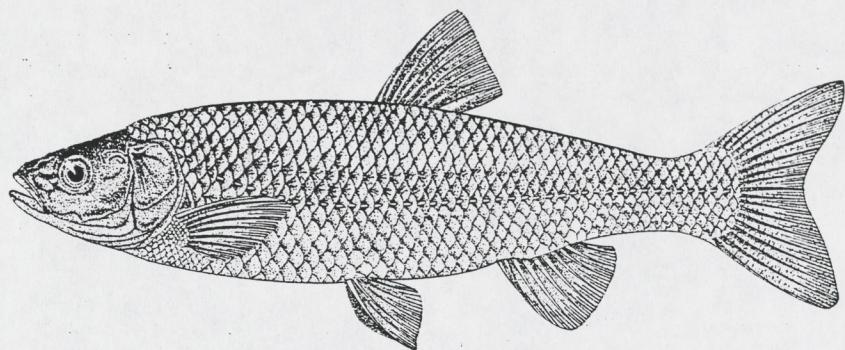
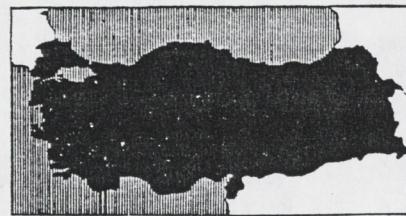
**Phoxinellus handlirschi**



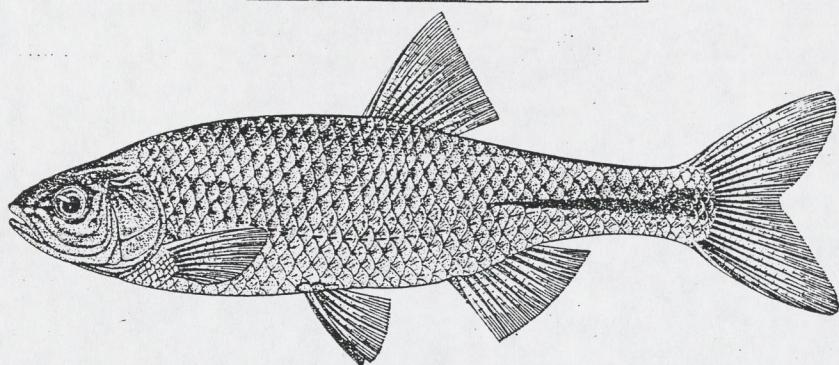
**Phoxinellus crassus**



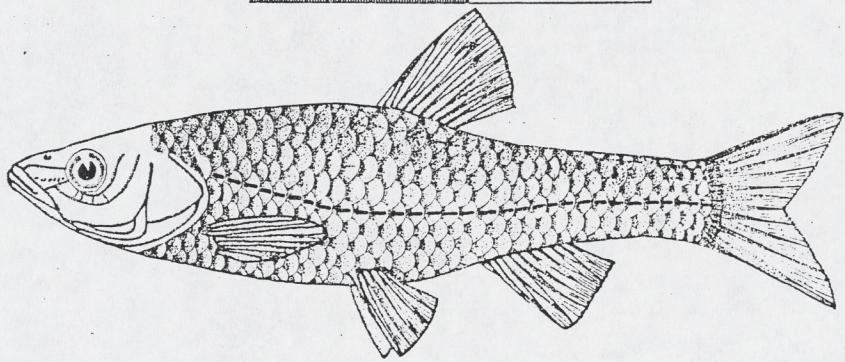
**Rhodeus sericeus amarus** (Bitterling)  
(aci balık=hot fish)



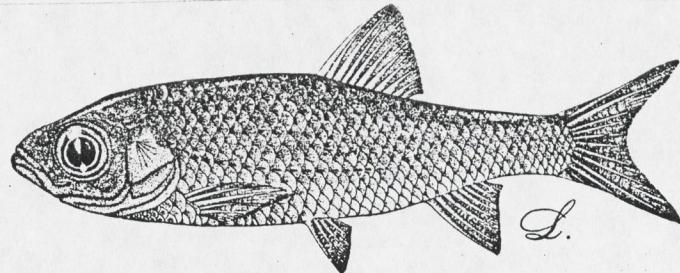
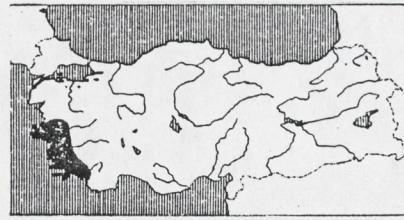
**Leuciscus cephalus** (Chub)  
(Tatlisu kefali)



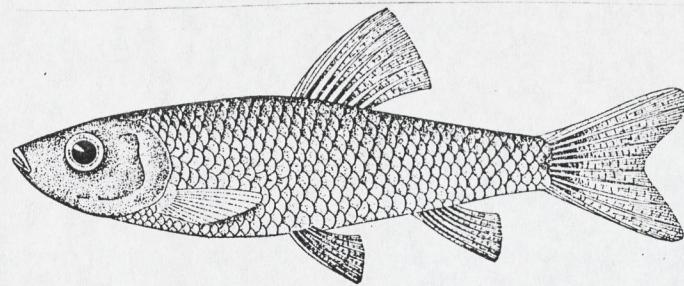
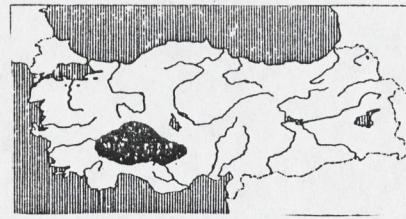
**Leuciscus bottysthenicus** (Black sea chub)  
(Tatlisu kefali =freshwater mullet)



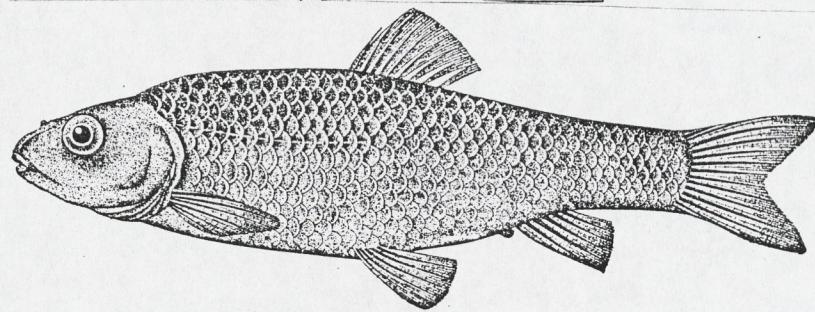
**Leuciscus lepidus** (Ak balik)



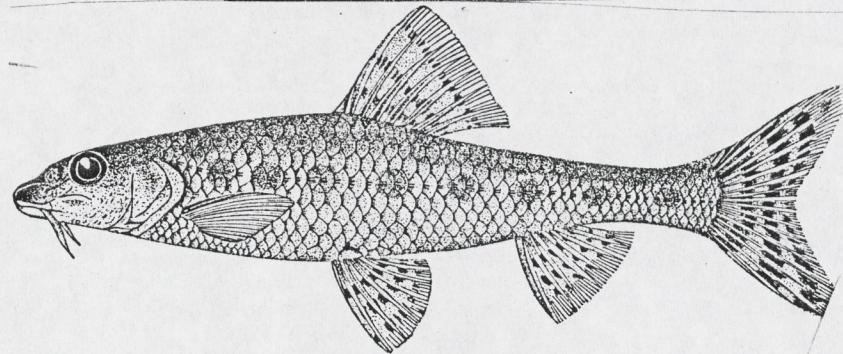
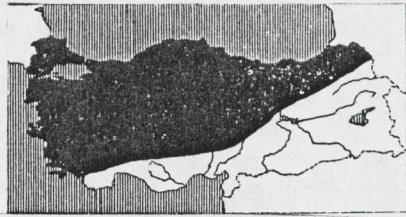
**Ladigesocypris ghigii**



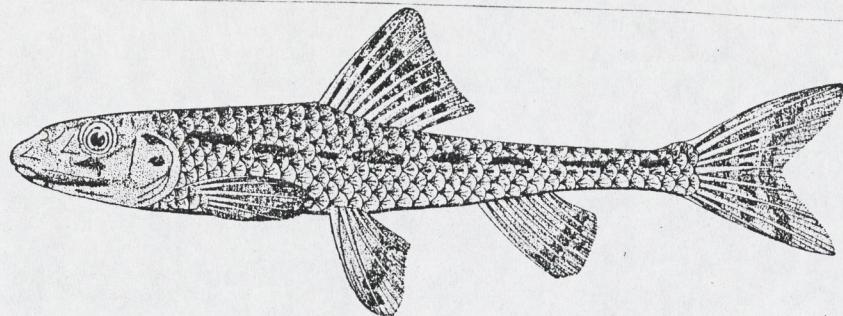
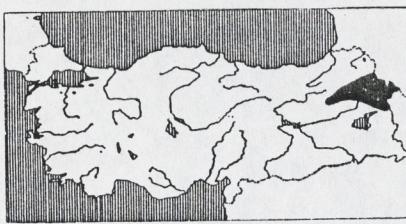
**Hemigrammocapoeta kemali**



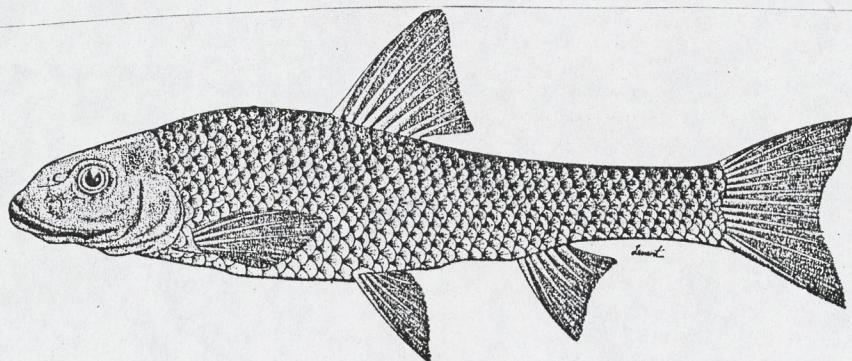
**Hemigrammocapoeta sauvagei**



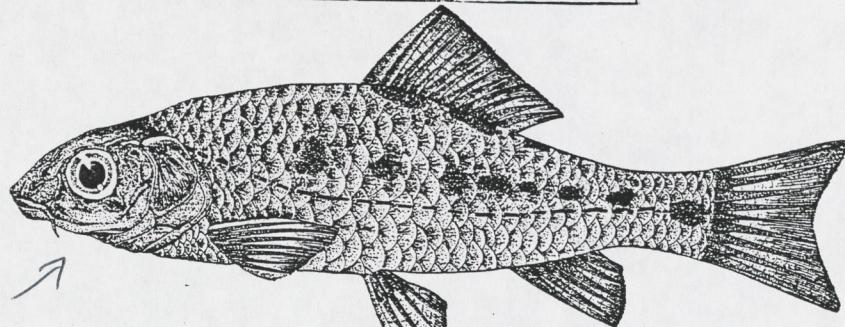
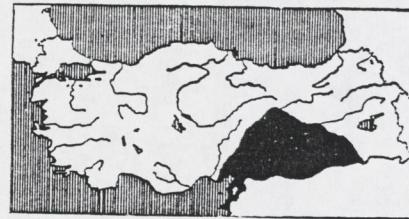
**Gobio gobio** (Gudgeon)  
(Yaglica baligi)



**Gobio persus** (Dere kayasi)

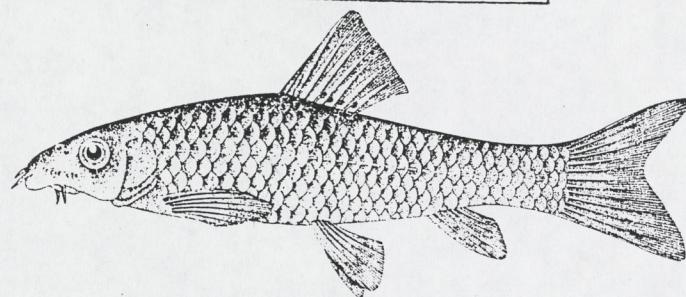
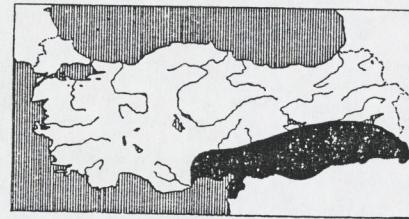


**Gobio hettitorum** (Dere kayasi)

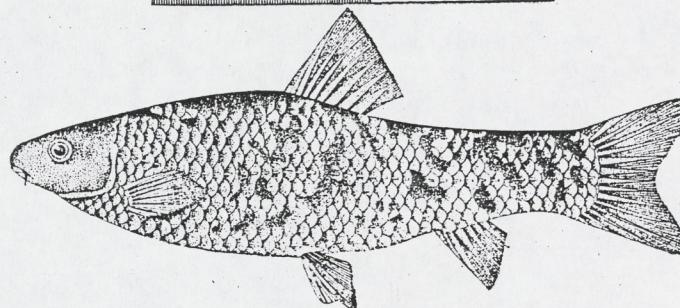


**Cyprinodon macrostomum**  
(Beni baligi)

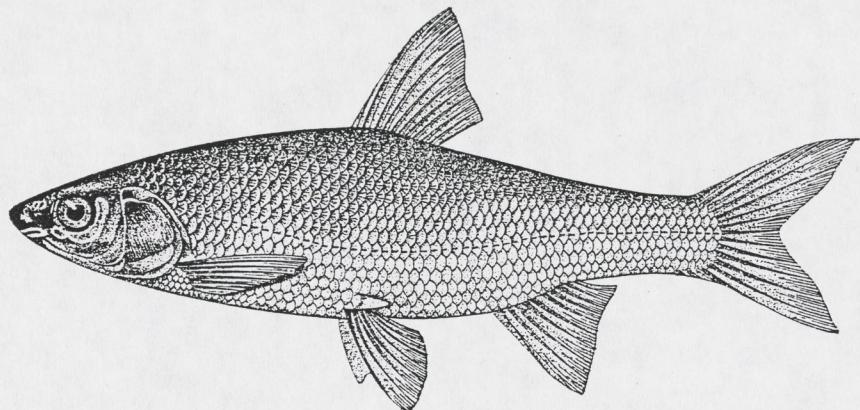
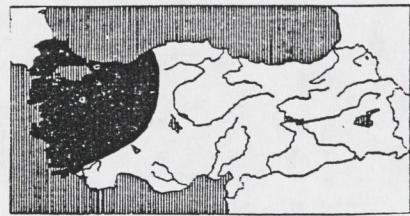
not  
Cyprinodon  
probably Gabio



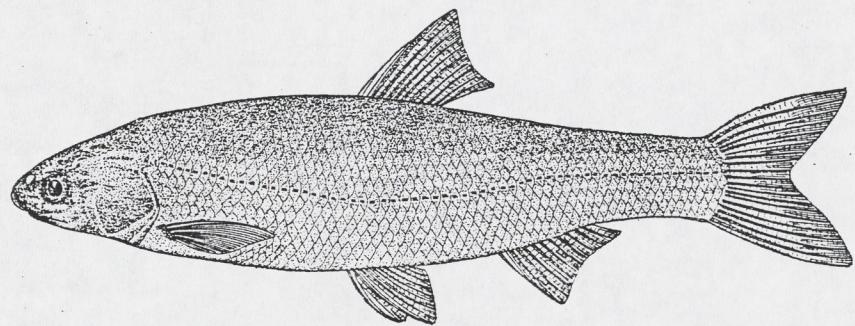
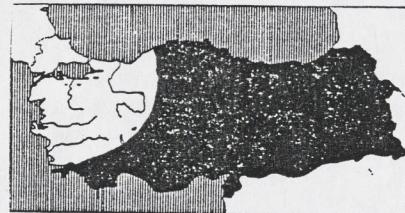
**Garra rufo<sup>2</sup>**  
(Yagli balik)



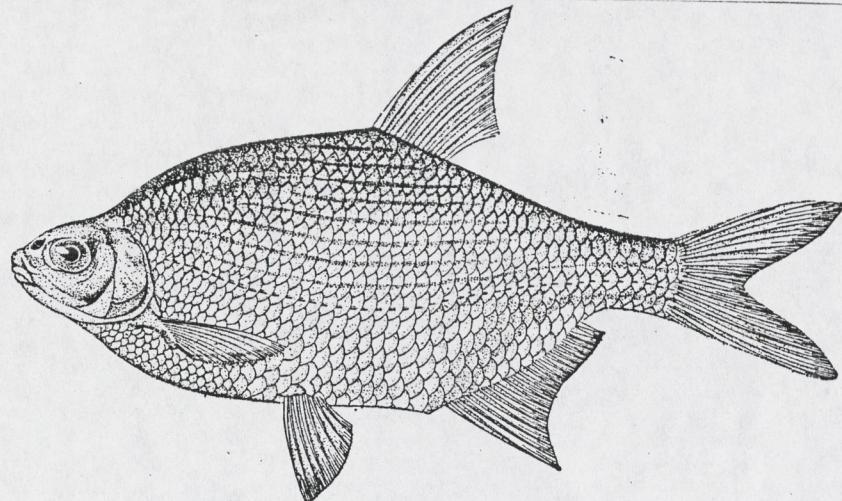
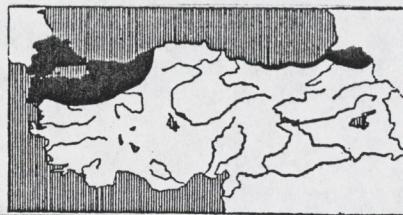
**Garra variabilis**  
(Yapiskan baligi)



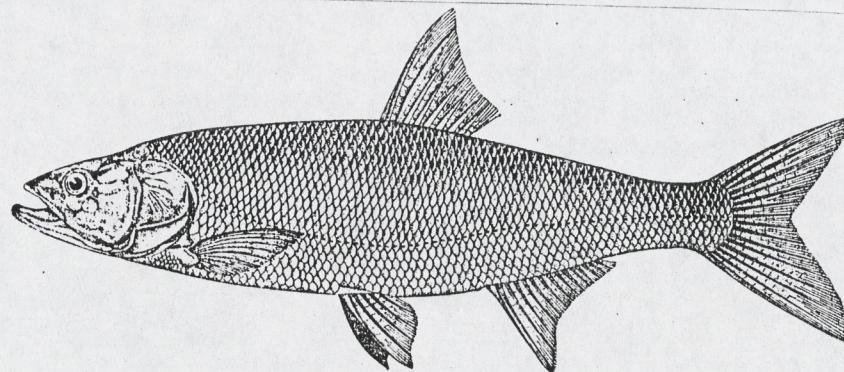
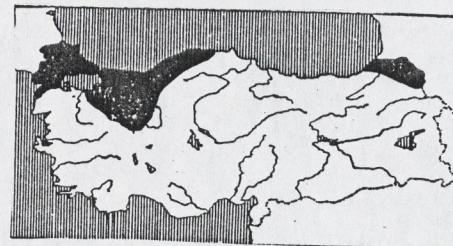
**Chondrostoma nasus** (The Broad Snout)  
(Karaburun baligi)



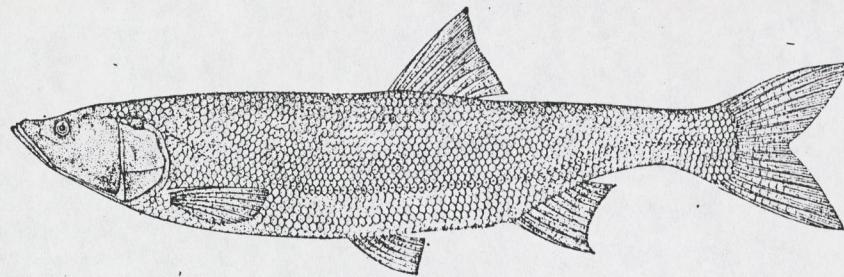
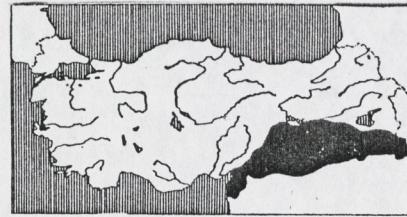
**Chondrostoma regium**  
(Karaburun baligi)



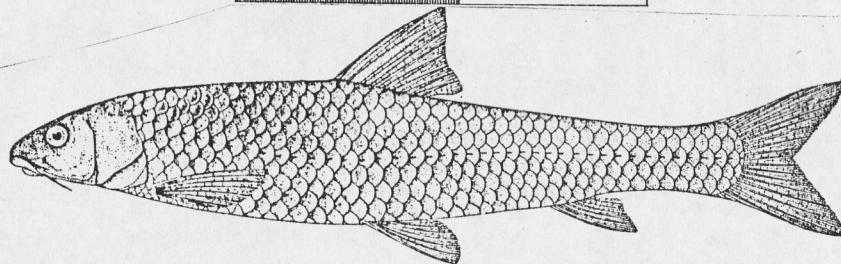
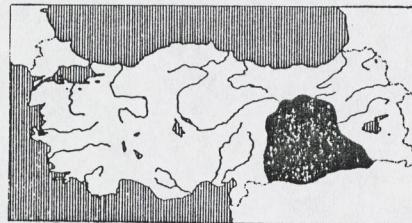
**Blicca bjorkna** (White bream)  
(Tahta baligi = wood fish)



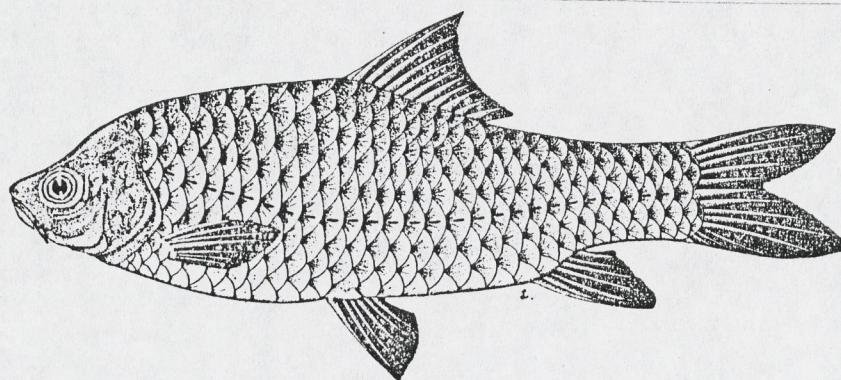
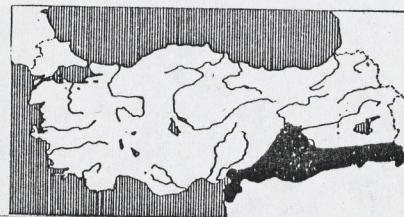
**Aspius aspius** (Asp)  
(Beyazbalik, Akbalik)



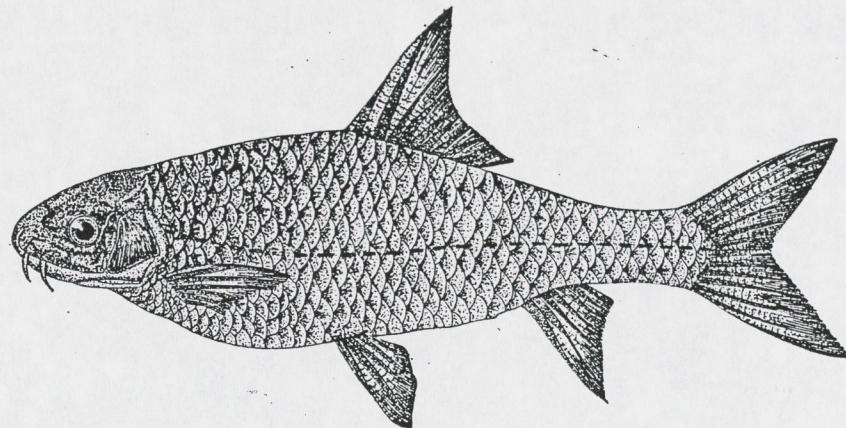
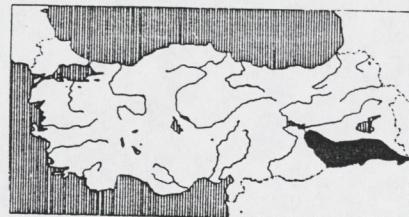
**Aspius vorax**  
(sis baligi)



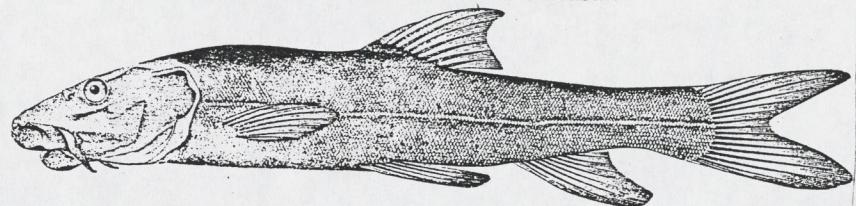
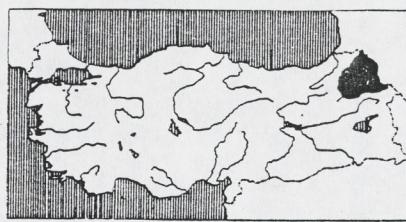
**Tor grypus**  
(Biyikli balik)



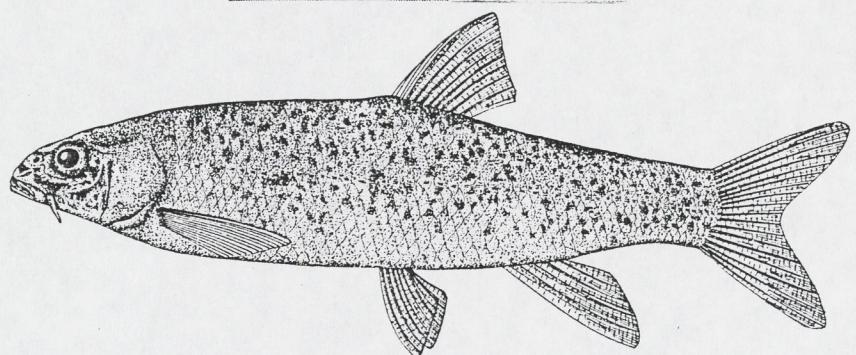
**Carasobarbus luteus**  
(Bizir)



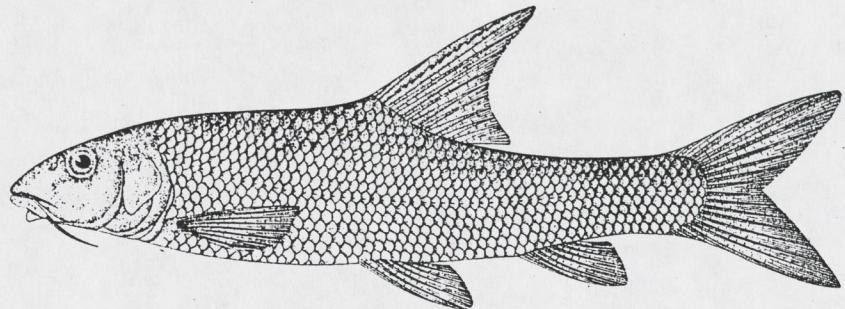
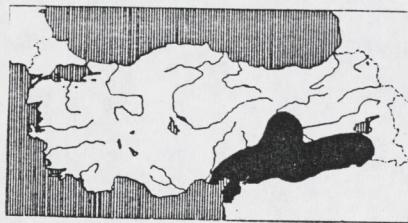
**Kosswigobarbus kosswigi**



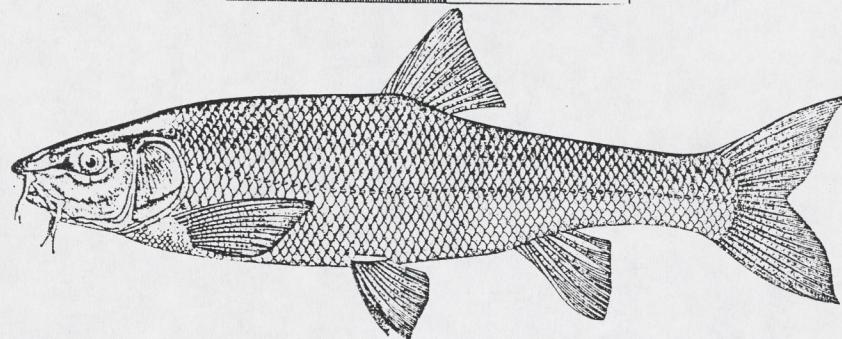
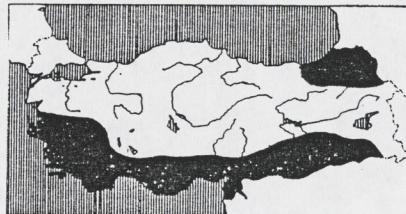
**Barbus mursa**  
(Murzu)



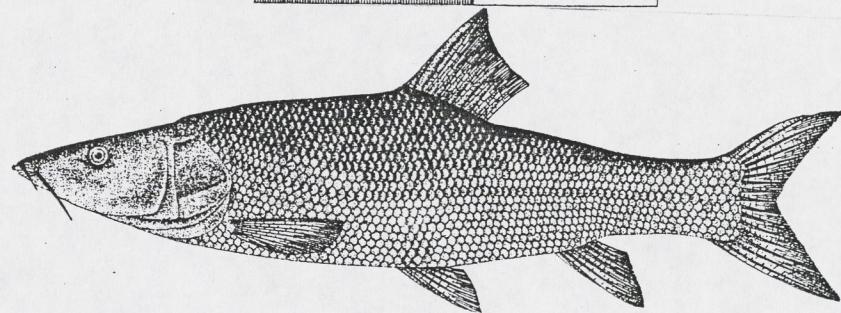
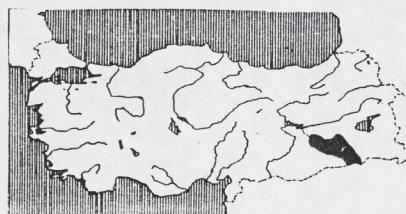
**Barbus plebejus**  
(Biyikli balik)



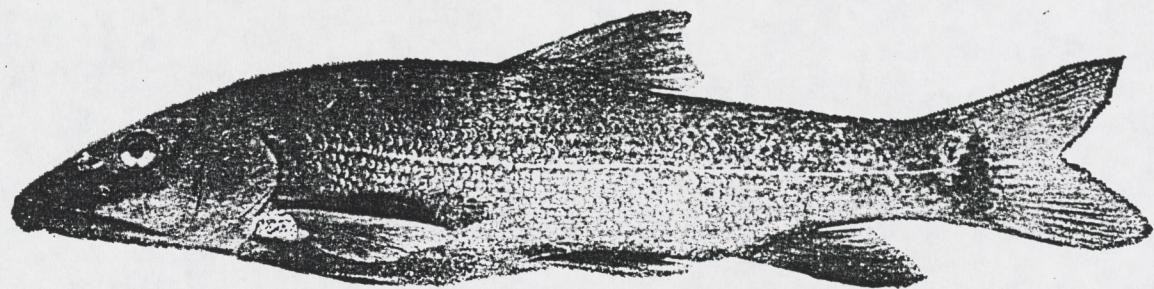
**Barbus rajanorum**  
(Sirink)



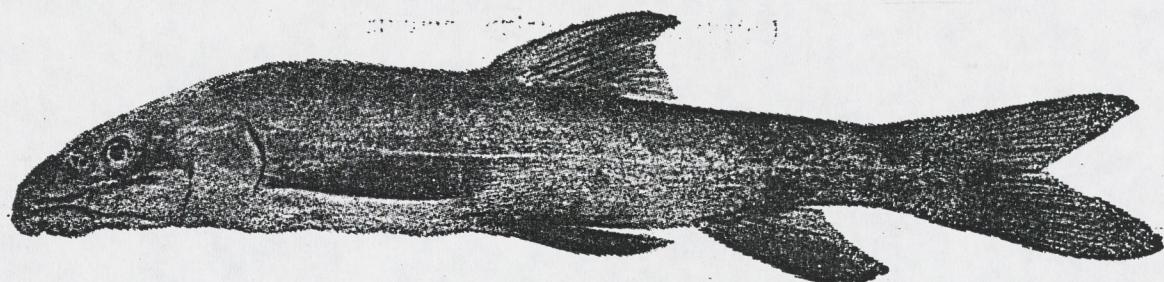
**Barbus capito** (Bulatmai barbel)  
(Biyikli balik)



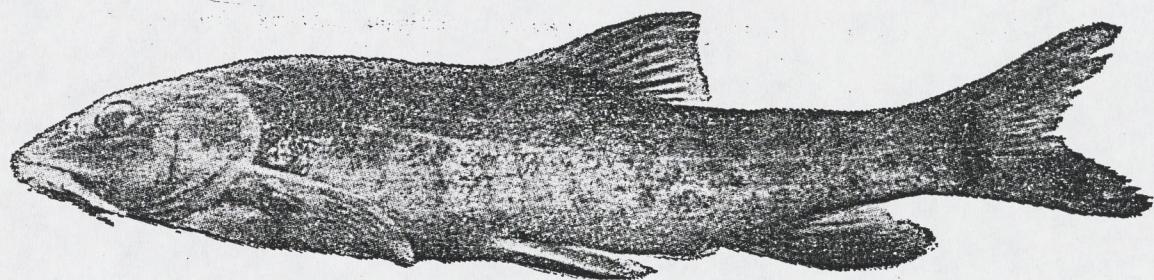
**Barbus esocinus**  
(Cero)



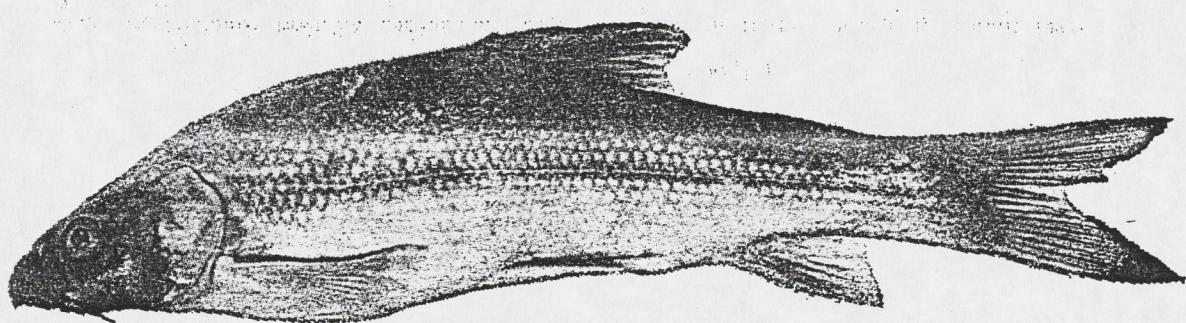
Barbus plejus escherichi Stin



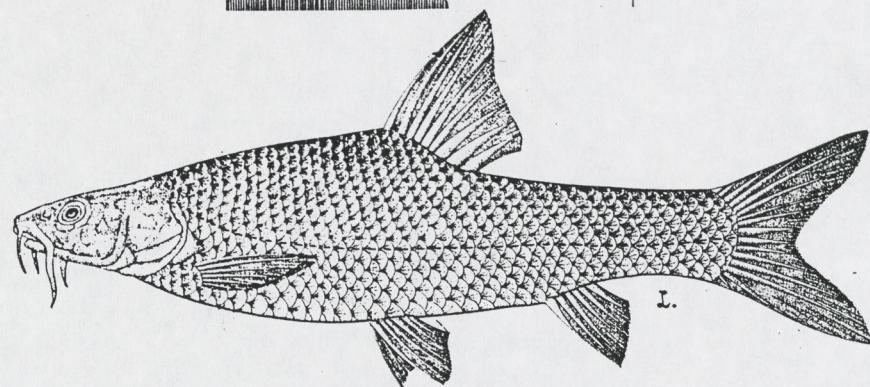
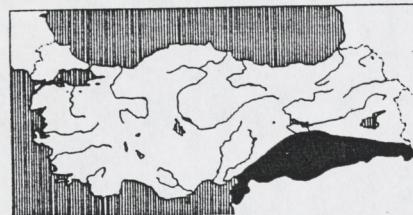
Barbus murusa murusa (Guld.)



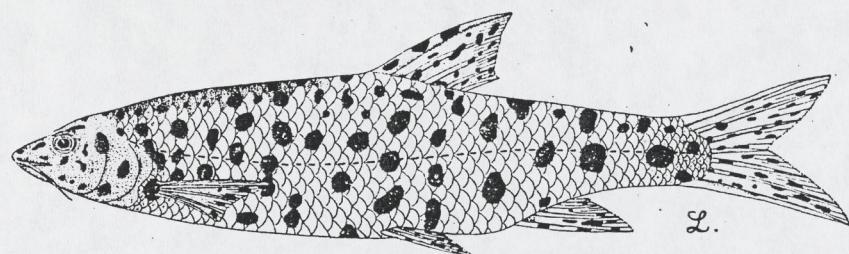
Barbus plejus lacerta Heck.



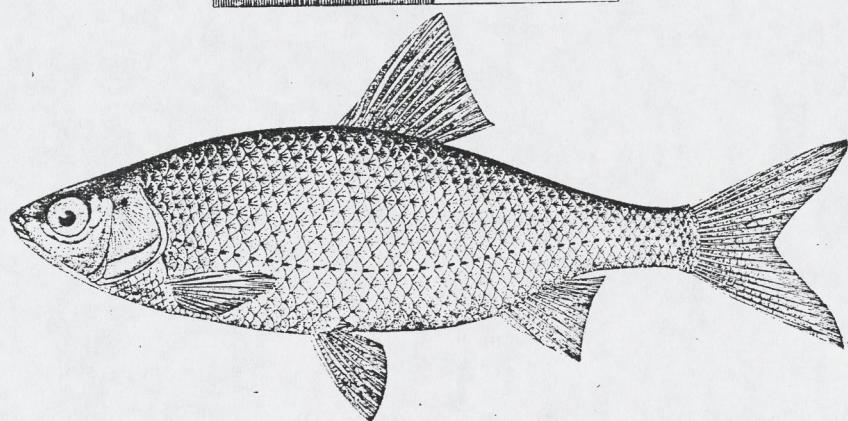
Barbus capito capito (Guld.)



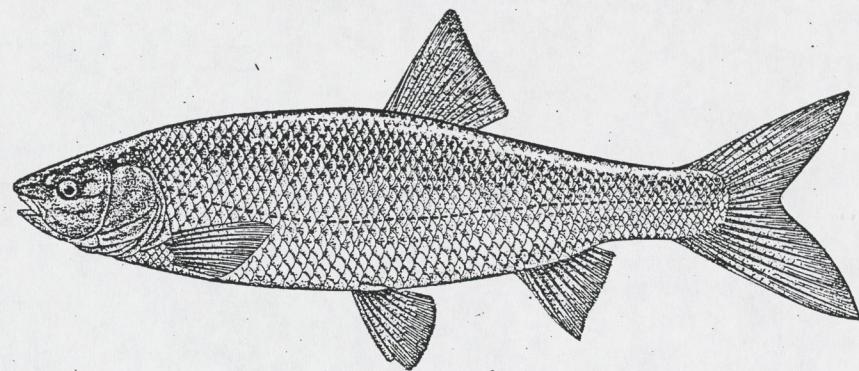
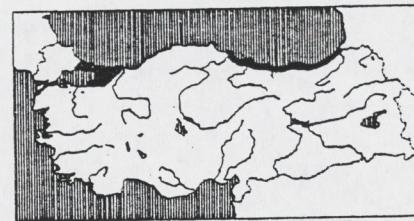
**Barbus xanthopterus**  
(Maya baligi)



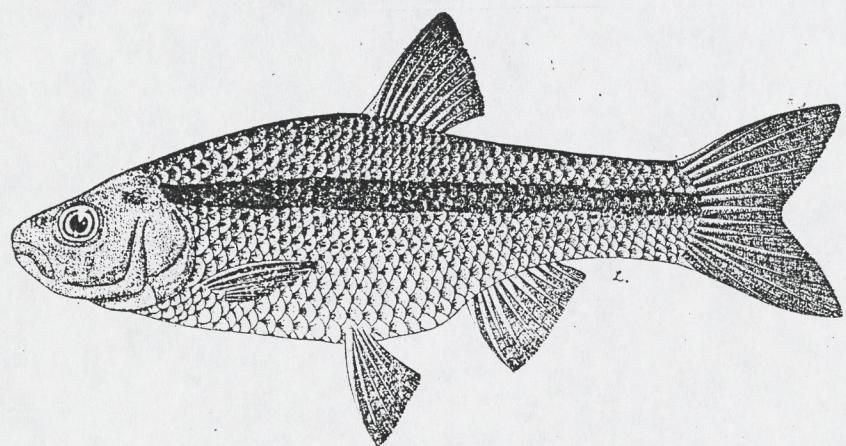
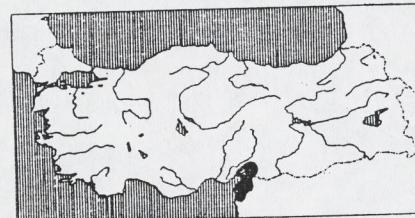
**Barbus subquincuncinatus**  
(Biyikli balik)



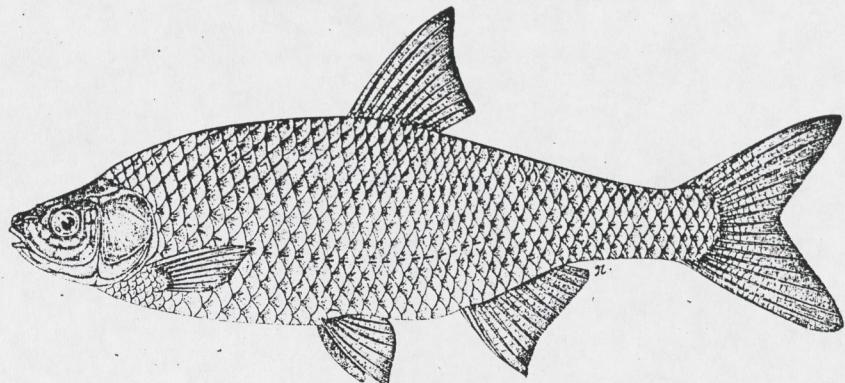
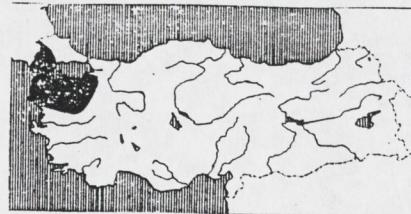
**Rutilus rutilus** (Rosch)



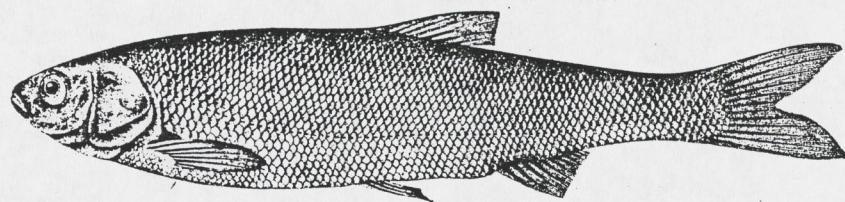
**Rutilus frisii**  
(Levkit baligi)



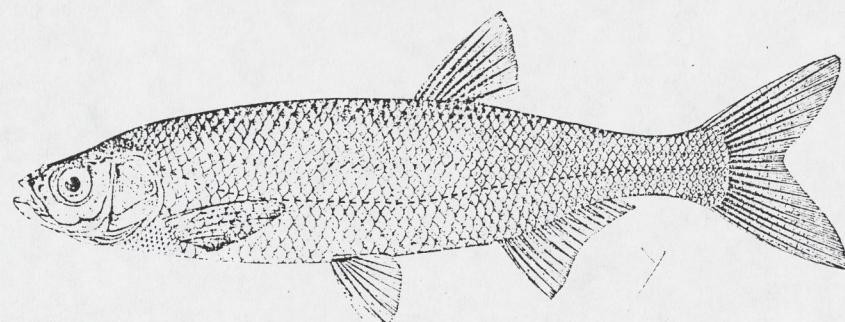
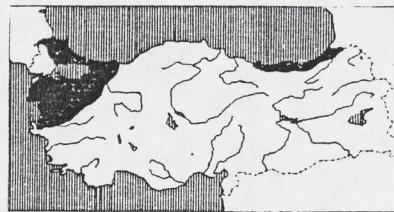
**Rutilus tricolor**  
(Kucuk gordek baligi)



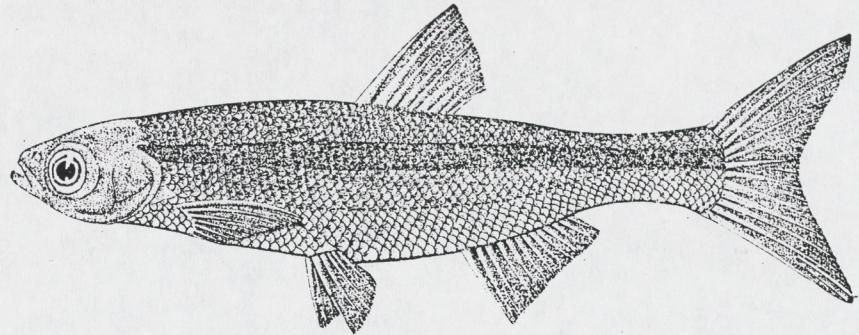
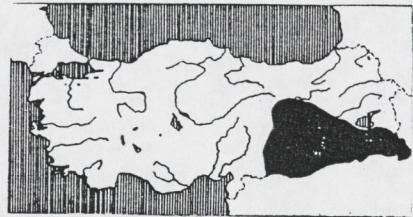
**Rutilus rubilio** (Adriatic roach)  
(Gordek baligi)



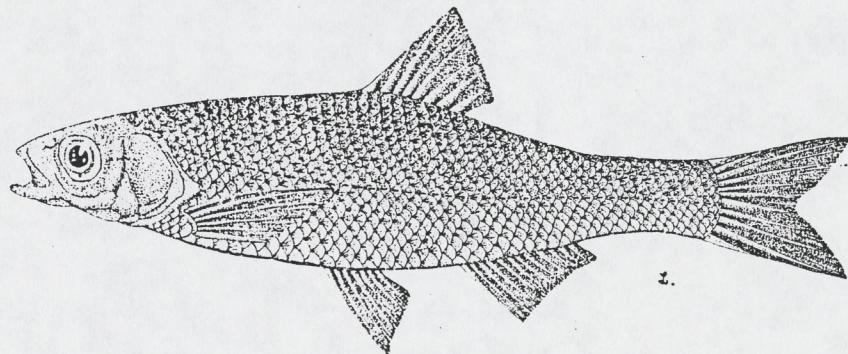
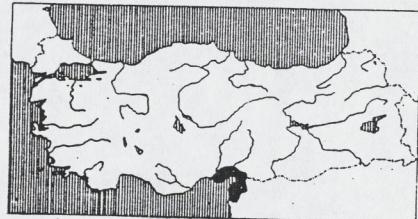
**Chalcalburnus tarichi**  
(Inci kefali)



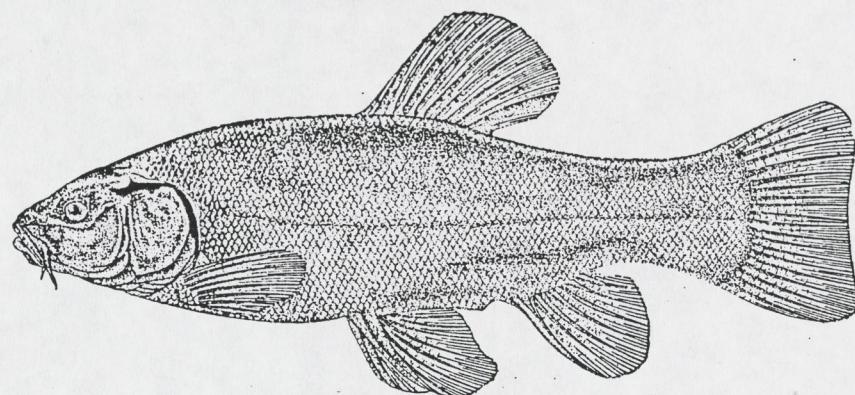
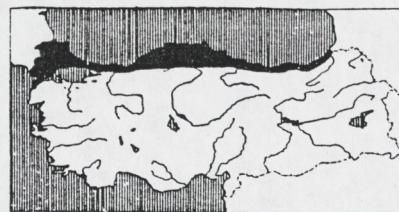
**Chalcalburnus chalcoides**  
(Tatlisu Kolyoz baligi)



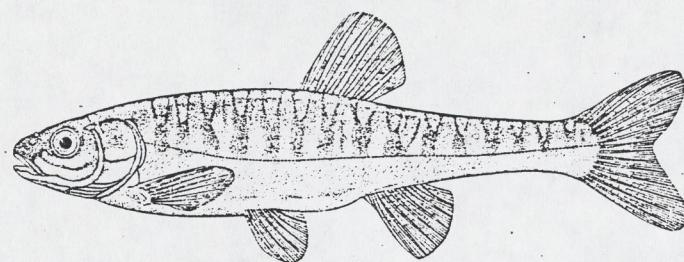
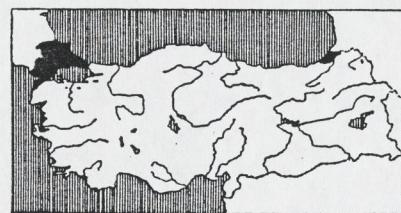
**Chalcalburnus mossutensis**  
(Gumus baligi = silver fish)



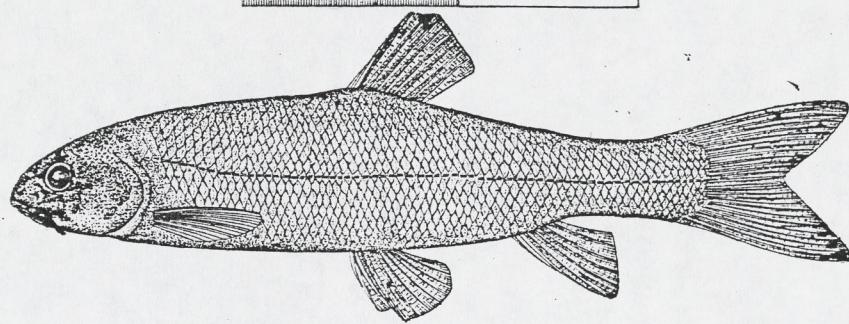
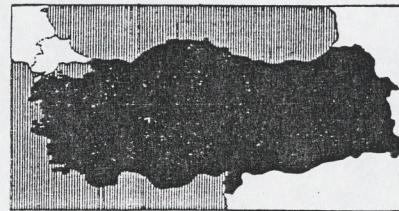
**Chalcalburnus sellai**  
(Gumus baligi)



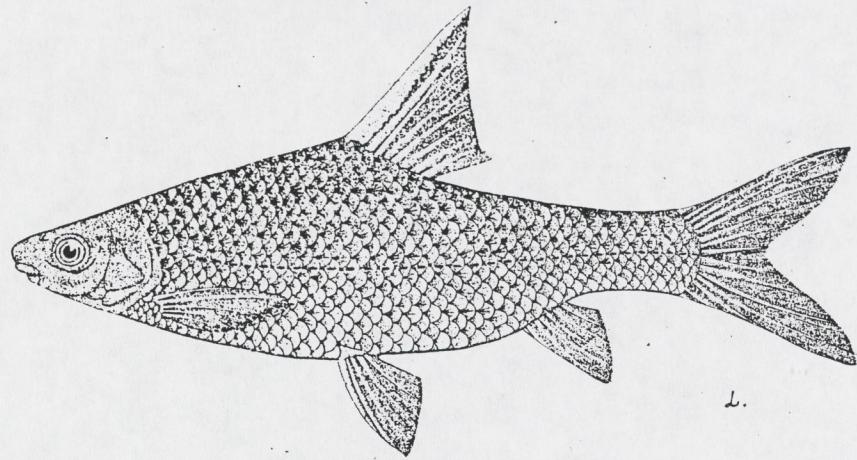
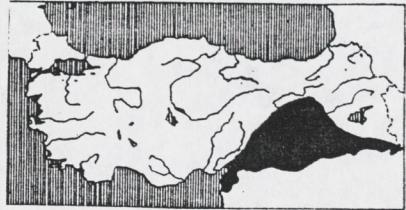
**Tinca tinca** (Tench)  
(Yesil sazan= green carp)



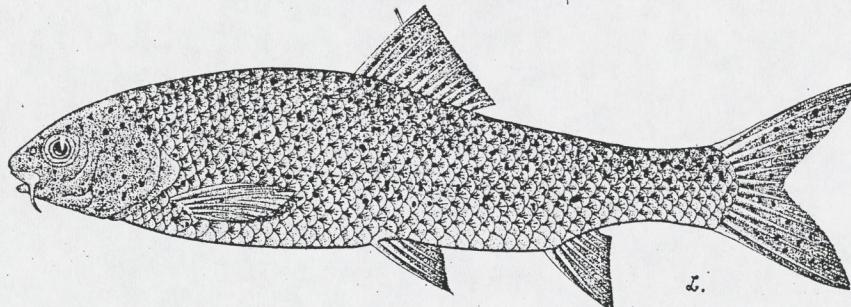
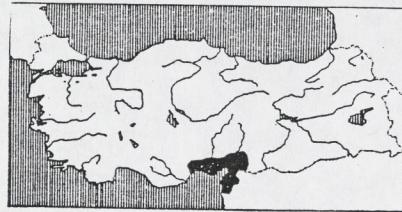
**Phoxinus phoxinus** (Minnov)  
(Ot baligi)



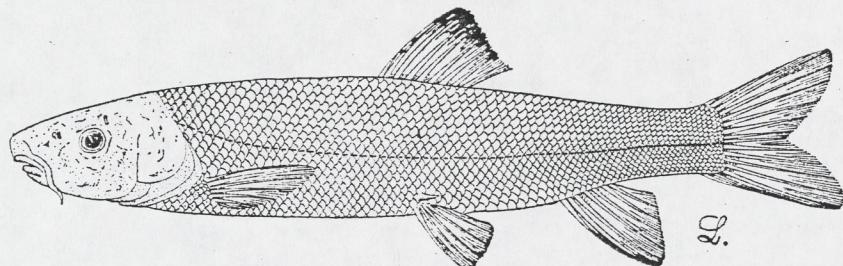
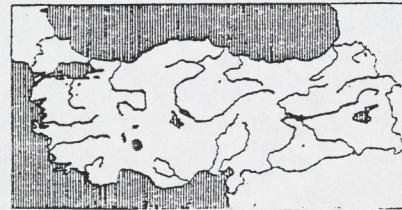
**Capoeta capoeta**  
(Siraz baligi)



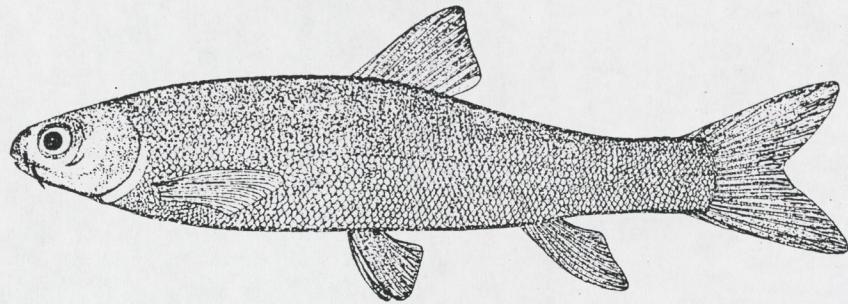
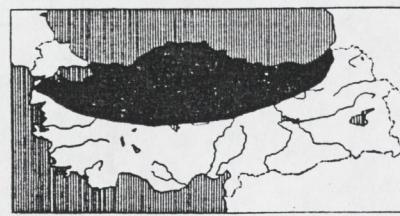
**Capoeta trutta**  
(Kara balik)



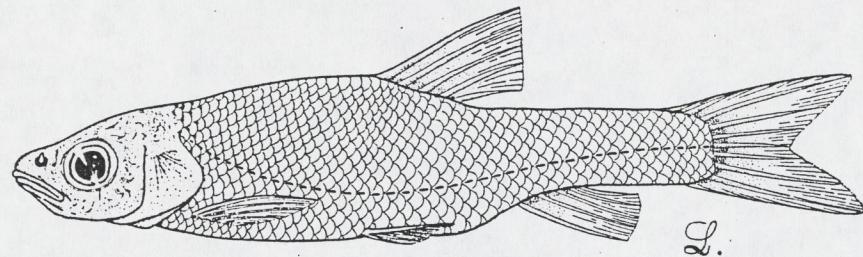
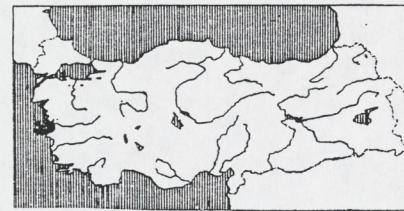
**Capoeta barroisi**  
(Siraz baligi)



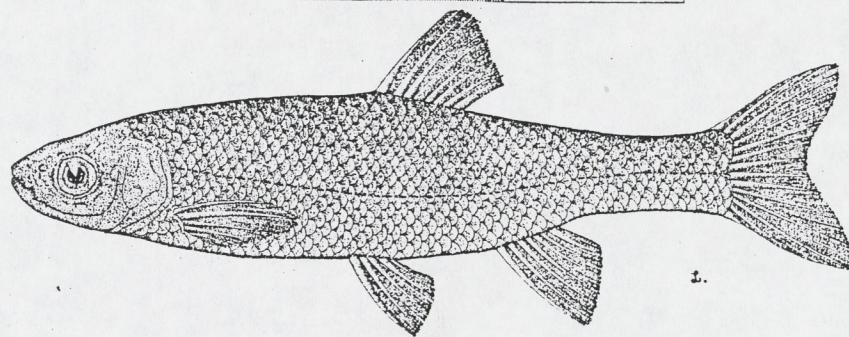
**Capoeta pestai**  
(Siraz baligi)



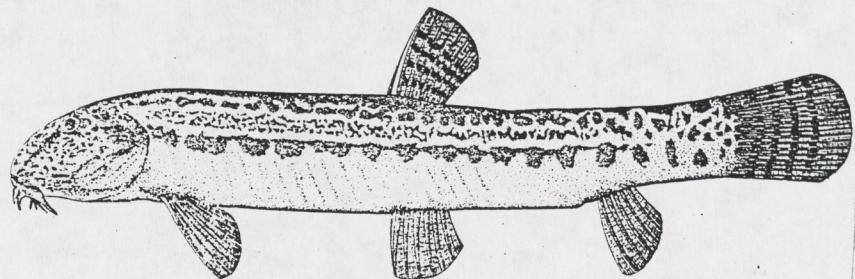
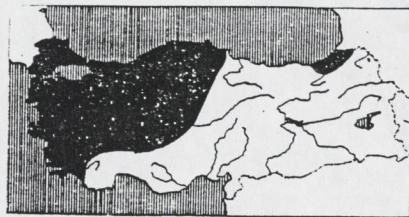
**Capoeta tinca**  
(Karabalik, Siraz)



**Leucalburnus kosswigi**



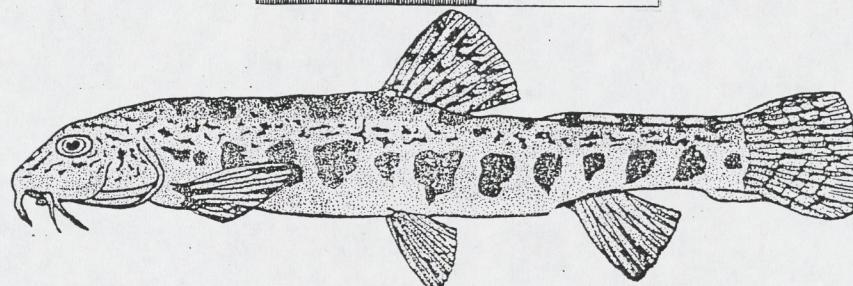
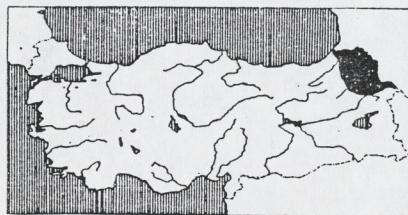
**Leucalburnus saturnini**



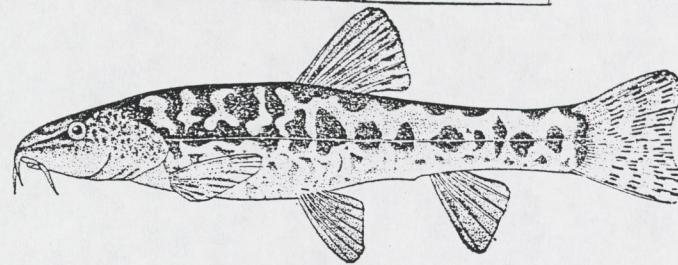
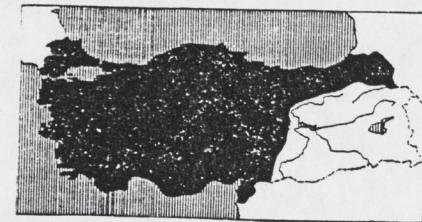
**Cobitis taenia** (Spined loach)  
(Tas yien)



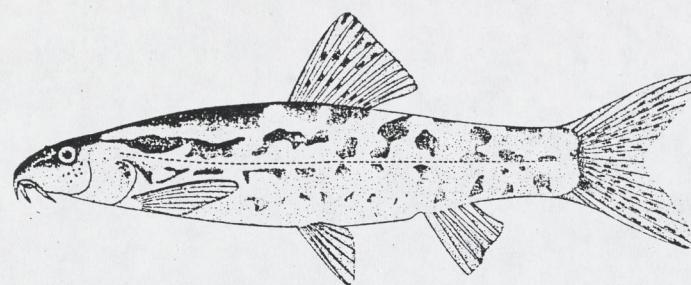
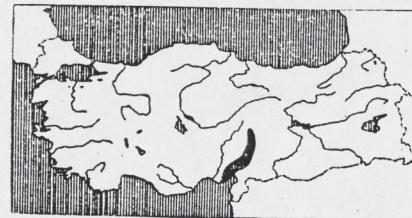
**Cobitis simplicispinna**  
(Copcu baligi)



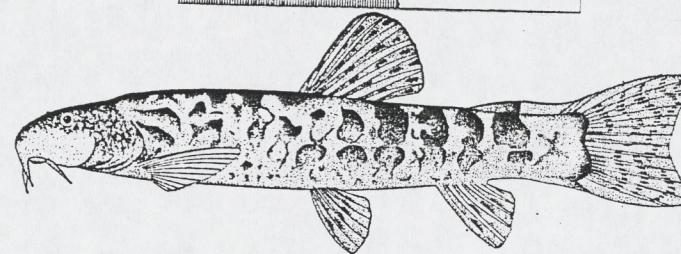
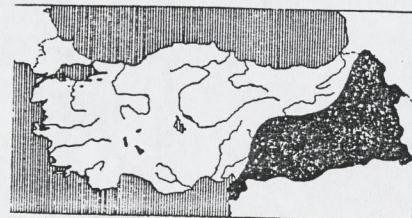
**Cobitis aurata** (Golden loach)  
(Tas yien)



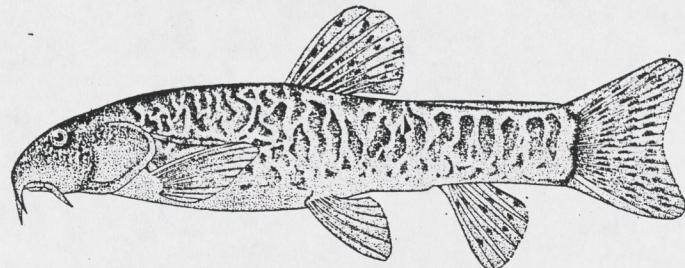
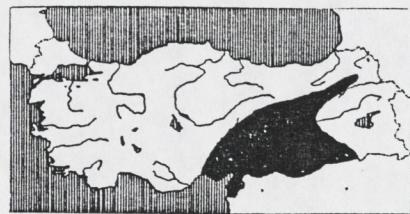
**Nemacheilus angorae** (Angora loach)  
(Copcu baligi= dustman fish)



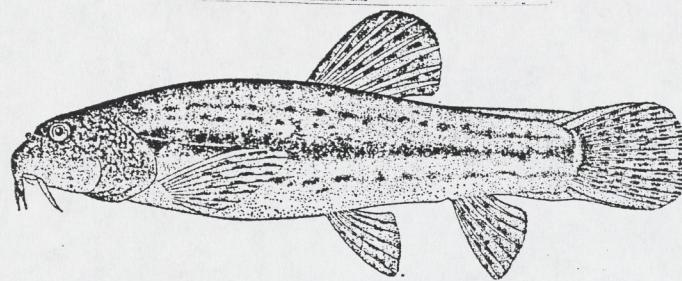
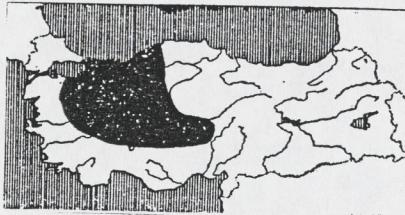
**Nemacheilus tschajyssuensis**  
(Copcu baligi=Dustman fish)



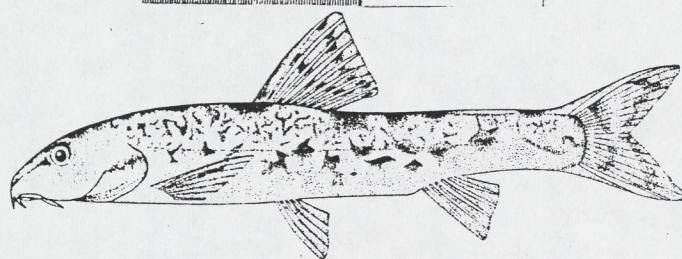
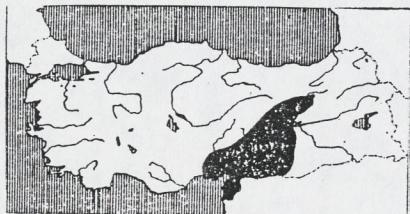
**Nemacheilus tigris**  
(Copcu baligi= dustman fish)



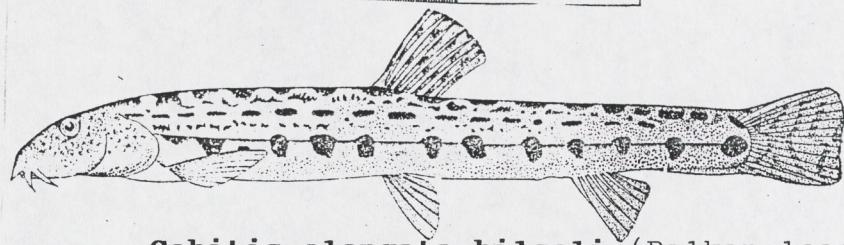
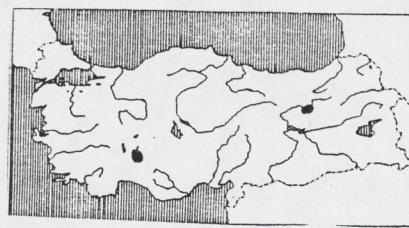
**Nemacheilus panthera**  
(Copcu baligi)



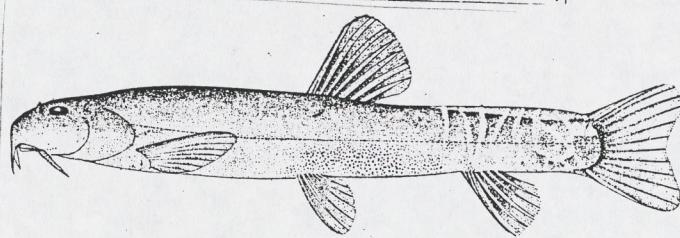
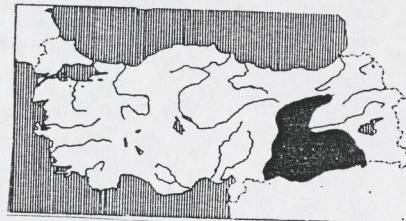
**Nemacheilus lendli**  
(Copcu baligi)



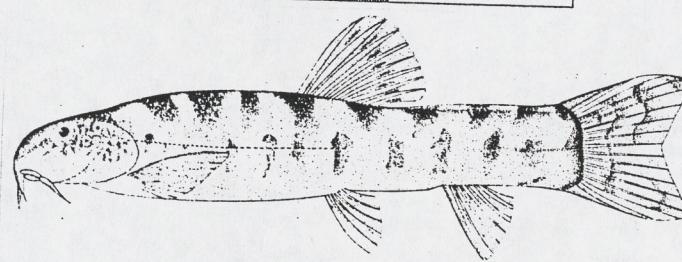
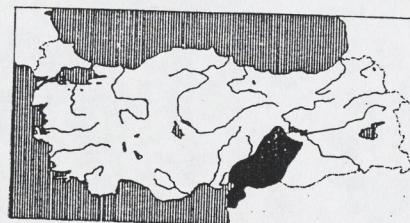
**Nemacheilus insignis**  
(Copcu baligi)



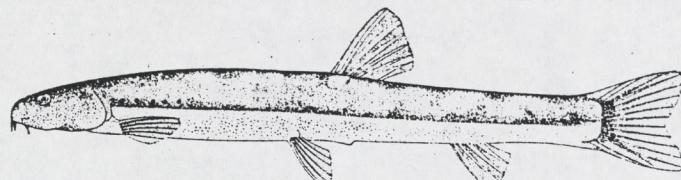
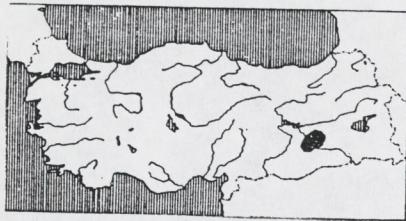
**Cobitis elongata bilseli** (Balkan loach)  
(Copcu baligi)



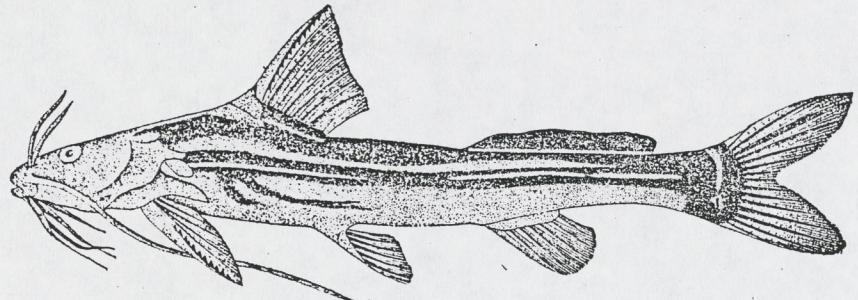
**Nemacheilus malapterurus**  
(Copcu baligi)



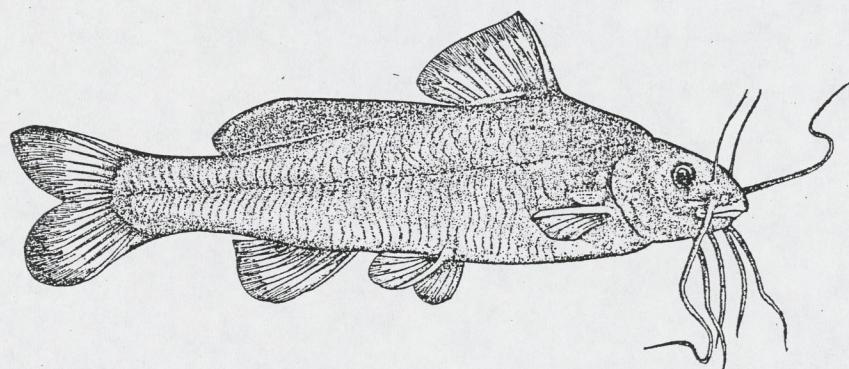
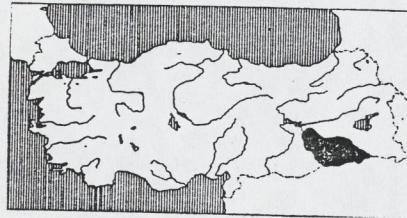
**Nemacheilus argyrogramma**  
(Copcu baligi)



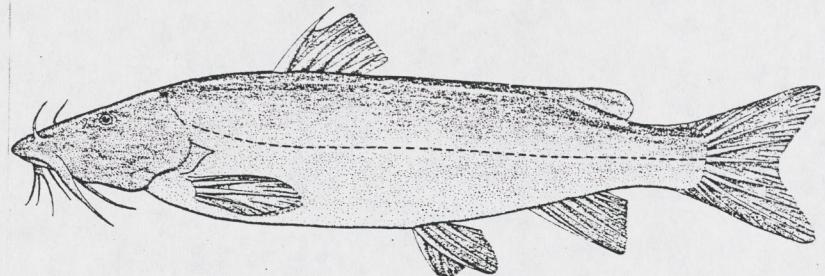
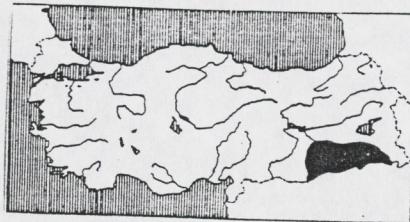
**Turcinemacheilus kosswigi**  
(Copcu baligi)



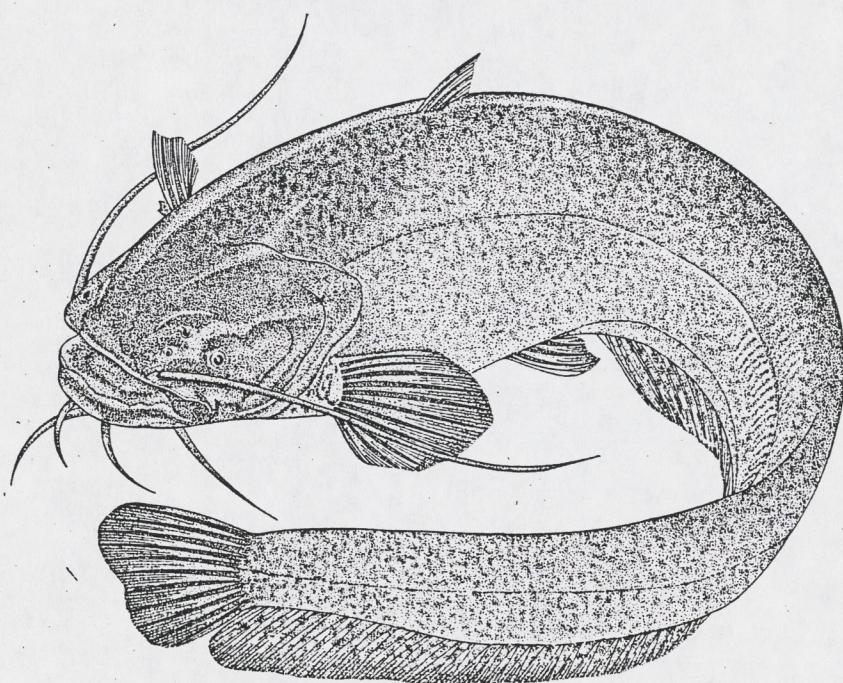
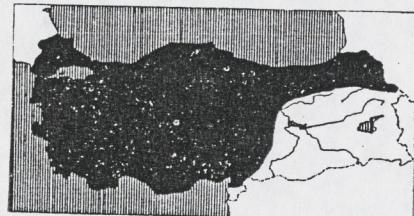
**Mystus colvillii**  
(Kedi baligi=cat fish)



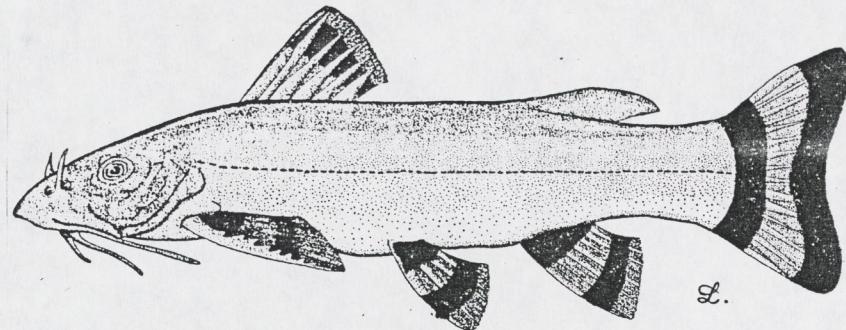
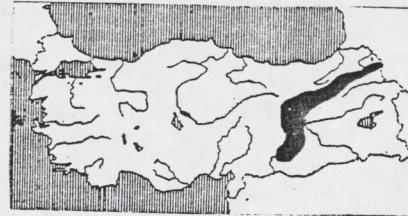
**Mystus haleensis**  
(Kedi baligi)



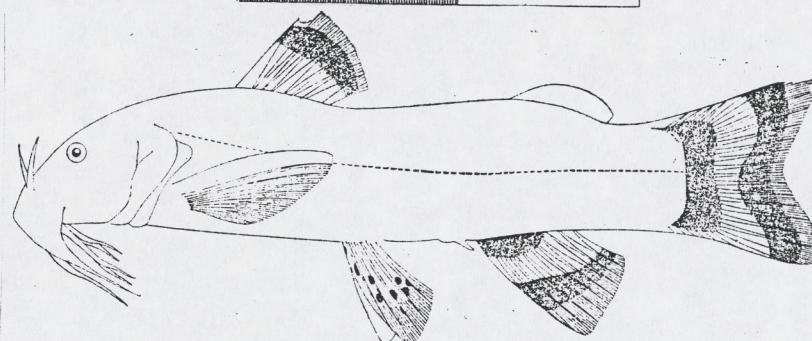
**Arius couis**  
(Bodur yayin baligi)



**Silurus glanis** (Wels)  
(Yayin baligi)

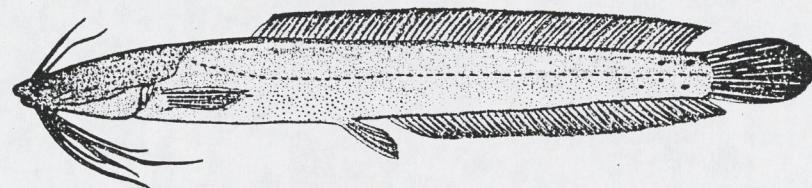
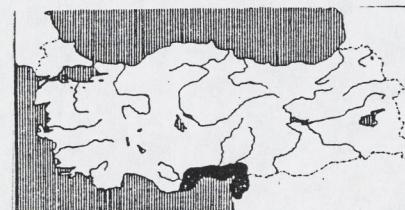


**Glyptothorax armeniacum**  
(Igneli kucuk yayin baligi)

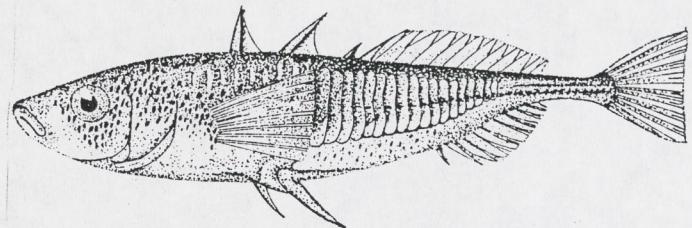
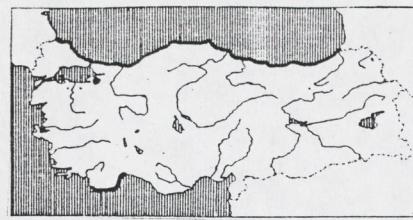


2

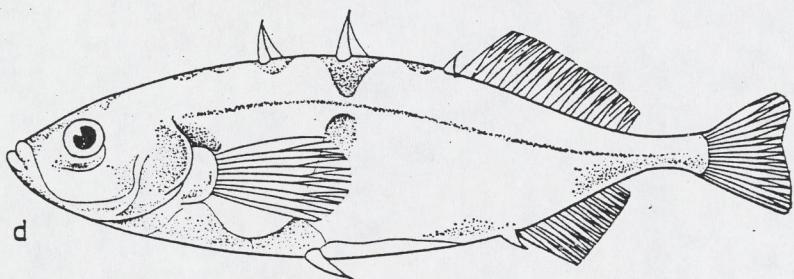
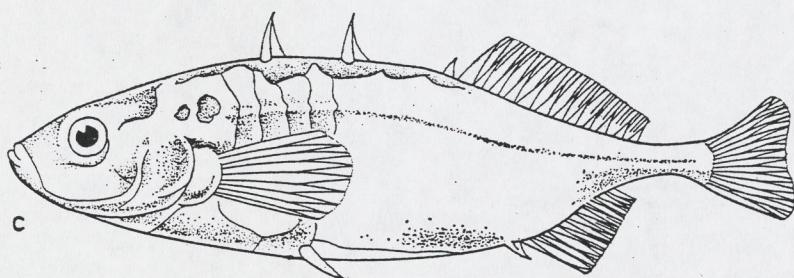
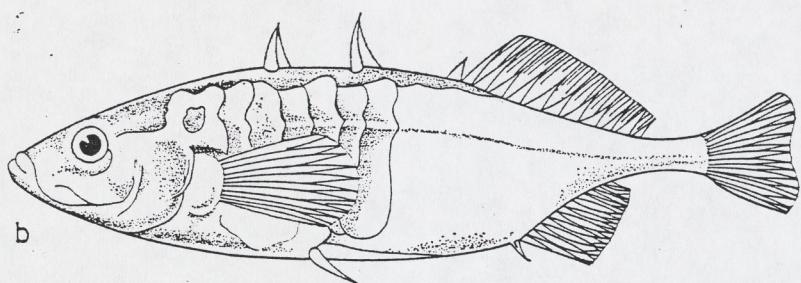
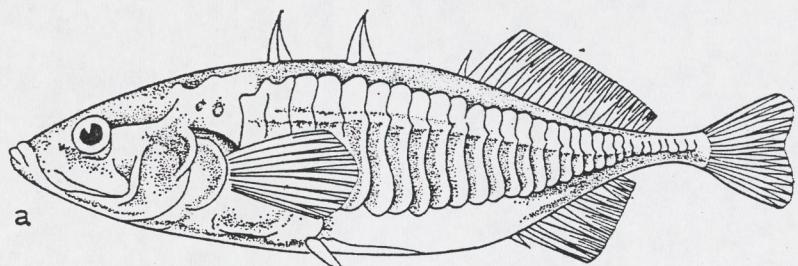
**Glyptothorax kurdistanicus**  
(Vantuzlu yayin baligi)



**Clarias lazera**  
(Sekiz biyik=eight barbel)

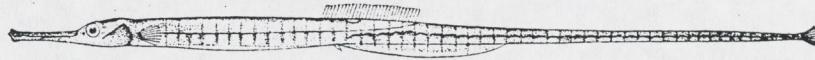
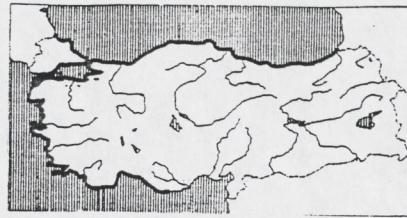


**Gasterosteus aculeatus** (Stickleback)  
(Dikence baligi)

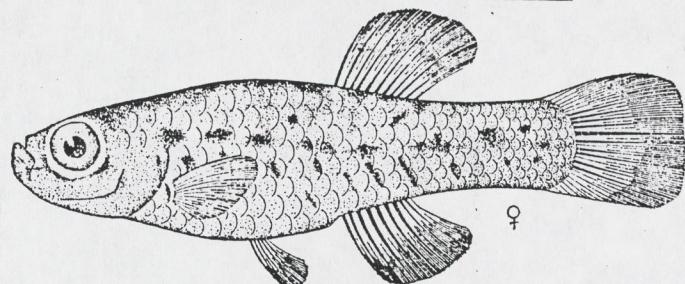
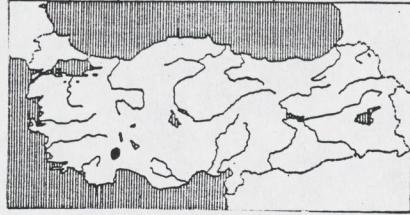


**a**-Trachura form  
**c**-Gymnura form

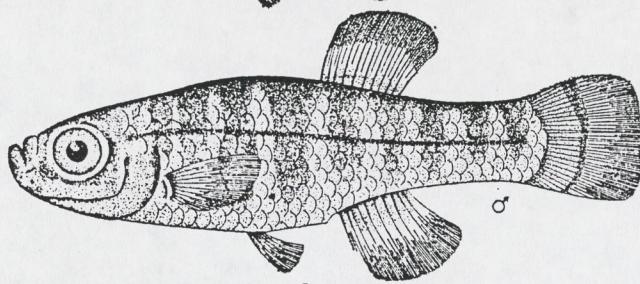
**b**-Semi-armat form  
**d**-Hologymnora form



**Syngnathus abaster**  
(Igne baligi=pin fish)

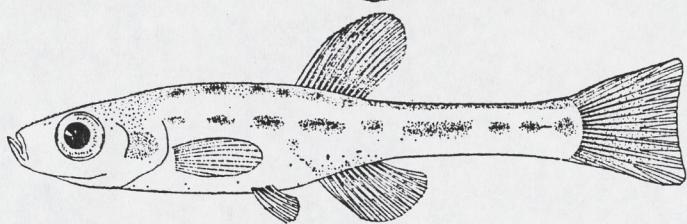
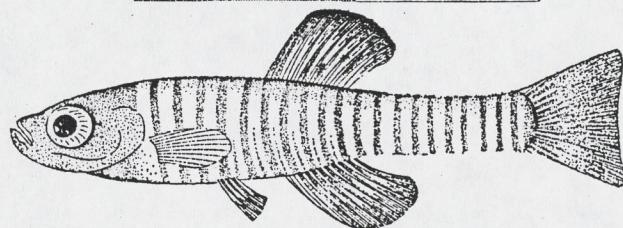
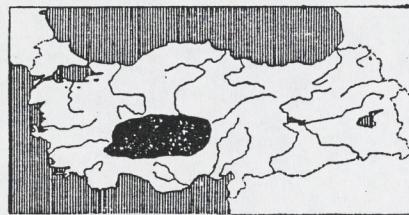


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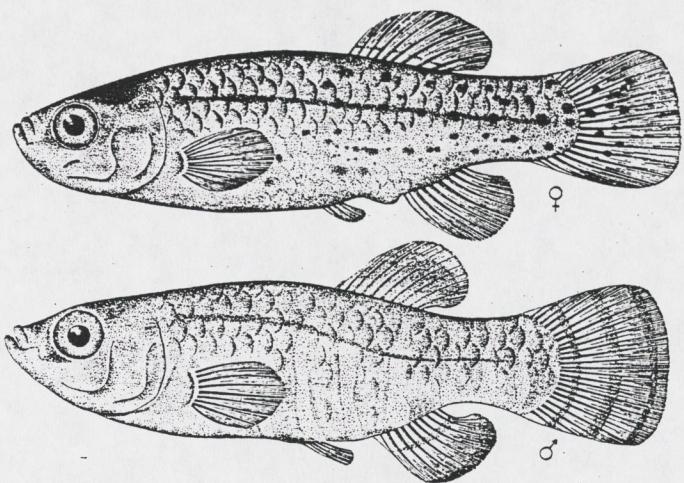
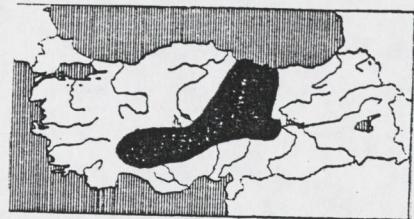


♂

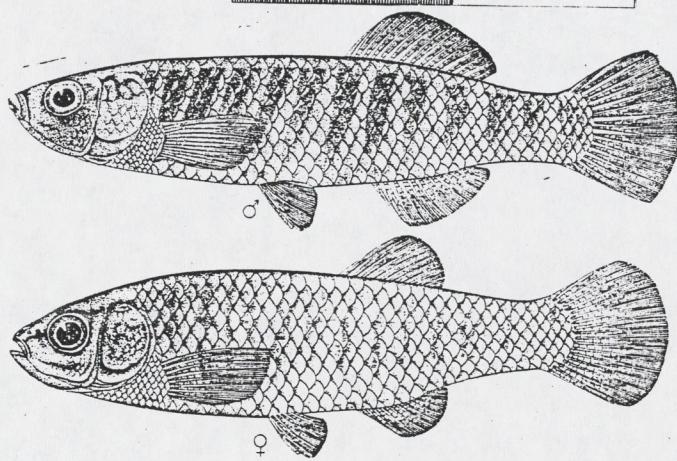
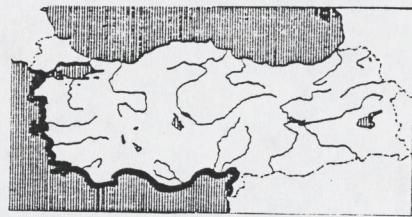
**Aphanius burduricus**  
(Disli sazancik)



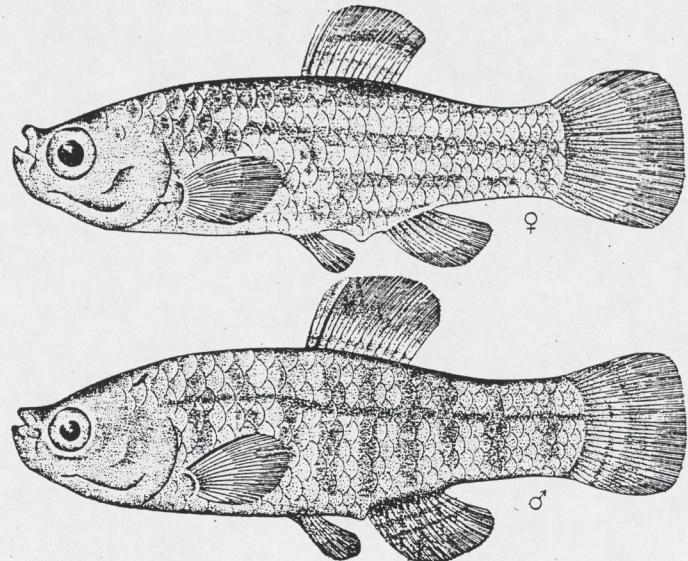
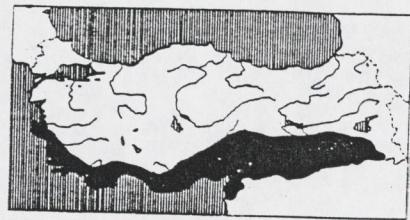
**Aphanius anatolias**  
(Disli sazancik)



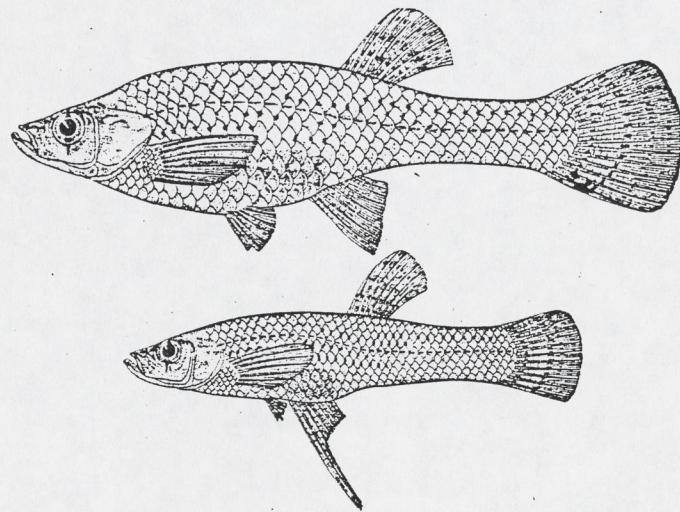
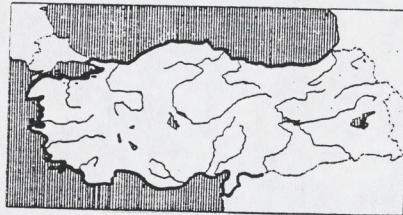
**Aphanius chantrei**  
(Disli sazancik)



**Aphanius fasciatusb** (Mediterranean toothcarp)  
(Sivrisinek baligi)

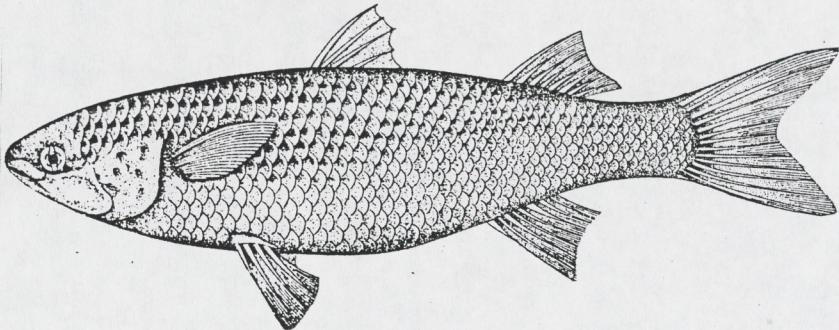
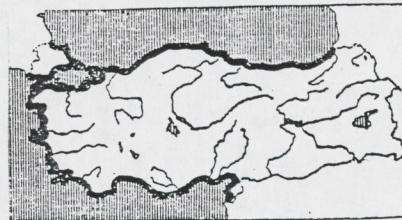


**Aphanius cypris**  
(Disli sazancik)

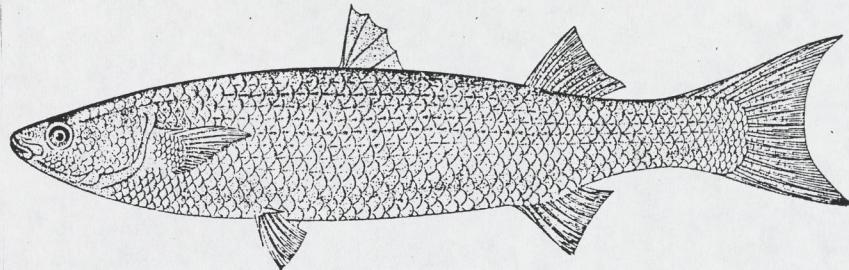


introduced  
(non-native sp)  
~ny others?

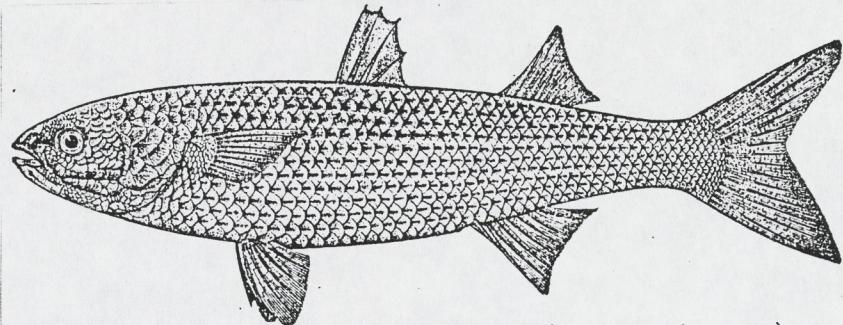
**Gambusia affinis** (Mosquito)  
(Sivrisinek baligi)



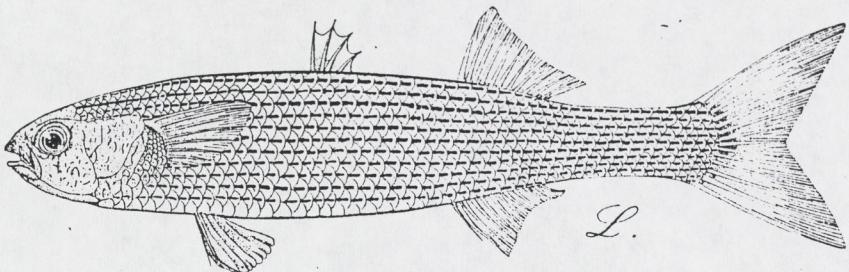
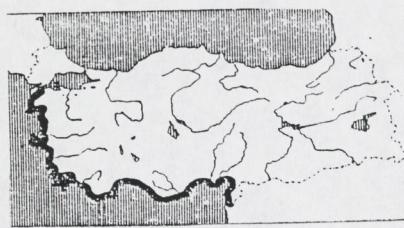
**Mugil cephalus** (Striped mullet)  
(Has kefal baligi)



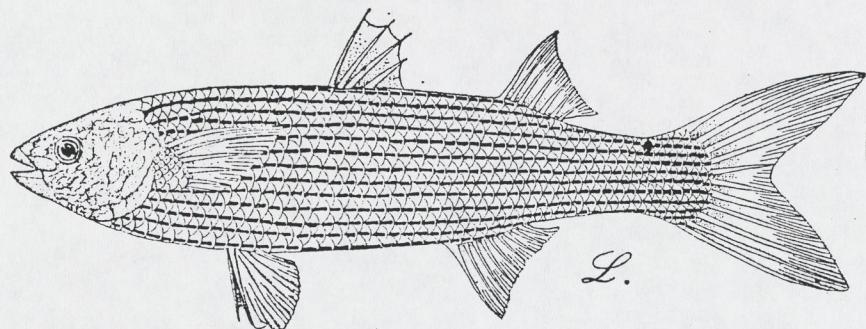
**Mugil (protomugil) saliens** (Sharpose mullet)  
(Ilarya baligi)



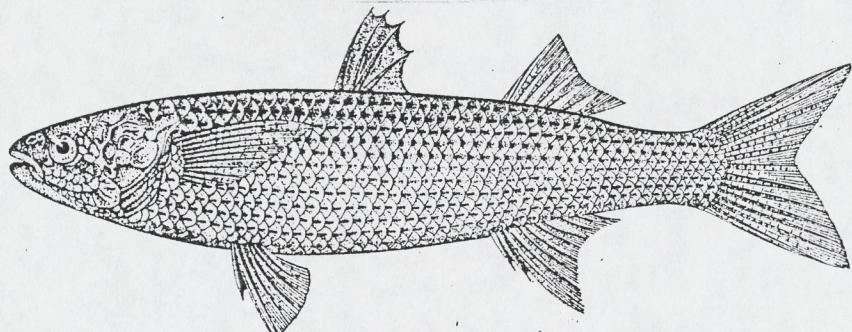
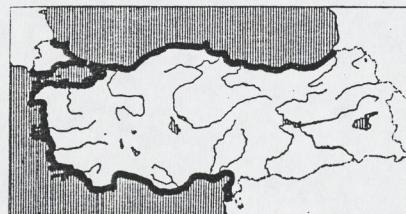
**Mugil (liza ) ramada** (Thin lipped)  
(Pulatarina baligi)



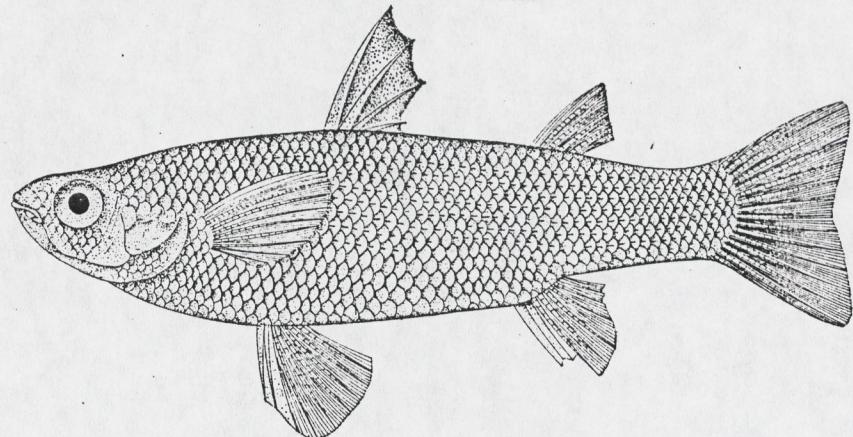
**Mugil (Oedalechilus) labeo** (Grey mullet)  
(Dudakli kefal = with lip mugil)



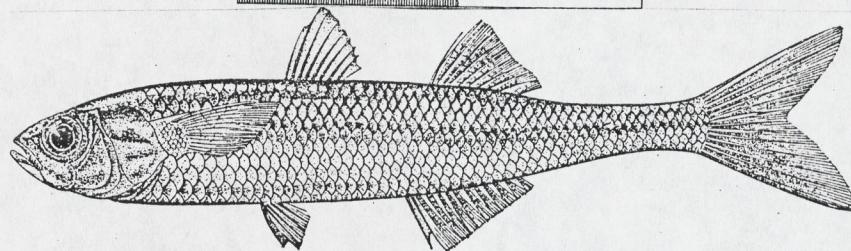
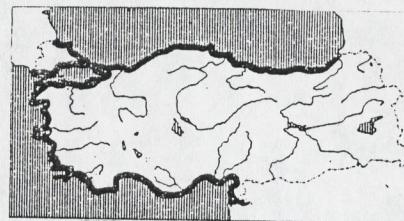
**Mugil (Chelon) labrosus** (Thichlippled mullet)  
(Kalin dudakli kefal)



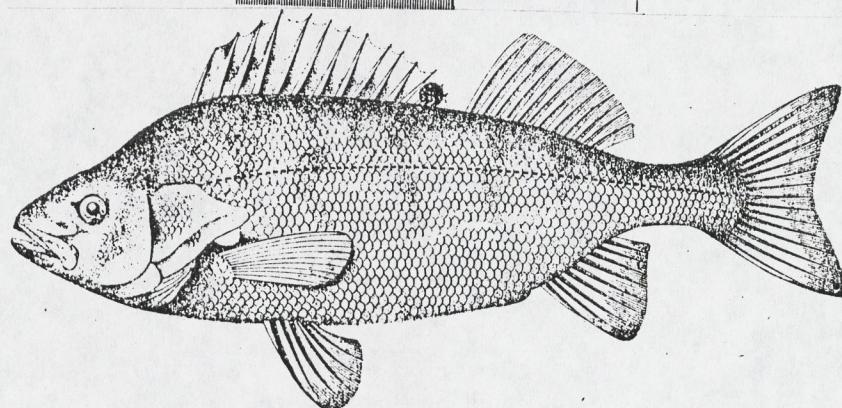
**Mugil (Liza) auratus** (Golden Mullet)  
(Altinbas kefal = Golden head mullet)



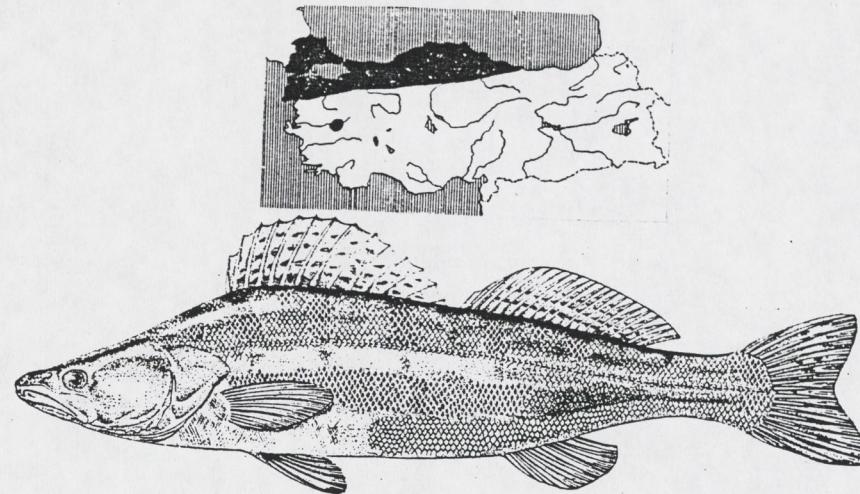
**Mugil (liza) abu** (Kefal baligi)



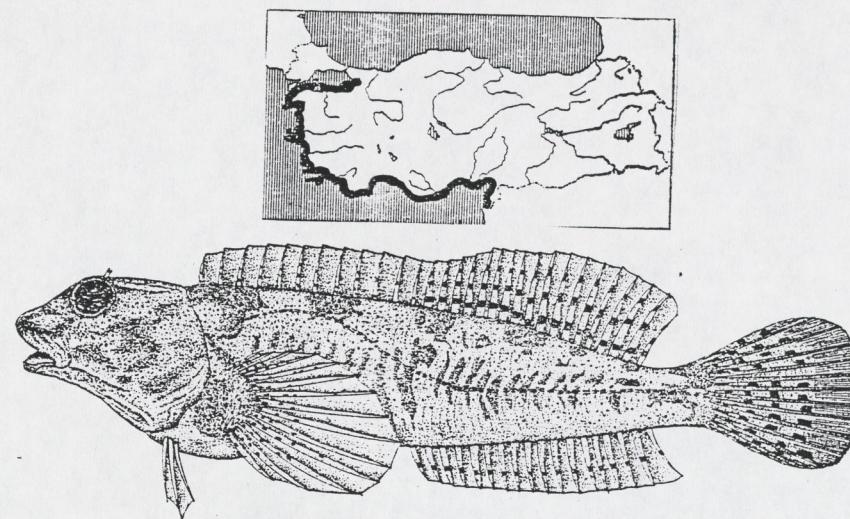
**Atherina boyeri** (Mediterranean sandsmelt)



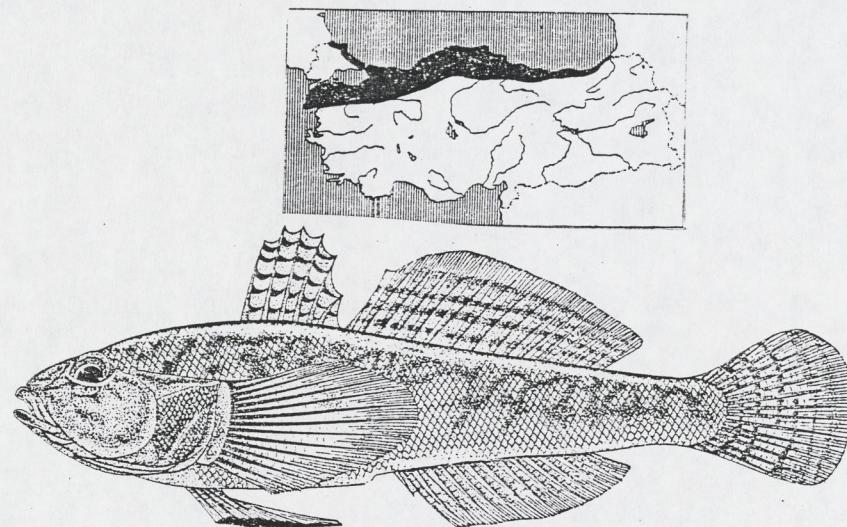
**Perca fluviatilis** (Perch)  
(Tatlisu levregi)



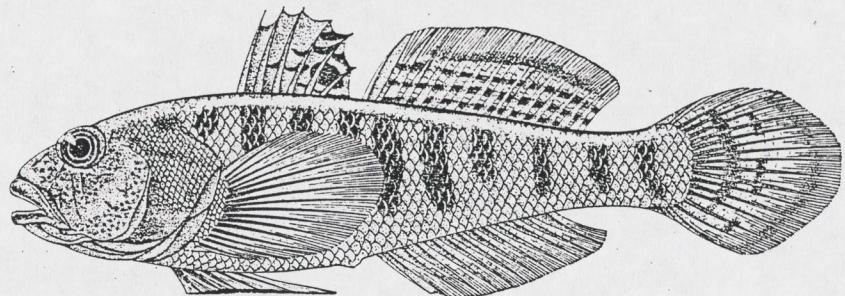
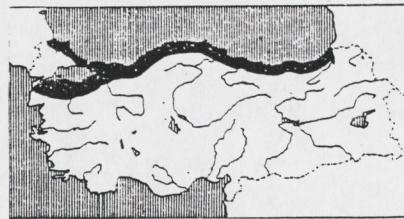
**Stizostedion lucioperca** (Pikeperch)  
(Sudak , disli balik=with teeth fish)



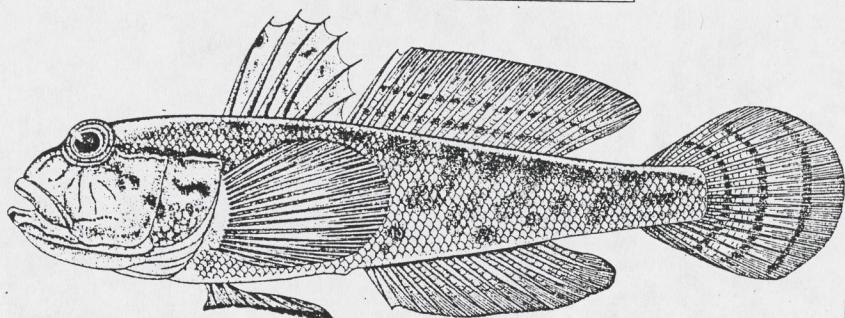
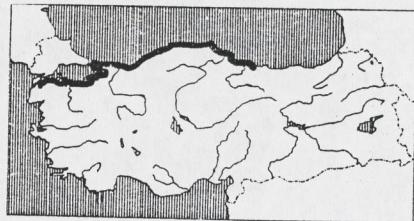
**Blennius fluvitilis** (Freshwater Blenny)  
(Horozbina )



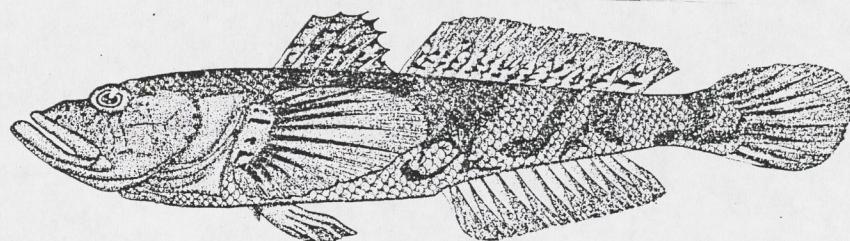
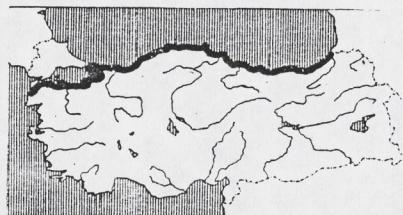
**Gobius fluviatilis fluviatilis** (Sandy goby)  
(Tatlisu kaya baligi= freshwater stone fish)



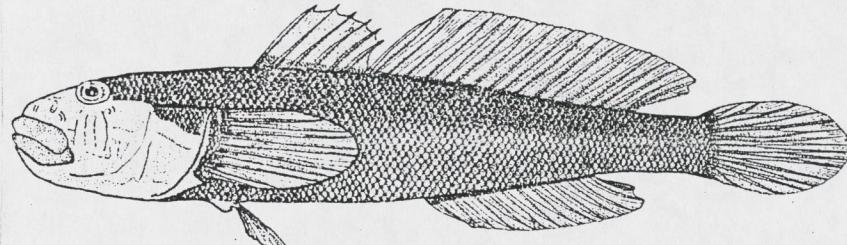
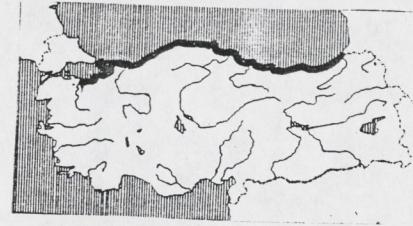
**Gobius melanostomus melanostomus** (Round Goby)  
(Kum kaya baligi = sand rock fish)



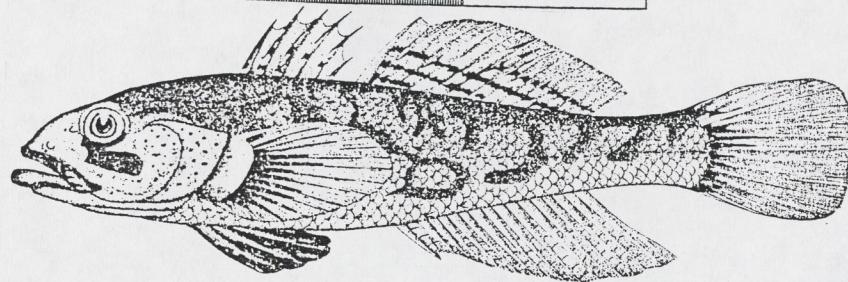
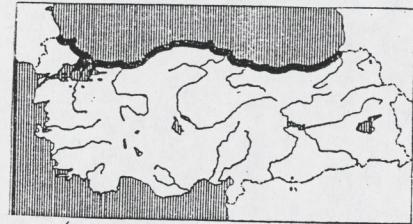
**Gobius (Babka) gymnotrachelus** (Racer goby)  
(Kucuk kaya baligi)



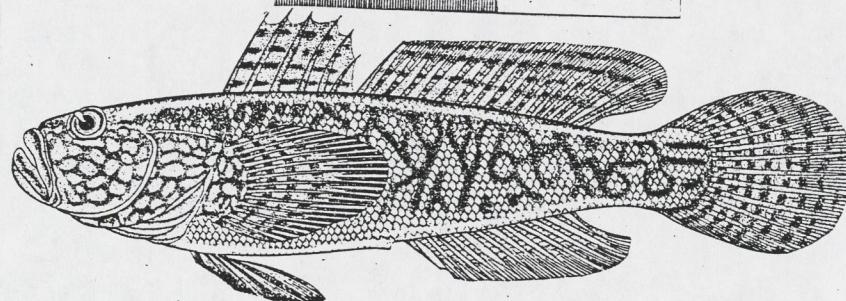
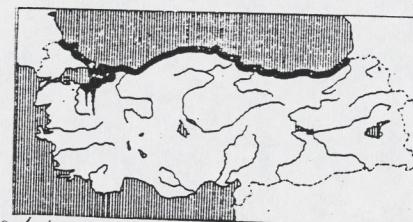
**Gobius (Mesogobius) batrachocephalus** (Toad goby)  
(Kaya kurbaga baligi=rock fog fish)



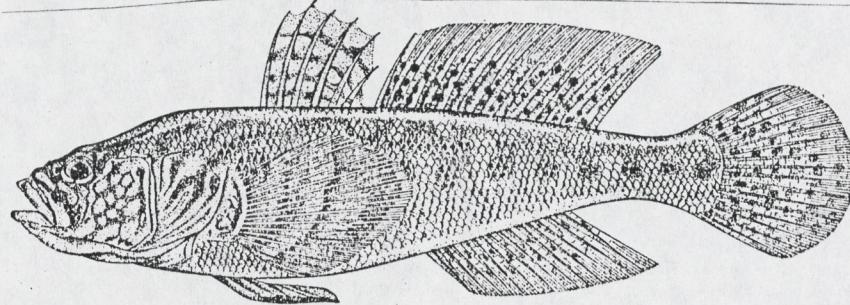
**Gobius (Ponticola) platyrostris**  
(Sari kaya baligi = yellow rock fish)



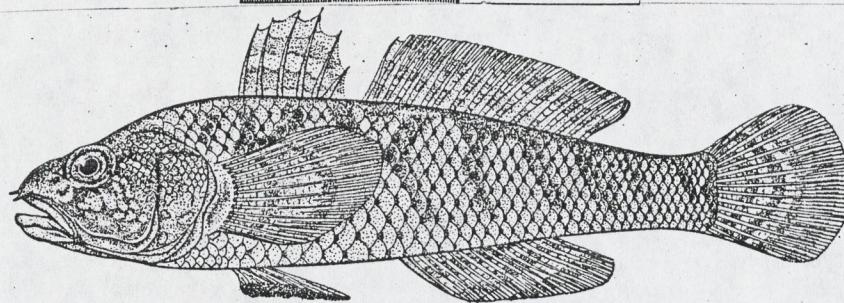
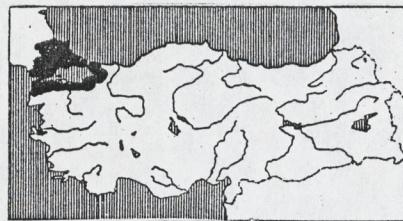
**Gobius (Ponticola) ratan**  
(Kaya baligi)



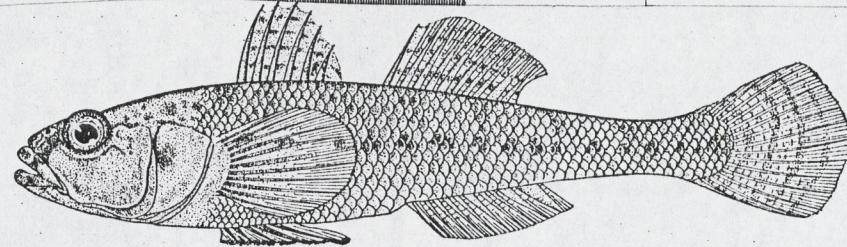
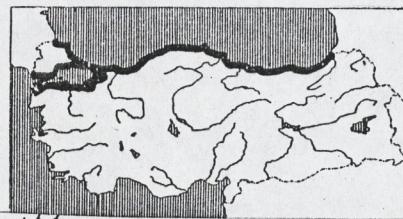
**Gobius (Ponticola) Cephalarges cephalarges**  
(Ginger goby) (Kucuk kaya baligi) = small rock fish)



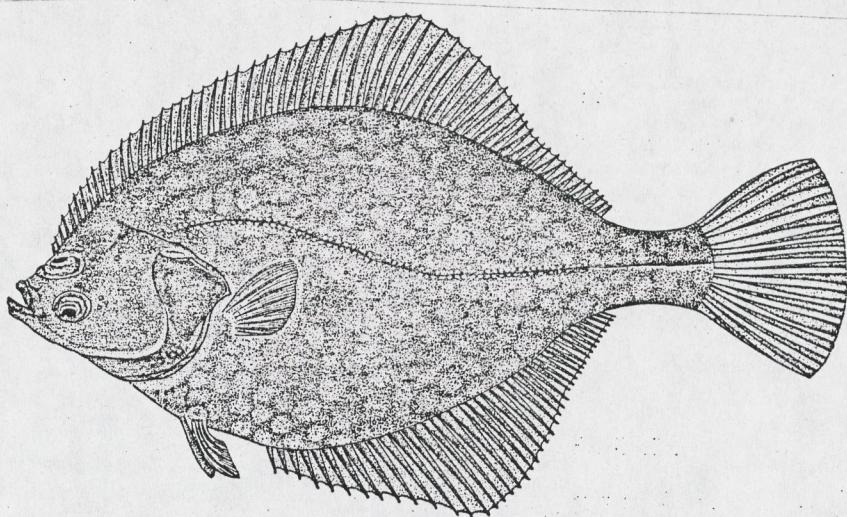
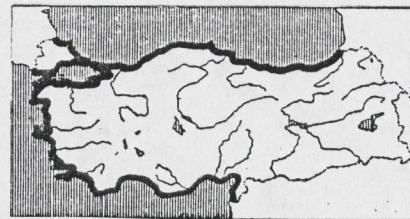
**Gobius (Zosterisessor) ophiocephalus**  
(Grass goby) (Saz kaya baligi)



**Proterorhinus marmoratus** (Tubenose)  
(Tatlisu kaya baligi)



**Pomatoschistus (Iljinia) Microps leopardinus** (Caucasian Goby)  
(Kucuk kaya baligi)



**Platichthys flesus** (Flounder)  
(Dere pisisi)

Some species have found the fist time in Turkey by Turkish and foreign researchers. Some species still don't have Turkish name. Each species distributed different habitats and spawning period, egg diameter, and fecundity are different. Some of them catadromy, some of them anadromy. ~~Familia Mugilidae~~ has catadromy<sup>ous</sup> species. Most of them have economical value.

If we compare Turkey freshwater fish fauna with North American freshwater fishes, North American freshwater fish fauna are more wealthy than Turkey freshwater fish fauna. There are more species in North<sup>Am</sup> freshwater. Similar of species habitats are different because of geological environment. Also spawning period, fecundity are different in some species because of enviromental conditions,