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# COMMON FOOD FISHES OF SHANGHAI

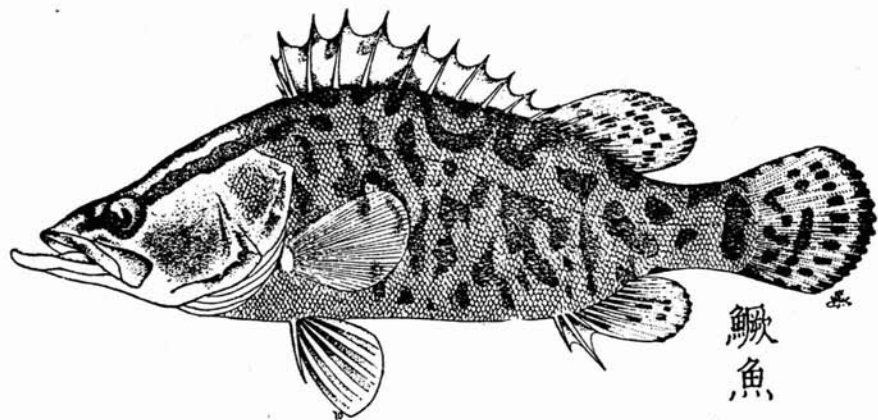
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by

BERNARD E. READ

*Henry Lester Institute of Medical Research  
Shanghai*

1939



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## INTRODUCTION

A year ago I referred in my "Nature Notes" appearing in the *North-China Daily News* to the different kinds of excellent food-fishes to be purchased in normal times in the Shanghai markets. I deplored the fact that foreign residents in this city seemed to be unaware of what was to be had in this direction, for the most part contenting themselves with some half-dozen well known varieties. The occasion for these remarks was the receipt of an excellent illustrated monograph in English and Chinese on "Common Marine Food-Fishes of Hongkong" by Professors G. A. C. Herklots and S. Y. Lin. I suggested that something of a similar nature should be produced for Shanghai, and remarked that here was an opportunity for some local authority on such matters to win immortal fame and the undying gratitude of all Shanghai housewives and caterers by writing and publishing a book on the same lines as that of Professors Herklots and Lin.

I did not then know that such a work was actually in course of preparation by Dr. Bernard E. Read, of the Henry Lester Institute of Medical Research, whose researches upon and analyses of foodstuffs and native drugs in China have been of such importance in matters of health and dietary in this country. Dr. Read's work on local food-fishes has now been completed, and is here presented to the public. In the following pages of this book will be found pictures of thirty-two species of common food-fishes of this area, both marine and fresh-water, with their popular English, scientific and local Chinese names. A description of each of these fishes is also given, together with tables indicating their vitamin content and food value.

There is no need to stress the importance of such a book to the community, since this must be self evident; but one cannot help feeling a sense of gratitude towards its author. As a matter of fact, the preparation of this book, which has involved a great deal of work on the part of Dr. Read, has been a genuine labour of love, for not only has he conferred a blessing upon the Shanghai community in producing it, but he has presented it to the North China Branch of the Royal Asiatic Society, of which he is one of the Vice-Presidents for publication. Any profits that may accrue from the sale of the book will go towards paying off the Society's present burdensome debt.

A few general remarks about the food-fishes of the Shanghai area and neighbouring seas may not be out of place. This is, of course, a very big subject, and one to which only a large volume, or even a series of volumes, could do full justice. Recently in a lecture presented before the Royal Asiatic Society by Dr. Yuanting T. Chu, of St. John's University, over sixty species of fish were described as having been taken in the waters of the Whangpoo River, the Si Tai Lake from which they flow and the Yangtze Estuary, some of these being purely fresh-water or brackish water species, others being anadromous, coming in from the sea to breed.

Besides these, however, there are a great many purely marine forms, commonly taken by the Woosung fishermen well out at sea and brought in to Shanghai markets for sale. Altogether there must be several hundred species of fish to be found in this general region. Indeed, it will be noticed that, besides the thirty-two species described by Dr. Read and illustrated in this book, some sixty-eight other species are listed as having been secured in the Shanghai fish markets.

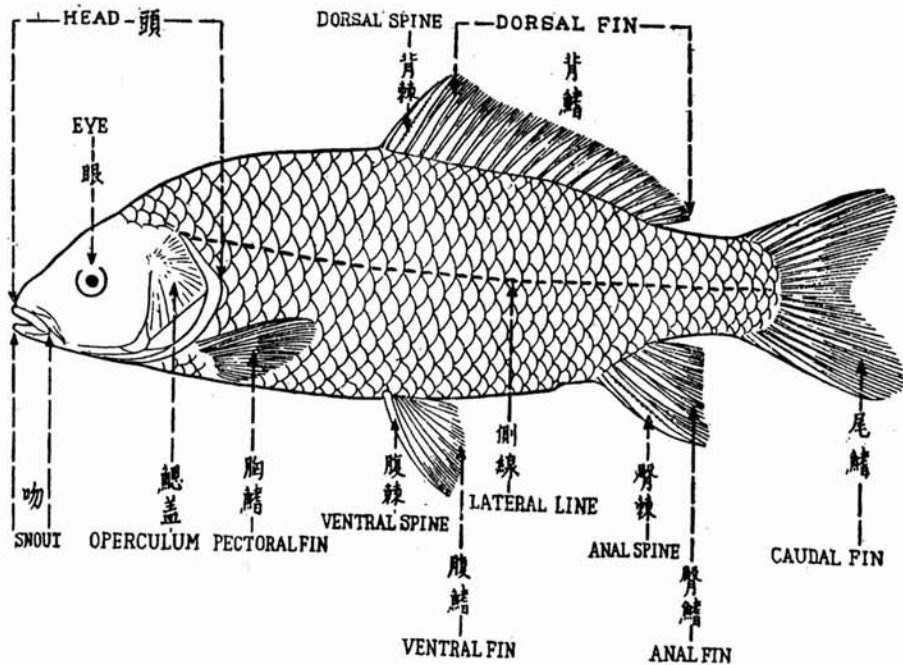
While on the subject of food-fishes, attention might well be drawn to a genus of marine fishes, the members of which may prove to be deadly poisonous, although frequently offered for sale in local markets. These are the so-called Puffers (*Spheroides*) of the family *Tetraodonidae*. They can easily be recognized by their large blunt heads and rapidly tapering scaleless bodies, often adorned with minute prickles which give their skins a rough feeling. They have small mouths armed with four large strong teeth, not unlike human incisors, which protrude beyond the lips, and from which the generic name, *Tetraodon*, of some of the species is derived. These fish are popularly called Puffers, because, when freshly caught they have the peculiar habit of distending their bellies with air almost like a balloon, so that they float helplessly upside-down at the surface of the water. There have been a great many cases of poisoning with resulting death amongst the Chinese in Shanghai through eating these fish, and the Health Department of the Shanghai Municipal Council has frequently issued warnings to the general public against the consumption of fish of this family.

There seems to be a prejudice amongst foreign residents in Shanghai against eating the various fresh-water fishes, mostly

members of the carp family, it may be noted, offered in the local markets. The reason given for this is that these fish so often have a muddy taste. This drawback can, however, easily be overcome. Nearly all of these fresh-water species are brought to the market alive, being kept in large tanks till sold. By purchasing such fish in a living condition and keeping them so for a few hours in clean water, the muddy taste can be eliminated, when it will be found that they offer a very appetising dish.

In conclusion it may be noted that two large groups of food-fishes which are extensively consumed in Europe and America are conspicuous by their absence from the waters of this general region. These are the members of the Salmon and Trout family, *Salmonidae*, and those of the Cod family, *Gadidae*, both groups being cold water fish restricted to more northerly climes. Fish popularly called Cod in Shanghai are not true Cod, nor are they even remotely related to the members of this family. Both fresh and dried Salmon are sold in Shanghai, but these are imported from abroad.

Arthur de Carle Sowerby



THE TOPOGRAPHY OF A FISH

## SHANGHAI FOOD FISHES

### FISH AS FOOD

Fish as food are worthy of considerably more attention than is given to them at the present day. By the nature of the circumstances the diet of the Esquimo is limited to fish and marine products, yet he keeps in excellent health, even without a great deal of cooking of his food. In general it may be said that marine products contain all the protein, fat, mineral salts, vitamins and other extractives essential in an adequate diet. Hence with the great need for good food all over the world attention should be given to the almost unlimited resources of mankind in the oceans and big rivers.

Fishing and hunting habits preceded man's settled farming habits, so that a knowledge of fish and their value as a food goes back to the earliest days of the human race. The legendary Emperor Fu Hsi (B. C. 2953-2838) is said to have been given his particular name because he made different kinds of nets and taught his people how to secure the products of the sea and snare animals.

### JAPANESE FISH

In the Far East there are many large fisheries. The most noteworthy are those of the Japanese, even so in the food of Japan fish only constitute about eight percent of the diet, actually less than 5 percent of the food eaten. The total consumption in Japan of fish, shell-fish and other marine products in the year 1925 amounted to 2,384,536,000 kilograms, of which 78 percent was fresh, 5.5 dried, and 16.5 shell-fish and other products. Of the total food consumed in Japan in 1925, fish and fish products constituted 2.4 percent, as compared with 0.25 percent of meat; cereals amounted to 70.85 percent.

### SHANGHAI FISH

The exact amount of fish eaten in China is not known, but from the fact that over 90 million catties were sold in Shanghai in 1934 shows that proportionately very far less is eaten than in Japan.

### FISHERIES

The China Industrial Handbooks for Chekiang and Kiangsu provide a good account of the fisheries in these two provinces, which have a total coastline of 3769 *li*. In Chekiang alone about 100,000 families are engaged in fishing, owning over



17,000 boats and there are no less than 3,000,000 people who are directly or indirectly dependent upon fishing for their livelihood. The most important marine fishing grounds extend from Lussuyang 呂四洋 to Feishanyang 菲山洋, in which about 1000 pairs of big boats operate from Shenchiamen in the Chou-shan Archipelago. The fishing season lasts from the beginning of September to the end of April. "Small pair boats" operate from April to June, and the "liu wong" type from April to August.

### COASTAL FISHERY

The principal catches in the coastal fishery of Chekiang consist of big and small yellow croakers (wongyu), cuttlefish, sharks, eels, herring, pomfret, flat-fish, porgy, abalone, razor-shells, crabs, jelly-fish and sea-weed. The annual catch of big croakers is valued at 5 million dollars, and that of the small croakers at 8 million dollars. The fresh fish is transported by ice-boats to Shanghai, and the big ports along the coast down as far as Foochow and Amoy in Fukien Province. Kiangsu has a similar market with a good deal of mackerel.

A large industry exists in the preservation of marine products, the principal output being dried croakers (corvola) and cuttlefish. There are also dried eels, herrings, jelly-fish, shrimps, and hair-tails. The chief industry of cured corvola consists of three types:—

(a) *Kua hsiang* 瓜齏 prepared by rubbing salt into the gutted fish. After 2 or 3 days the salted fish is sun dried for one or two days. Owing to the short time given to its preparation it does not remain good for very long.

(b) *Chao hsiang* 潮齏 prepared in the same way but not so thoroughly dried. This is marketed chiefly in Kiangsu.

(c) *Lao hsiang* 老齏 prepared in the same way, but more salt is used, and it is dried in the sun for 10 days. The fish is then covered in rice straw and stored until the end of the next year before being ready for the market.

### FRESH WATER FISHERIES

Owing to lack of large rivers and lakes fresh water fisheries in Chekiang are nothing like so prosperous as in Kiangsu. Chinese shad is abundant in the Lower Yangtse from Liuho to Chinkiang. Mullet grows in the Yangtse between Liuho and Kiangyin. Anchovy is caught from Kiangyin to the mouth of

the Yangtse, and catfish from Chinkiang to the mouth of the Yangtse.

Fish cultivation is an important industry in both provinces. Linhu in Chekiang and Chinkiang in Kiangsu are the most important centers for fry raising. The chief places for fish cultivation in Chekiang are Wuhsing, Shaohsing, Chiahsing, Hsiaoshan and Ninghsien; and in Kiangsu at Wusih, Wuhsien, Changshu, Tanyang, Kunshan, Kiating, Taitsang, and Nantung.

Black carp is ranked first in quality, with grass carp and bream second, and thirdly silver carp and the common carp. Ice-fish, crabs and shrimps are abundant in the lakes. The Yangchen Lake 陽澄湖 crabs are most popular in Shanghai.

### THE IDENTITY OF SHANGHAI FISH

There are more than 100 kinds of fish and shellfish to be found on the Shanghai fish markets. There are given in this bulletin the Chinese, English and Latin names of the 100 commonest fish and their allies not including shellfish. These are taken from the market reports and the Chinese publication by Mr. Hsu Chi-t'uan\*. The fish were bought on the regular markets and accurately drawn by the artist Mr. Y. C. Su to illustrate the 32 species which have the greatest sale here. The Chinese names which are not always specific usually indicate some particular characteristic in the colour, shape or habits of the fish concerned. In establishing the English and Latin names Professor Y. T. Chu's "Index Piscium Sinensium" and Mr. Arthur de Carl Sowerby's publications have been freely consulted. A number are to be found in the "Marine Food Fishes of Hongkong" by Herklots and Lin. The Latin names given by Mr. Hsu have sometimes been changed to the more proper synonyms given by Professor Chu. A certain amount of comparative data was found in "The Chemical Analysis of Food in Japan" by Saiki. Only a brief description to each fish is given to enable proper identification, and to avoid the highly technical and lengthy text of an elaborate treatise. The figure of the topography of a fish is given to enable the reader to follow these simple descriptions.

### THE VALUE OF A FISH

*Price.* Price is no real index of the value of a fish as a food. Apart from the high prices demanded for certain fish in parti-

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\*上海食用魚類圖誌。徐季博

cular seasons, mandarin fish and shad may vary eightfold in price, there is the natural difference in price created by the amount of work involved in making a catch, and the present facilities for placing the same on the market. Canning in the West has made some fish like the salmon remarkably cheap. Canned crabs from Eastern waters are on the Shanghai market but they are chiefly from Japanese canneries. It is note-worthy that there is little or no loss of the vitamin A potency in tinned fish, and the protein undergoes no change but any of the water soluble vitamins present are likely to deteriorate.

*Personal preference.* There is no accounting for some personal preferences, but people generally prefer fish with few bones like the mandarin fish to the anchovy which is so full of fine bones. Fresh fat fish when cooked are undoubtedly usually more tasty than the blander varieties that have little or no fat. It should be recognised that regarded physiologically good appetite depends upon pleasant memories, so in trying out new dishes for the first time have them cooked by an expert who knows how to bring out the best flavour and have the dish served and eaten in pleasant company. Many people do not like eels because they have to over-come the psychological hazard set up by memories of plebian smells from eel shops in the London slums. Raw oysters and clams are distasteful to some people. Taken with their favourite condiment they may be surprised how easily a liking for these nutritious foods may be developed.

*Analytical data.* The true food value of a fish must necessarily depend upon its composition, knowledge of which can only be obtained by detailed analysis. These analyses are set forth in the attached tables showing the percentage values of the protein, fat and carbohydrate and the milligrams percent of the more important mineral elements. With one or two exceptions taken from Saiki's tables these figures are the results of analysis undertaken in Shanghai upon the fish purchased. Altogether 65 fish have been analysed. A further list of 35 common market fish is given, with their various names, of which analysis has not yet been undertaken.

(a) *Edible portion.* Removal of the head, fins and bones only leaves about 57 percent of edible flesh in most fish. Salting and drying removes much of the water so that while the edible part may weigh much less it contains the same amount of solid material. In considering the relative cost of a fish this

has to be taken into consideration, the big-head with 57 percent of waste is not so economical as say the black-headed carp with only 36 percent.

(b) *Protein.* The quantity of protein present may vary from 6.3 to 24 percent. These figures are important to the dietitian in estimating the available protein in the diet which should amount to 70 grams daily for the adult.

The quality of this protein is not uniformly the same. Some fish protein is superior to others on account of its content of particular amino-acids. Feeding experiments have shown that herring, salmon, bonito, scallop, crayfish and crab are equal to beef protein and superior to mackerel, tunny, shark, puffer and cuttlefish which is not so good.

### FISH PROTEIN

Relative growth value compared with animal protein.  
Percentages from Tokuyama and Nakahara.

Scallop .....	150	Cuttlefish .....	50
Oyster .....	110	Ear-shell .....	50
Clam .....	110	Porgy .....	50
Bonito .....	100	Tile-fish .....	50
Flying-fish .....	90	Pomfret .....	50
Mackerel, spotted	60	Ice-fish .....	50
Mullet .....	60	Barracuda .....	50
Gurnard .....	60	Sole, Japanese	40
Croaker, Chinese ..	60	Pomfret, small	40
		Globe-fish .....	40
		Hair-tail .....	40
		Eel, marine .....	30
		Yellow-tail .....	10

(c) *Fat.* Stefanson has shown that a fair amount of fat is beneficial if not essential in the digestion of protein, hence the more tasty fat fish are to be recommended. It is only after immoderate eating that the normal person should complain of lack of satisfactory digestion. Certain of the fatty acids in fat are essential to good health, these are notably to be found in the vegetarian fish, like the ide or grass carp and bream. Furthermore fats carry vitamin A and D, the value of which are today a byword in the household of every educated person.

(d) *Mineral salts.* The values for calcium, phosphorus and iron are given in the tables. The average diet is considered to contain too little lime, which should amount to 600 milligrams

### VITAMIN CONTENT OF FISH

English name	Chinese name	A	B	D	C
		Units per 100 grams			mg. per 100 gm.
Barbel	鱒 魚	—	—	—	16.4
" liver	鱒 魚 肝	—	—	—	58.4
Carp flesh	鯉 魚 肉	1020	50-100	—	+ +
Carp, golden	鯽 魚	—	—	—	+ +
Catfish,	鮠 魚 肝 油				
liver oil		150,000	—	—	—
Catfish, yellow-headed	黃 鰱 魚	—	—	—	+ +
Dogfish,	鮫 魚 肝 油				
liver oil		—	—	300 to 2000	—
Eel	鱈 魚	600 to 7930	—	4700	+ +
				body oil	
Flat fish,	比 目 魚 肝 油				
liver oil		2000	—	140,000	—
Herring	勒 魚	+ +	10	20,000	27.7
" roe	勒 魚 子	—	60	—	—
Mullet	鯔 魚	—	10	—	—
Puffer, liver	河 豚 魚 肝 油				
oil		—	—	57,000	—
Rockfish,	膽 魚				
liver oil		—	—	150,000	—
Sciaenid	石 首 魚				
(Croakers)		trace	—	—	14.1
Sciaenid, liver	石 首 魚 肝	—	—	—	59.1
Shark fat	鯊 魚 脂	426,777	—	+ +	—
Sheatfish	鱧 魚	—	—	—	+ +
Skate	雁 木 鱈 肝 油				
liver oil		+ + +	—	2,500	—
Snake-head	鱧 魚	—	0	—	+ +
Sturgeon,	鱧 魚 肝 油				
liver oil		2 million	—	—	—

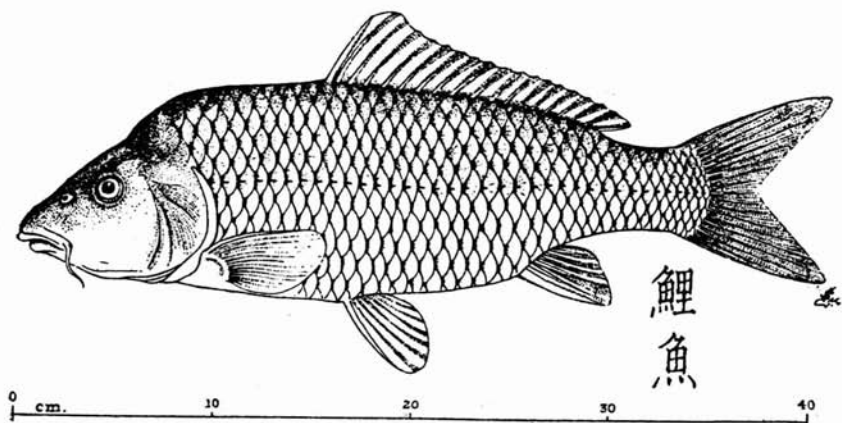
daily. Some fish are a rich source of this element, attention is drawn to the icefish, bullhead and marine eel. There should be twice as much phosphorus, which is more than provided for by the values given. The body also requires daily about 15 milligrams of iron; the seabream, angler, flying-fish, jelly-fish and half-beak are rich in this element. One other element of major importance is iodine. Whilst no analytical figures are given, it is generally understood that all marine products are rich, and should be taken freely to provide iodine which is so necessary in the diet for the prevention of goitre. In this respect many years ago Macgowan recommended the Chinese shad.

(e) *Vitamins.* Very few Chinese fish have been examined for their exact amount of vitamins present in the edible flesh. With the known great therapeutic value of cod liver oil, the livers of a great many fishes have been examined as sources of vitamins A & D, and it is common knowledge that halibut liver oil is far richer than cod liver oil in vitamin A. The flat fishes in general have liver oils rich in these vitamins. The table summarizes the general observations made of which particular attention is drawn to the following points. The flesh of the herring and the eel contain fat unusually rich in vitamins A and D. The cheap price of herrings should not let people underrate their great nutritional value. In Japan there is one particular day in spring when eels are eaten with the idea that they keep away sickness for the rest of the year. Vitamin A is known as the anti-infective vitamin, which gives a rational basis for this old custom. The flesh of the common carp is also rich in vitamin A, no reports are available of its vitamin D content. It may be assumed that the other carps are also good in this respect. Carp flesh also contains vitamin B, it has been used in old Chinese medicine for many centuries as a beri-beri remedy. The mullet and herring are also known to have vitamin B, and other fish not yet examined may provide this important essential removed from our cereals in the preparation of white flour. Analysis of vitamin C is so easy now, more is known about the sources of this vitamin and it is considered that the fish in Japanese food provide an adequate daily amount. The carp, catfish, eel, herring, croakers and snakehead are good sources; with the lemon so commonly served with fish in Western meals this

is further fortified. The known facts place the carp, eel and herring as superior foods.

**THE CHOOSING OF FISH.** Practical considerations make it important to include the following characters of fresh and stale fish cited from Herklots and Lin:—

	<i>FRESH FISH</i>	<i>STALE FISH</i>
Mouth	Gills open	—
Gills	Crimson and open	Greyish and slimy
Eyes	Full, prominent	Not firm
Pupils	Clear black	Greyish
Cornea	Transparent	Cloudy
Skin	Silvery, often iridescent	Dull, colours faded
Flesh	Firm and elastic. Difficult to remove.	Not so firm. Easily removed from bones.
Abdomen	Firm and elastic	Soft and pulpy
Back	Pale flesh below backbone	Reddish
Smell	Mild, sweet	Strong, stinking
Taste	Rich and good	Very little and poor
	Dark fleshed oily fish must be <b>FRESH</b>	White-fleshed fish <b>KEEP BETTER</b>



*Cyprinus carpio*, (Linnaeus)

### 1. COMMON CARP

- 鯉 *Li*, the fish of form.  
 琴高 *Ch'in kao*, fairy fish.  
 鱧魚 *Ling yu*, angular (scale) fish.  
 財神魚 *T'sai shen yü*, god of wealth fish.

#### DESCRIPTION.

A stout compressed body with rounded abdomen. A broad head with an inferior mouth. Two pairs of barbels, the lower longer. Large thick scales edged black, so evenly arranged they form a net-work. 36 scales along lateral line. Colour greenish yellow, darker above and lighter below. Long dorsal fin with 3 spiny and 18 soft rays. Tail divided. Length up to 18½ inches.

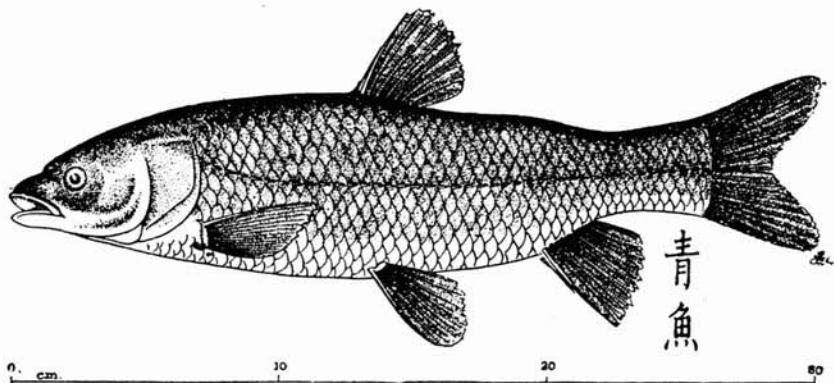
DISTRIBUTION:—All over China.

SEASONS:—Very plentiful at Chinese New Year. All the year.

RETAIL PRICE:—24 cents a catty. 1937 average price 50 cents a pound.

FOOD VALUE:—Exceedingly nutritious on practically all counts. High protein, fat and mineral salts. Rich in vitamins A, B and C. 50 percent edible.





*Mylopharyngodon aethiops*, (Basilewsky)

## 2. BLACK CARP

### BLACK-HEADED CARP

青魚	<i>Ch'ing yü</i> , azure fish.
黑鮡	<i>Hei huan</i> , black ide.
黑鯖	<i>Hei ch'ing</i> , black carp.
烏青	<i>Wu ch'ing</i> , black azure.

#### DESCRIPTION.

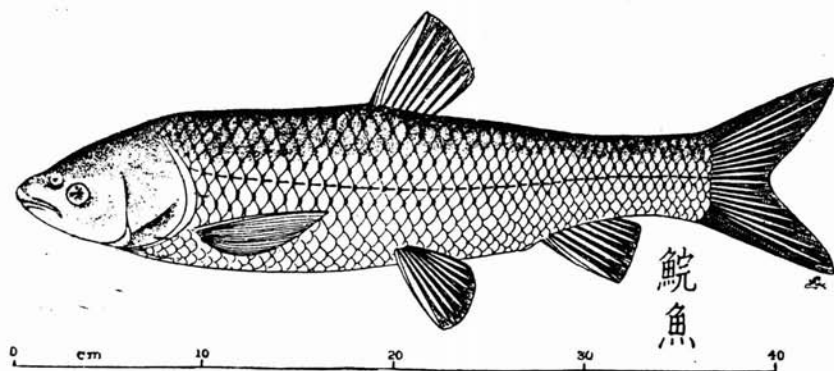
Elongated flat body with rounded abdomen. Length up to 22 inches. Mouth terminal. The body and fins blackish with whitish ventral surface on head and abdomen. One row of pharyngeal teeth, right side 5, left 4, all molar like. Dorsal fin short with 3 simple and 7 branched rays, in the middle of back. Anal fin far behind. Ventral and pectoral fins not large. The tail forked. It feeds on snails. A smaller coarser fish, the Japanese mackerel is also known as the *ch'ing yü*. Lateral line 41 or 42 scales.

**DISTRIBUTION:**—Cultivated most extensively in Chekiang and Kiangsu. Shanghai to Peking.

**SEASONS:**—All the year.

**RETAIL PRICE:**—20 cents a catty.

**FOOD VALUE:**—64 percent edible. Not as tasty as the carp and the food values are all less, but it ranks as a good nutritious fish.



*Ctenopharyngodon idellus*, (C. & V.)

### 3. GRASS CARP

#### IDE. GRASS FISH. SHUTTLE FISH

鯪	<i>Huan</i> , the ide.
草青	<i>T'sao ch'ing</i> , azure grass fish.
鱮	<i>Hun</i> , dietary fish.
草魚	<i>T'sao yü</i> , grass fish.
池魚	<i>Ch'ih yü</i> , pond fish.
鯪魚	<i>Huan yü</i> , leisurely fish.

#### DESCRIPTION.

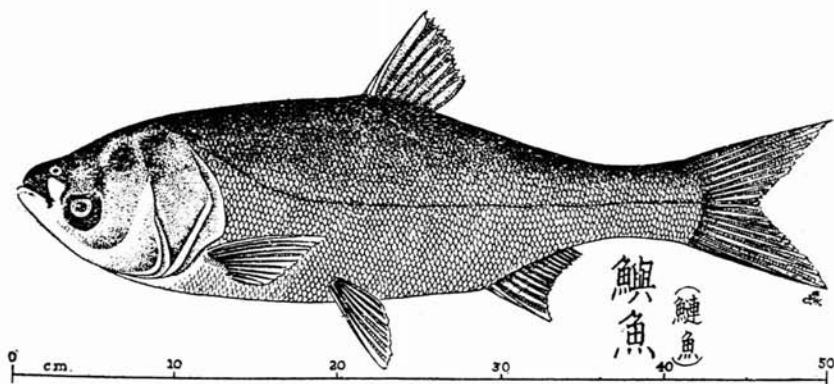
Shaped like the black carp, a little stouter in the body and the tail not turned up. Large scales 38 to 40 in the lateral line, 7 scales down from the dorsal fin and 5 up from the ventral. Fins similar in size to the black carp. Tail forked in equal lobes. Two rows of pharyngeal teeth, left 2 and 5, right 2 and 4, comb shaped with a series of groves. A great vegetarian, living on grass and water plants. Yellowish colour with a grassy tinge. Scales edged black. Ventral fin orange, the other fins blackish. Length over 12 inches.

**DISTRIBUTION:**—All over the country, extensively cultivated in the local provinces.

**SEASONS:**—All the year.

**RETAIL PRICE:**—30 cents a catty.

**FOOD VALUE:**—Of unusual value for its content of certain essential fats, from its vegetarian diet.



*Hypophthalmichthys molitrix*, (C. & V.)

#### 4. SILVER CARP

##### CHINESE WHITE FISH

- 鯪魚 *Lien yü*, trooping fish.  
 白鯪 *Pai lien*, white troopers.  
 白魚 *Pai yü*, white fish.  
 鯪魚 *Hsü yü*, companion fish.

##### DESCRIPTION.

Compressed high body, thin along the entire abdomen. Head rather large with the eye in the lower half below the level of the angle of the mouth. Gill-membranes united on throat, and gill rakers fused in a half moon plate. Scales very small, 104 to 110 on lateral line, which is curved downward. Fins not very large, dorsal 3 simple and 7 longish branched rays, anal with 3 simple and 12 shortish branched rays, pectoral one spiny, and 18 long branched rays reaching to the ventral fin. Tail forked. A silvery coat with dusky fins. Length up to more than 2 feet.

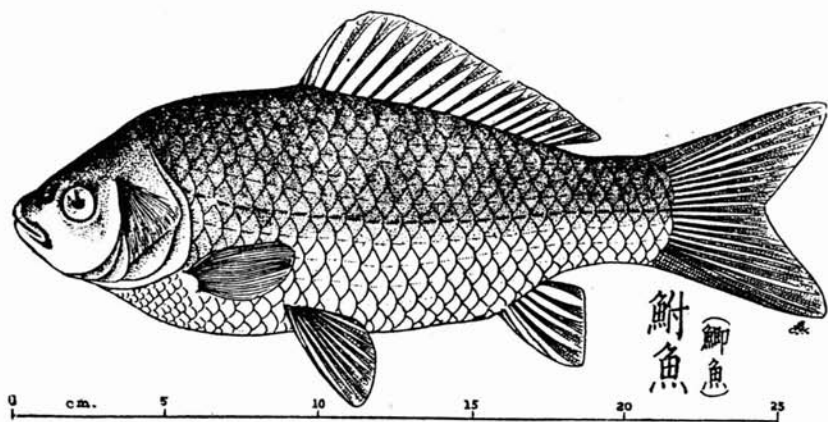
**DISTRIBUTION:**—The Yangtse, West River and Sungai.

Extensively cultivated.

**SEASONS:**—All the year.

**RETAIL PRICE:**—26 cents a catty.

**FOOD VALUE:**—A very fine flavoured food fish. Mineral salts good.



*Cyprinus auratus*, (L.)

## 5. GOLDEN CARP

鮒魚 *Fu yü*, paired fish.

鯽魚 *Chi yü*, fish in file formation.

### DESCRIPTION.

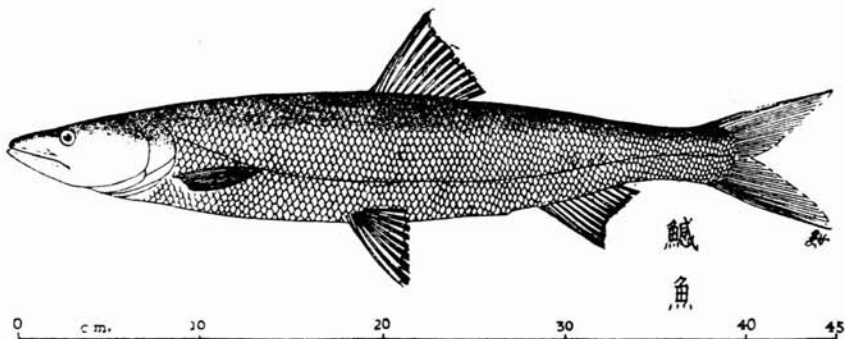
A high compressed body with rounded abdomen, flattened toward the tail. Silvery coat with yellow wash below, blackish green on dorsal and lateral surfaces; only sometimes golden. Head depressed with large eyes, mouth anterior. Lateral line almost straight with 27 to 28 scales, large round slippery scales. Up to 10 inches long. Dorsal fin long, attached opposite ventral fin, about midway, with 3 spiny and 17 or 18 soft rays. The third spine on the dorsal and anal fins is toothed. Tail is forked.

**DISTRIBUTION:**—All over China. Extensively cultivated locally.

**SEASONS:**—All the year, best in late winter and spring.

**RETAIL PRICE:**—20 cents a catty. (The live fish is about 30 cents).

**FOOD VALUES:**—41 percent edible. A fine flavoured fish but bony. Its vitamins are good.



*Elopichthys bambusa*, (Richardson)

## 6. FALSE SALMON

- 鹹 *Kan*, bold fish.  
 橫條 *Heng p'iao*, cross strip.  
 鱈魚 *Kuan yü*, batchelor fish.  
 橫專 *Heng chuan*, perverse batchelor.  
 黃專 *Huang chuan*, yellow batchelor.  
 魚虎 *Yü hu*, fish tiger.

### DESCRIPTION.

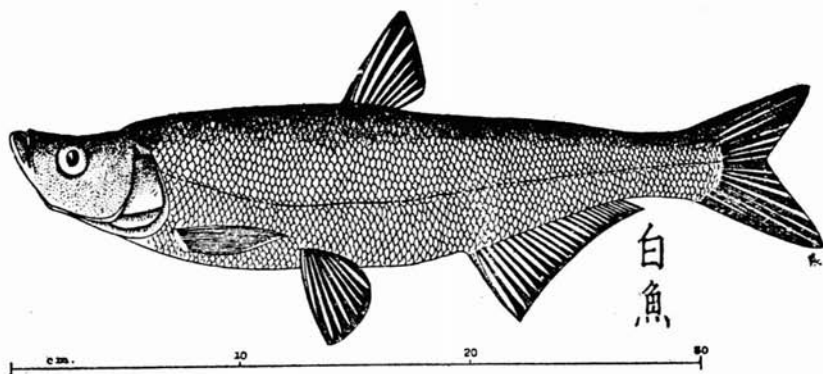
A long tubular body with a long narrow head and big mouth. Strong snout and big eyes. Covered in fine scales. Blackish back with yellow sides and a yellowish white belly. Yellow gills. 3 to 4 feet long, weighing up to 50 lbs. The dorsal fin is relatively small with one spiny and 10 soft rays placed slightly back on the body. Tail deeply cleft. A great cannibal.

DISTRIBUTION:—N. Mongolia to Canton, especially around Shanghai.

SEASONS:—Common, good in June.

RETAIL PRICE:—20 cents a catty.

FOOD VALUE:—A very good food fish.



*Culter brevicauda*, (Gunther)

## 7. CULTER

### CHINESE WHITE FISH

- 鮪魚 *Pai yü*, white fish.  
 鱗 *Ch'iao*, bridge fish.  
 白魚 *Pai yü*, white fish.  
 陽鱗 *Yang ch'iao*, lofty bridge

#### DESCRIPTION.

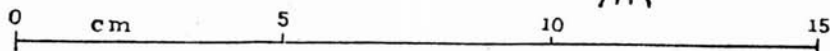
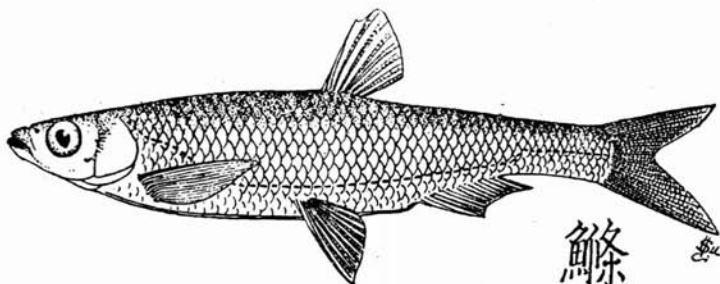
Elongated compressed silvery white body, with a pointed upturned head and big eyes. Upper profile concave, nape of neck convex. Very fine scales with black triangular spots, 63 to 67 on lateral line which is slightly decurved. Many small black spots on head and gills. Dorsal fin short, with 3 simple and 7 branched rays. Long anal fin with 3 simple and 24 to 30 branched rays. The tail is deeply forked, lower lobe longer than upper. Body length up to 8 inches, although allied species may be longer.

**DISTRIBUTION:**—Common in the waterways and lakes at the mouth of the Yangtse, Taihu, Tsinan, Soochow, Hainan, Amur.

**SEASONS:**—All the year.

**RETAIL PRICE:**—20 cents a catty.

**FOOD VALUE:**—58 percent edible. Excellent flavour but many fine bones.



*Cultricus kneri*, (Warpachowski)  
(*Hemiculter leucisculus*.)

### 8. KEELED CULTER HEMICULTER.

- 鯪魚 *T'san P'iao yü*, slender food fish.  
 鱗魚 *T'iao yü*, slender fish.  
 白鱗 *Pai P'iao*, white slender fish.

#### DESCRIPTION.

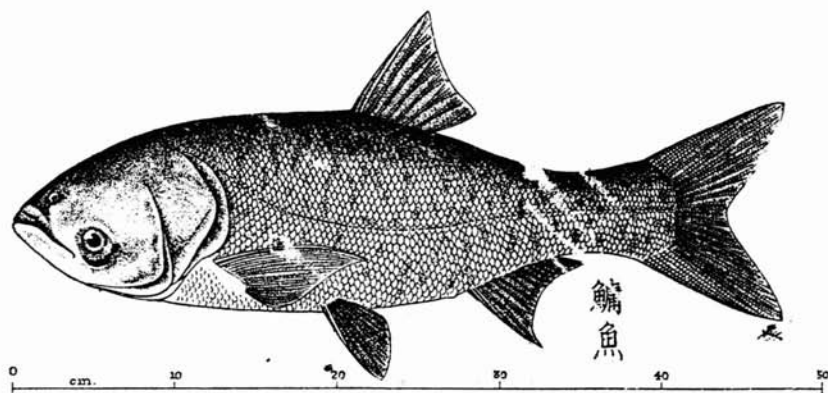
Elongated compressed body, keeled along the whole abdomen. The true hemiculter are not keeled, or only along the postventral part. Lateral line bends down under the pectoral fin and runs low along the body and rises three scales to the middle of the tail, with 48 to 58 small scales. Body silvery grey with black back. Fins similar to the culter except the anal fin which is much shorter, having 2 spiny and 11 to 13 soft rays. Tail divided with lower lobe longer than upper. Length up to 6½ inches.

DISTRIBUTION:—Ichang to the lower Yangtse, Formosa, Tungting Lake.

SEASON:—All the year. June.

RETAIL PRICE:—10 to 20 cents a catty. Small ones very cheap.

FOOD VALUE:—Many fine bones. Good flavour. The small fish are often bought to feed cats.



*Aristichthys nobilis*, (Richardson)

## 9. BIG HEAD

- 鱖 *Yung*, plebian fish.  
 黑 鱖 *Hei lien*, black silver carp.  
 花 鱖 *Hua lien*, spotted silver carp.  
 胖 頭 *P'ang t'ou*, big head.

### DESCRIPTION.

Rather high compressed body with a large broad head. Eye in lower half of head. Large oblique mouth. Small scales, 103 to 115 on lateral line. Dorsal fin small with 3 spiny and 7 soft rays. Anal fin with 2 spiny and 14 soft rays. Tail divided. Plackish back, yellowish white below. Dusky fins. Length up to 2 feet.

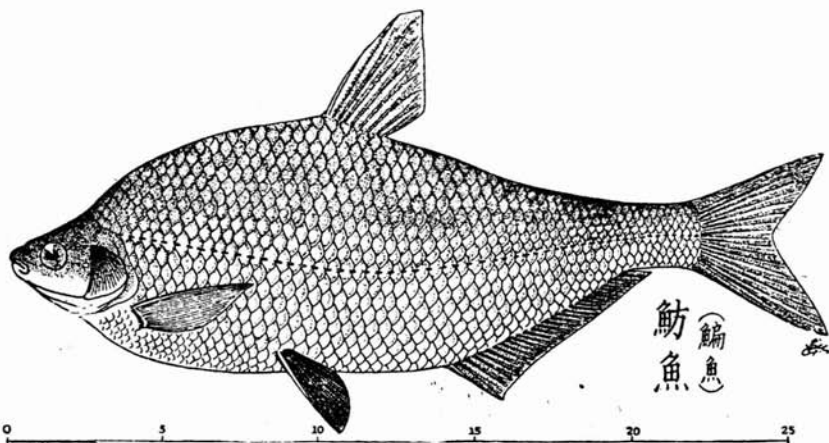
DISTRIBUTION:—Hankow to Canton. Much cultivated.

SEASONS:—Up to May

RETAIL PRICE:—30 cents a catty.

FOOD VALUE:—43 percent edible. Much esteemed as a high-class food. Mineral salts good.





*Parabramis bramula*, (C. & V.)

## 10. BREAM

- 魴 *Pien*, flat fish.  
 長春魴 *Ch'ang ch'un pien*, long spring flat fish.  
 魴 *Fang*, square fish.

### DESCRIPTION.

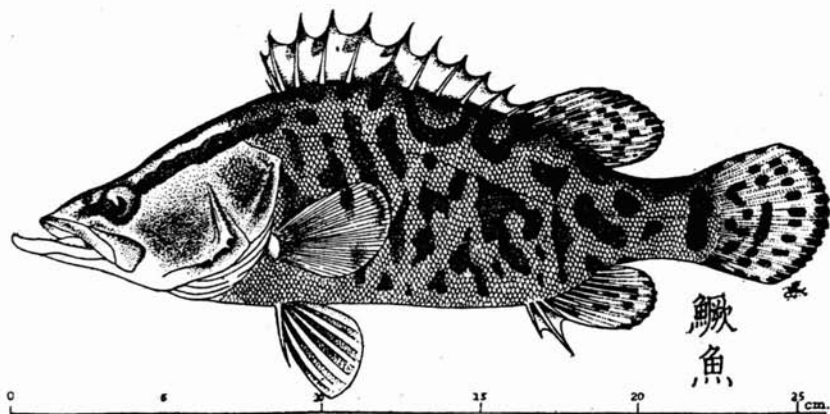
Compressed deep body with very small head. Body squarish tapering to the head and tail. Mouth small. Scales large, 52 to 59 in lateral line, 11 to 12 to dorsal fin and 7 to 8 from ventral. Dorsal fin short but with longish rays. Anal fin with 2 spiny and 27 to 28 soft rays. Light brown back and greyish white belly. Dark spots on scales. Tail divided. Much fat in the abdomen. This fish feeds on land plants. Length up to about 14 inches. There is also the FLAT BREAM with a more highly arched back.

DISTRIBUTION:—Lower Yangtse plentiful. Hopei to Hainan.

SEASONS:—Up to June.

RETAIL PRICE:—16 to 20 cents a catty.

FOOD VALUE:—A rich meaty fish of superior food value. There is much good fat. 60 percent edible.



*Siniperca chuatsi*, (Basilewsky)

## 11. MANDARIN FISH

- 鰱魚 *Kuei yü*, the stiff fish.  
 鱠魚 *Kuei yü*, salad fish.  
 桂花魚 *Kuei hua yü*, cassia flower fish.  
 爪子魚 *Chua tzu yü*, clawed fish.

### DESCRIPTION.

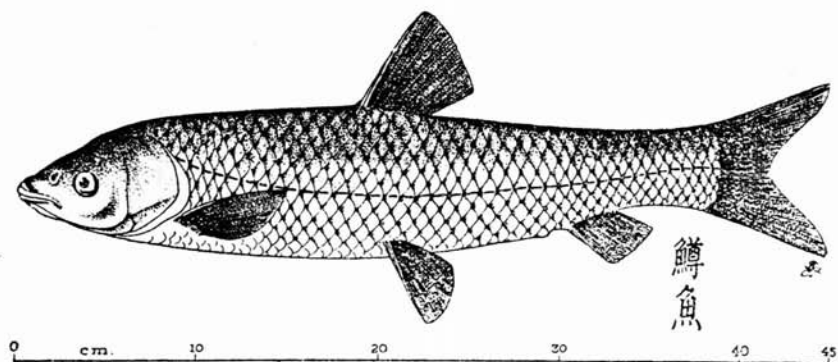
Compressed body with big head, arched back, and pointed snout. Lower jaw protruding with a big mouth. Very fine scales, 116 on lateral line. Coloured olive greyish-yellow, a dark oblique band passes from snout through the eye to the back. The sides are highly decorated with irregular brown patches. Posterior dorsal, anal, and caudal fins with large black spots. The dorsal fin is long with 12 to 13 large spines and 13 to 15 soft posterior rays. The anal fin has 3 strong spiny and 9 to 11 soft rays. Tail is round.

**DISTRIBUTION:**—From Ichang to lower Yangtse. Sungari River down to Fukien.

**SEASONS:**—Up to June.

**RETAIL PRICE:**—35 cents and more a catty. In summer very expensive.

**FOOD VALUE:**—50 percent edible. No small bones, excellent flavour. Protein and mineral salt content high.



*Squaliobarbus curriculus*, (Richardson)

## 12. BARBEL

### EASTERN BARBEL.

- 鱊 魚 *Tsun yü*, noble fish.  
 紅 眼 鱊 *Hung yen hsien*, red eyed thread.  
 燒 火 草 魚 *Shao huo p'sao yu*, lighted grass fish.  
 赤 眼 鱊 *Ch'ih yen tsun*, red eyed barbel.  
 鯪 魚 *Pi yü*, determined fish.

### DESCRIPTION.

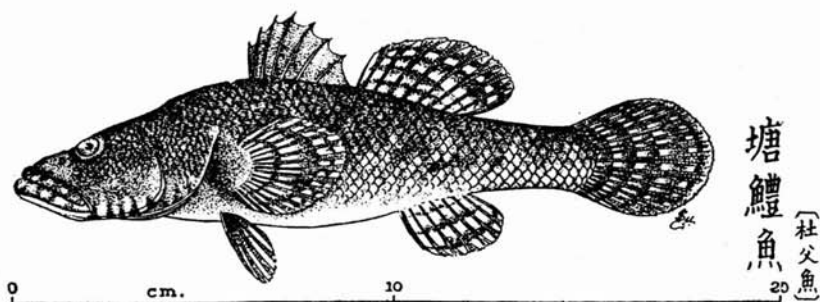
A long slender round body like the ide, silvery white in colour. The eye is red veined, placed to the front of the head. Covered with rather large black spotted scales. The dorsal fin placed centrally on the back is short with two spiny and 8 soft rays. Forked tail. Oblique mouth. Difficult to catch with a net. About 18 inches long.

**DISTRIBUTION:**—Common all over China, from Mongolia to Canton.

**SEASONS:**—Most plentiful on the market in early summer.

**RETAIL PRICE:**—90 cents a catty.

**FOOD VALUE:**—As tasty as shell-fish, similar to the carp.



*Eleotris potamophila*, (Gunther)

### 13. BULLHEAD

- 塘鱧魚 *T'ang li yü*, pond murrel.  
 黃鱧魚 *Huang yü yü*, yellowish black fish.  
 蕩魚 *T'ang yü*, vagrant fish.  
 杜父魚 *Tu fu yü*, boatman's fish.  
 蘆士魚 *Lu shih yü*, reed scholar.  
 河鱧 *Ho lu*, river bass.

#### DESCRIPTION.

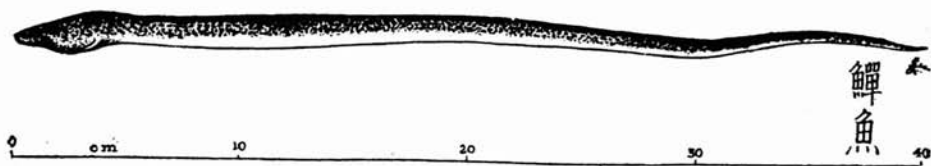
A big flat head on a stout round body which flattens towards the tail. A full round belly. Small eyes, high in the head. Mouth big and oblique with thick lips. The whole body and head covered in scales, head and back ctenoid; belly and breast have smooth round scales. Dusky brown body with black markings, tail and fins banded. Two dorsal fins; the anterior has 6 or 7 longish spines, the posterior has 9 or 10 soft rays. Pectoral fin broad and rounded, the ventral fin placed below pectoral. Tail round.

DISTRIBUTION:—Plentiful on the upper and lower Yangtse.

SEASONS:—All the year, February.

RETAIL PRICE:—7 cents each, 48 cents a catty.

FOOD VALUE:—50 percent edible. Mineral salts good.



*Fluta alba*, (Zieuw)

#### 14. FINLESS EEL

MUD EEL. YELLOW EEL.

- 鰻魚 *Shan yü*, good fish.  
 長魚 *Cb'ang yü*, long fish.  
 黃鰻 *Huang shan*, yellow eel.

#### DESCRIPTIO

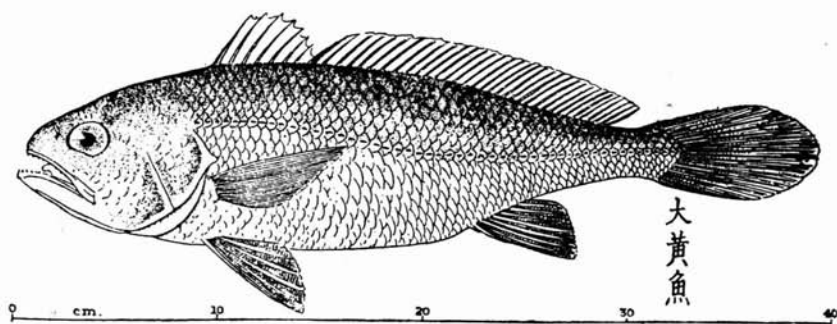
A naked elongated cylindrical body, compressed at the tail. Head swollen, bigger than the width of the body. Eyes small covered with thin skin. Two nostrils, one at the end of the snout the other just above and in front of the eyes. Well developed lips covering two rows of teeth. Without scales, but covered in mucus. A reddish brown body with a yellow belly, mottled with black spots. No pectoral or ventral fins. The dorsal and anal fins reduced to folds. Length over 2 feet.

DISTRIBUTION:—All over China. Very plentiful in the Yangtse.

SEASON:—April to August, best at the end of June.

RETAIL PRICE:—60 cents a catty.

FOOD VALUE:—Fried in oil they have an excellent flavour. There is little waste and they contain much oil rich in vitamin A.



*Pseudoscia amblyceps*, (Bleeker)

## 15. BIG YELLOW FISH

CROAKER. MAIGRE. CORVOLA.

- 黃魚 *Huang yü*, yellow fish.  
 大鮮 *Ta hsien*, big fresh fish.  
 大黃魚 *Ta huang yü*, big yellow fish.  
 石首魚 *Shih shou yü*, head stone fish.

### DESCRIPTION:

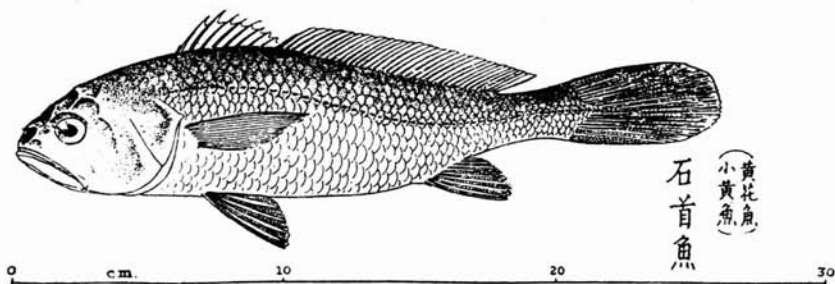
The body is three times as long as the head. The head is three and half times the length of the snout. Average length about 14 inches. Flat body covered with fine golden yellow scales. It is greyish-green along the spine and yellowish white on the belly. The dorsal fin has 9 or 10 spines and 31 to 35 soft rays. The anal and ventral fins are small. The tail is fan shaped. Meaty with a few soft bones. Extensively used to make isinglass.

**DISTRIBUTION:**—From Korea to South China, on the coast. The commonest fish on the Shanghai markets. Often dried.

**SEASONS:**—Abundant September to April. All the year.

**RETAIL PRICE:**—25 to 30 cents a catty.

**FOOD VALUE:**—45 percent edible. A good food fish, with some vitamin A and a fair content of vitamin C.



*Pseudoscia undovittata*, (J. & S.)

## 16. SMALL CROAKER

SPOTTED YELLOW FISH. SMALL MAÏGRE.

- 小黃魚 *Hsiao huang yü*, small yellow fish.  
 春魚 *Ch'un yü*, spring fish.  
 黃華魚 *Huang hua yü*, yellow sheen fish.  
 黃瓜魚 *Huang kua yü*, yellow melon fish.

### DESCRIPTION:

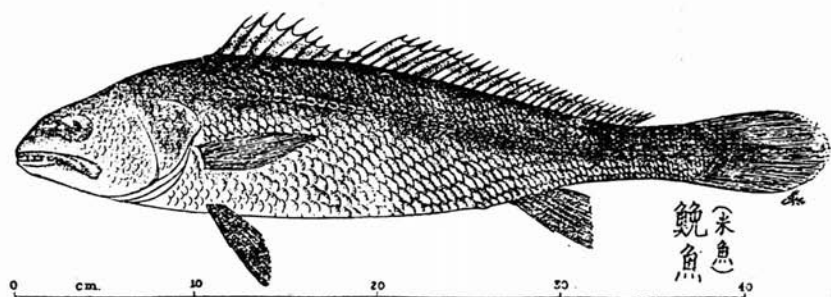
Similar to the big yellow croaker, with scales a little coarser and a more slender tail. Dark grey along the spine, light yellow on the belly. The dorsal fin has 11 spines and 36 soft rays. The anal fin is small with one spine and 7 soft rays. The pectoral fin is close to the operculum.  $\frac{1}{4}$  to 1 catty in weight. First year 5 inches long. second year  $7\frac{1}{2}$  inches, third year up to 10 inches.

DISTRIBUTION:—Common from Chihli to South Chekiang.

SEASONS:—Spring and early summer. All the year.

RETAIL PRICE:—7 cents each.

FOOD VALUE:—Similar to the big croaker. A good food fish.



*Corvina diacanthus*, (Lacépède)

## 17. SLATE-COD CROAKER

SPINY MAIGRE. NINGPO COD.

- 鮫魚 *Wan yü*, Cod-fish.  
 鱈魚 *Min yü*, lively fish.  
 米魚 *Mi yü*, rice fish.

### DESCRIPTION:

Dull grey with greenish silvery iridescence. Slate-grey fins without scales. Brownish-black parallel markings on back. Body cod-shaped with large scales. Head large, mouth terminal. Common size 12 to 15 inches, up to 4 feet. Squarish tail. 60 scales on the lateral line.

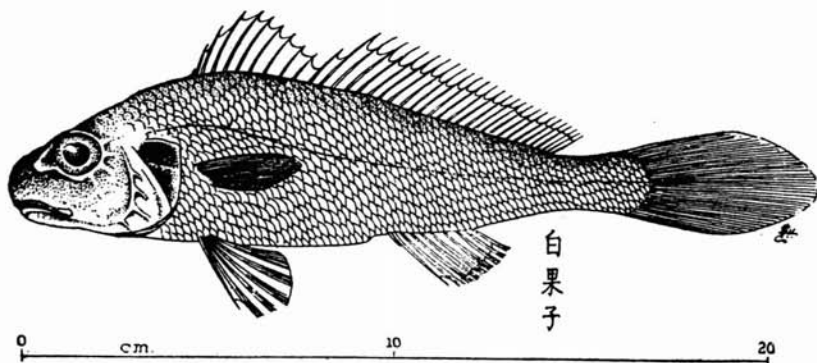
DISTRIBUTION:—Chekiang south to India and Philippines.

SEASONS:—All the year.

RETAIL PRICE:—60 cents each. 27 cents a catty.

FOOD VALUE:—66 percent edible. A good food fish with firm flesh and excellent flavour. Used a good deal in foreign food.





*Nibea sinuata*, (Cuvier)

## 18. CHINESE CROCKER

白果子 *Pai kuo tzu*, white fruit.

白姑魚 *Pai ku yü*, white nun fish.

### DESCRIPTION:

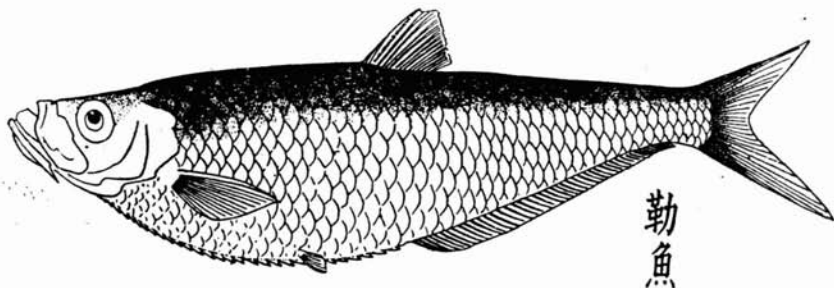
Shaped like a small croaker, with a smaller lower head. The body is fat and fleshy. The back is arched. A big black spot on the gills. The body is silvery-white and about  $10\frac{1}{2}$  inches long. There are 10 dorsal spines, the first very small. The dorsal fin has one spiny and 27 soft rays. The anal fin has 2 spines and 7 soft rays.

DISTRIBUTION:—Japan, China and India.

SEASONS:—Winter and Spring.

RETAIL PRICE:—30 cents a catty.

FOOD VALUE:—A very good food fish. About 80 percent of those marketed are lightly cured. Protein moderately good.



*Ilisha elongata*, (Bennett)

## 19. HERRING

### WHITE HERRING. LONG-FINNED HERRING

- 鱈魚 *Lei yü*, cutting fish.  
 白頁 *Pai yeh*, white guardian.  
 力魚 *Li yü*, strong fish.  
 白鱈 *Paak t'sao*, Cantonese.

#### DESCRIPTION:

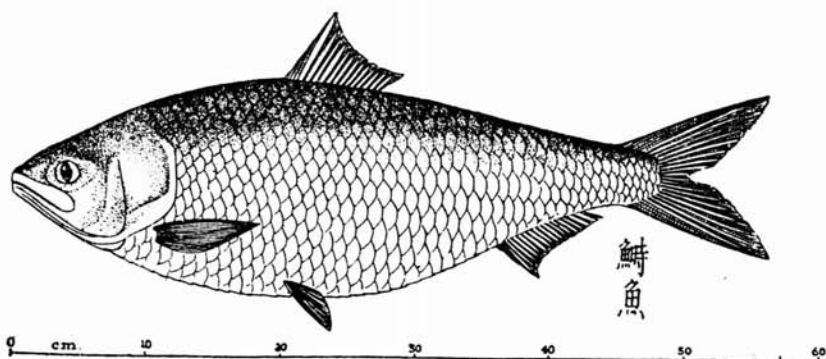
A shiny silver body with a dark back. The dorsal fin small, placed in the middle of the back. Ventral fin very minute. The anal fin is elongated with 20 to 40 sharp spines liable to cut ones hands. Body slightly compressed, upper profile straight. Head small, eyes large, lower jaw prominent directing the mouth upwards. The tail is deeply forked. Scales very large and easily rubbed off. Common size 12 to 15 inches.

**DISTRIBUTION:**—From Korea to India, very common on the China coast.

**SEASONS:**—February to June.

**RETAIL PRICE:**—30 cents each.

**FOOD VALUE:**—A very nutritious fish, slightly oily. Excellent when fresh. It is unusually rich in vitamins.



*Hilsa reevesii*, (Richardson)

## 20. REEVES' SHAD

HILSA HERRING. REEVES' HERRING. SAMLI

鱈魚 *Sibb yü*, seasonal fish.

三鯪 *San lai*, three runs.

### DESCRIPTION:

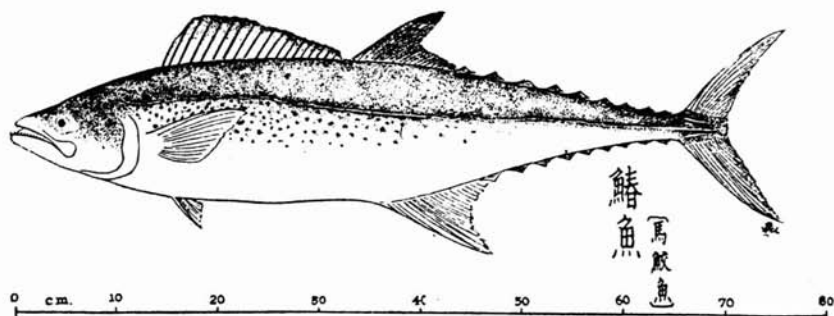
Silvery white body with an iridescent dark green back. Body deep and flat, with large round scales. Head small with small upturned mouth. The fins are yellowish, dorsal short with no spines, pectoral pointed with strong spines, ventral small, anal moderate. Swallow tailed. It has many fine bones. Common size 16 inches.

**DISTRIBUTION:**—Hainan to Korea. In Chekiang in the Chien-t'ang river up to Kin Hwa and the Fu Ch'un river. In Kiangsu in Chan Kiang. At Kiangyin. From the mouth of the Yangtse up to Hankow.

**SEASONS:**—April to June when they go up the rivers to spawn.

**RETAIL PRICES:**—1937 Average price 60 cents a pound. In March about \$1.30. After July the spent fish is tasteless and cheap.

**FOOD VALUE:**—A very oily nutritious fish of very rich taste. The steamed fish melts in the mouth. Baked with the scales on. Ginger is often added. It must be fresh. It is said to be very good steamed with bamboo sprouts, amaranth or celery.



*Scomberomorus sinensis*, (Lacépède)

## 21. CHINESE MACKEREL

### CHINESE SPOTTED MACKEREL

鯖	<i>Ch'un</i> , spring fish.
青 鯨	<i>Ch'ing chiao</i> , green shark.
馬鯨魚	<i>Ma chiao yü</i> , horse shark fish.
牛皮鯨	<i>Niu p'i chiao</i> , cowhide shark.

#### DESCRIPTION:

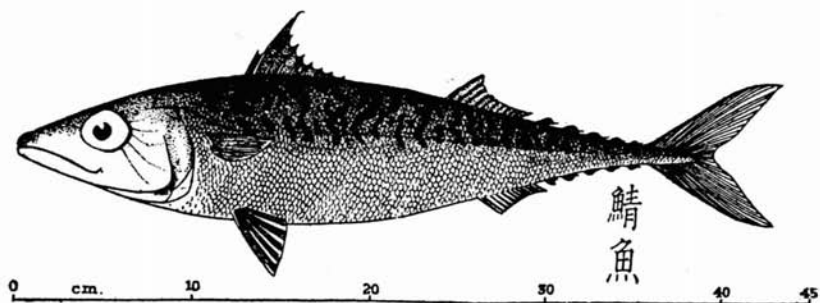
Characterised by 9 pairs of small finlets behind the dorsal and anal fins. Numerous dusky spots along and above median line. A rather slender but fleshy body dark bluish-green above and whitish below, 2 to 3 feet long. Large mouth with numerous flat sharp triangular teeth. Dorsal fin divided with 19 soft anterior rays, and 15 soft posterior rays. Swallow tailed. It spawns in the shallow water about May and June.

**DISTRIBUTION:**—Seas of China and Japan. From Chapoo and Chefoo.

**SEASONS:**—April to August.

**RETAIL PRICE:**—35 cents a catty.

**FOOD VALUE:**—A coarse but good fish. 74 percent edible, high values for protein, fat and mineral salts. It should be baked or fried. Often salted in strips.



*Scomberomorus niphonius*, C. & V.

## 22. MACKEREL

### SPOTTED MACKEREL

- 鯖 *Cb'ing*, mackerel.  
 青花 *Cb'ing hua*, green spotted.  
 花青 *Hua cb'ing*, spotted green.

#### DESCRIPTION:

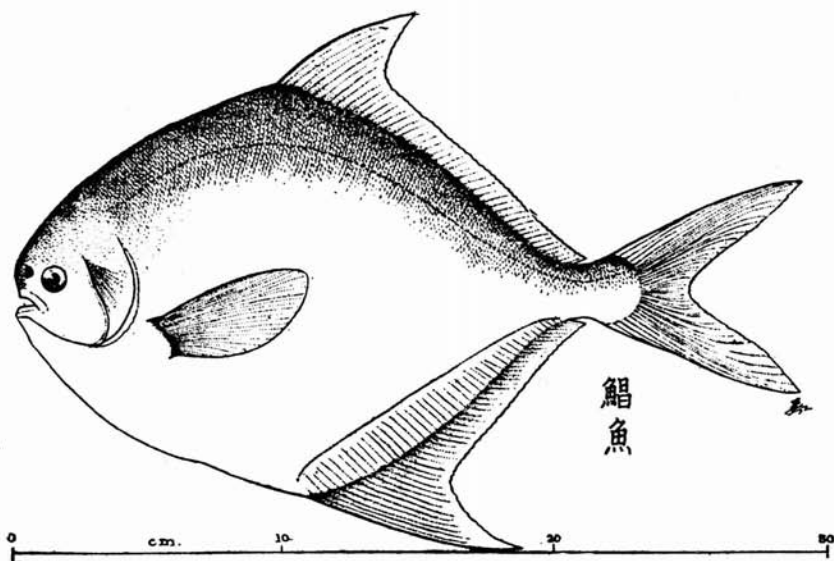
A somewhat slender body yellowish-white, silvery below and green on the back, with over 30 dusky green wavy stripes above the lateral line. Covered in fine scales. The tail is finely divided. The dorsal fin has two parts, a high anterior section of 9 spines and posteriorly 9 soft rays. The anal fin has 13 soft rays. There are 5 pairs of finlets, anal and dorsal running to the tail.

DISTRIBUTION:—North China down to Ningpo.

SEASONS:—A deep sea fish, which in May loses the fatty film over the eye and seeks the surface. It is caught at night attracted by fishermen's lanterns. It enters the shallows to spawn in the summer and is not seen after the autumn.

RETAIL PRICE:—1937 average price 32 cents a pound.

FOOD VALUE:—An oily nutritious fish. Coarse but good. Superior to the Chinese mackerel but low in lime. Protein moderately good. 64 percent edible.



*Stromateoides argenteus*, (Euphrasen)

### 23. POMFRET

#### SILVERY POMFRET. WHITE BUTTER-FISH

- 鰩 *Ch'ang*, pomfret.  
 車片 *Ch'e p'ien*, cart slices.  
 白鰩 *Pai ch'ang*, white pomfret.  
 烏輪 *Wu lun*, black wheels.

#### DESCRIPTION:

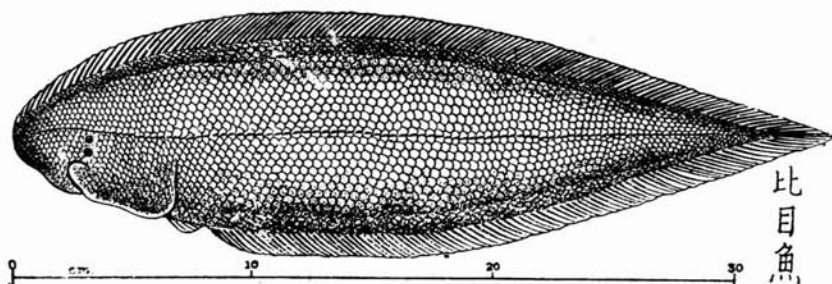
A squarish angular fish with a short head and flat deep body with arched back. A silvery white colour with dusky spine and pectoral fins. Covered with minute dusky scales. About 8 inches long, up to 20 inches. Long dorsal fin with 46 soft rays, the anal fin placed opposite on the belly has 45 soft rays.

DISTRIBUTION:—Shanghai, Hongkong, Amoy, Port Arthur.

SEASONS:—All the year, abundant in June and July.

RETAIL PRICE:—17 to 20 cents a catty. In November about 43 cents.

FOOD VALUE:—Excellent. A fleshy fish with soft tasty meat. Its protein is fairly good, the fat and mineral salts are very good. Steam, boil, bake or fry.



*Areliscus Abbreviatus*, (Gray)  
(*Cynoglossus abbreviatus*)

## 24. SOLE

### TONGUE SOLE

- 鞋底魚 *Hsieh ti yü*, shoe sole fish.  
 箸塌魚 *Jó 'a yü*, shoal of bamboo leaves.  
 比目魚 *Pi mu yü*, paired fish.  
 鱈 *Tieh*, leaf fish; refers to flat fish, particularly flounders.  
 禿魚 *T'u yü*, hairless fish.  
 牛舌魚 *Niu she yü*, cow tongue fish.

### DESCRIPTION:

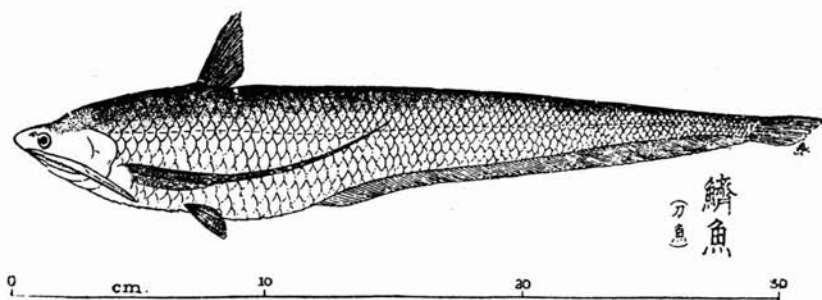
A flat tongue-shaped fish, rounded at snout and tapering at the tail. Both eyes on left side of body close together near central line. Mouth on ventral side, hooked, ending below eyes. The upper side is brown with small black spots and rough scales, the under side is white with smooth scales. There are three lateral lines, which distinguishes it from the Macao sole that has only 2 lines. Dorsal fin has 111 soft rays, the anal fin has 85 to 88 soft rays. Common size 8 inches, up to 14 or more. There is a very large flat-fish 24 to 28 inches long called 圓頭 *Yuan T'ou*.

DISTRIBUTION:—Nanking to Hongkong.

SEASONS:—All the year, best in April.

RETAIL PRICE:—1937 average price 30 cents a pound; November about 25 cents.

FOOD VALUE:—A good food fish, fried. The liver oil of flat fishes is usually superior to the cod in vitamins. The protein is not of a high value.



*Coilia nasus*, (Gunther)

## 25. ANCHOVY

### LONG-TAILED ANCHOVY

- 鱈 *Cb'i*, thin fish.  
 烤子魚 *K'ao tzu yü*, grill fish.  
 (鰲) 鳳尾魚 *Feng wei yü*, phoenix tail.  
 刀魚 *Tao yü*, knife fish.  
*Tao yü* is also applied to the Long-rayed anchovy,  
*C. ectenes*, (J. & S.)

#### DESCRIPTION:

A long thin flat fish like a knife. Dorsal fin high with one spine and 11 soft rays, anal fin long with 86 soft rays extending to the tail, pectoral fin with six long rays extending one third the length of the body. The scales are very fine, under the belly is a line of 42 to 47 toothed scales. The flesh is full of fine hairy-soft bones. The body is greenish above and silvery white along the belly. It is usually not over 6 inches long. The long-rayed species is over 8 inches.

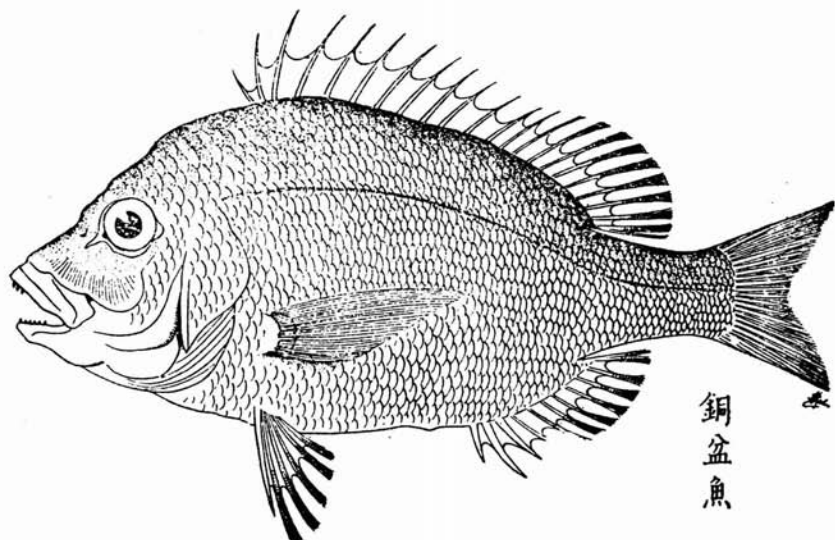
DISTRIBUTION:—Port Arthur to Amoy. Woosung plentiful.

SEASONS:—April to July.

RETAIL PRICES:—20 cents a catty.

FOOD VALUE:—Very good food value, but the hairy bones make it troublesome to eat. Fried or boiled.





*Pagrosomus major*, (Schlegel)

## 26. SEA BREAM

### GREAT PORGY. RED PARGO

鯛	<i>T'iao</i> , the universal fish.
嘉鱖魚	<i>Chia chi yü</i> , excellent golden carp.
銅盆魚	<i>T'ung p'en yü</i> , copper basin fish.

#### DESCRIPTION:

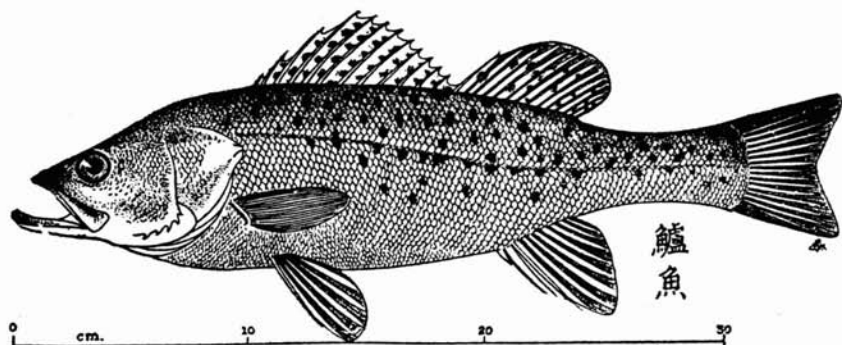
Deep compressed head and body, descending snout with small mouth. Two rows of rounded molar teeth, upper and lower front teeth conical. Body silvery-red, with pale blue iridescent spots on upper half. The eyes have a golden red lustre. Lateral line with 56 to 63 scales. Dorsal fin with 12 spines and 10 soft rays. Anal fin with 3 spines and 8 soft rays. Scales on operculum and head. Size 12 to 18 inches.

DISTRIBUTION:—Port Arthur to Hongkong.

SEASONS:—All the year.

RETAIL PRICE:—30 cents a catty (March)

FOOD VALUE:—50 percent edible. Very nutritious



*Lateolabrax japonicus*, (C. & V.)

## 27. SEA-BASS

JAPANESE SEA-PERCH. SPOTTED WRASSE.  
SHANGHAI COD

- 鱸 *Lu*, black spotted fish.  
 玉花鱸 *Yu hua lu*, jade spotted perch.  
 銀鱸 *Yin lu*, silver sea-bass.

### DESCRIPTION:

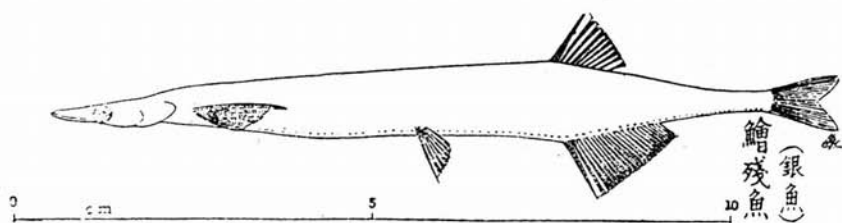
Long-bodied silvery-white fish, greenish grey above with irregular black spots on upper half including the fin. Head pointed like a perch. Mouth moderately large, lower jaw projecting slightly. Dorsal fin in two parts, anterior with 12 strong spines, posterior with 2 spines and 15 soft rays. Anal fin with 3 strong spines and 8 soft rays. Very fine scales, 105 on lateral line. Size 8 to 30 inches.

DISTRIBUTION.—Common all down the coast of China.

SEASONS.—All the year.

RETAIL PRICE.—20 cents a catty.

FOOD VALUE.—70 percent edible. A good flavoured food fish.



*Salanx chinensis*, (Osbeck.)

## 28. ICE-FISH

WHITE BAIT.

SILVER-FISH.

銀魚 *Yin yü*, silver fish.

麵長魚 *Mien ch'ang yü*, flour long fish.

鱠殘魚 *K'uei t'san yü*, hash leavings fish.

### DESCRIPTION:

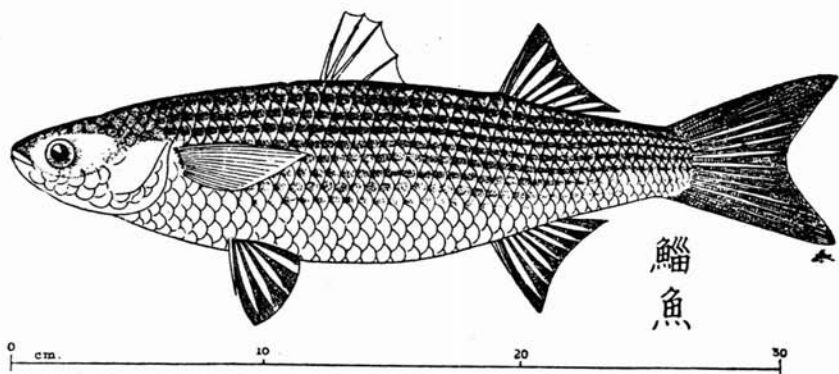
Translucent slender elongated scaleless fish. Flattened head with big mouth and short snout. Average length 4 inches. The dorsal fin in posterior position with 13 soft rays. The anal fin has 24 to 26 soft rays. The tail is divided. It dies as soon as it leaves the water. No hard bones.

DISTRIBUTION.—The Yangtse up to Kiukiang. South coast to Canton. Woosung fishing good.

SEASONS.—From March to June very plentiful.

RETAIL PRICE.— $\frac{1}{2}$  cent each. 1938 average price 30 cents a pound.

FOOD VALUE.—It is of unusual value for its high content of lime, though the protein is only moderately good. Eaten whole, fried.



*Mugil oeur*, Forskal

## 29. MULLET

### GREY MULLET

鰱子 *Tzu yü*, waste fish.

肉棍子 *Jou kun tzu*, meat stick.

#### DESCRIPTION.

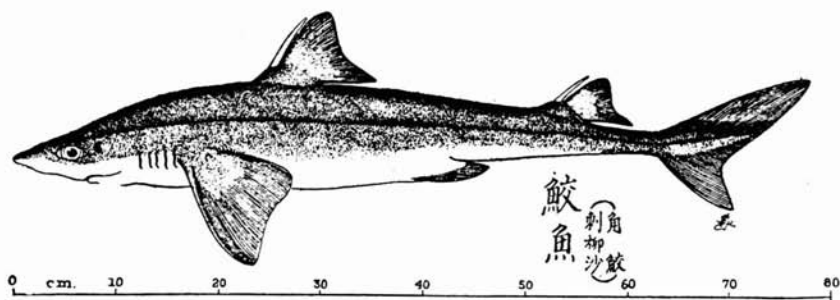
A silvery white body, bluish-grey above tinged with yellow, and longitudinal dark bands on the back and sides. A long round body with a flat head and tail. Scales rather large. The dorsal fin in two parts, anterior section above the ventral fin with 4 spines, the posterior section opposite the anal fin with one spine and 7 soft rays. The anal fin has three spiny and 8 soft rays. Size 18 to 24 inches.

DISTRIBUTION.—India, China and Japan.

SEASONS.—January to end of March.

RETAIL PRICE.—32 cents a catty.

FOOD VALUE.—Rich in fat and fairly good protein and some vitamin B. Excellent baked or fried.



*Squalus mitsukurii*, (J. & S.)

### 30. DOGFISH

#### JAPANESE PIKED DOGFISH.

角 鮫 *Chiao chiao*, angular shark.

刺柳鯊 *T'zu liu sha*, spiny willow shark.

#### DESCRIPTION.

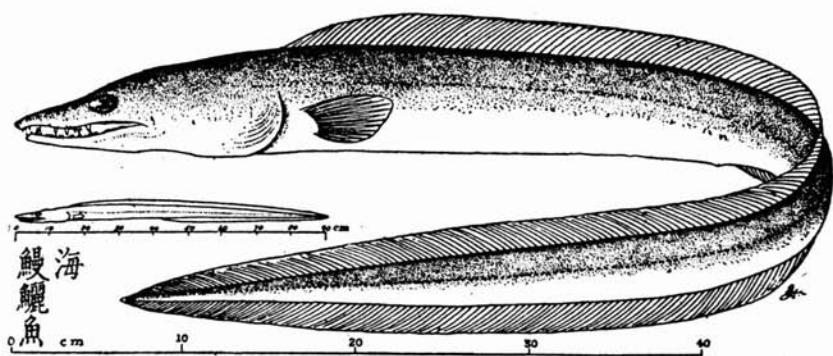
A long slender body with a flat head. Snout short and round. Eyes large. Like all the shark family the mouth is placed low down on the neck. It has 5 pairs of gill slits above the line of the pectoral fin. The back is greenish grey, and the belly is light in colour. The dogfishes are characterised by the presence of a strong spine in front of each dorsal fin, small teeth and upturned caudal fin. The tail is divided with a much larger upper segment. Allied species are the tiger shark, and the hammer-head. The fins of the latter are the greatly prized shark's fins of Chinese feasts.

DISTRIBUTION.—China, Japan, Korea, Hawaii.

SEASONS.—Best in mid-summer.

RETAIL PRICE.—17 cents a catty.

FOOD VALUE.—It has a large content of protein of moderate nutritional value. The fins contain 43.5 percent of protein, the edible portion used is practically pure protein.



*Muraenesox cinereus*, (Forsk.)

### 31. MARINE EEL

海鰻魚 *Hai man li*, sea eel.  
毛魚 *Mao yü*, hair fish.

#### DESCRIPTION:

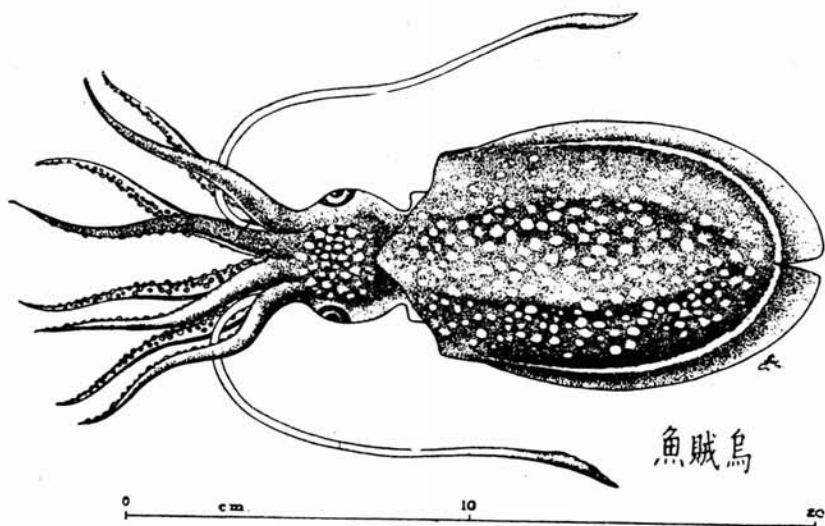
A long round-bodied fish over 3 feet long flattened at the tail. Brownish grey in colour with dirty white belly tinged with green. Skin without scales but covered in mucus. There is no ventral fin. The dorsal fin extends from the operculum to the end of the tail, the anal fin starting in the middle of the body also extends the length of the tail. They are greenish black in colour. The pectoral fin, a dusky white colour, is small. The mouth is large, with strong pointed teeth, a notch on the upper jaw receives the tip and teeth of the lower jaw. It lives in the deep muddy bottoms, and is caught at night when it comes out for food.

DISTRIBUTION. -- South China coast, Chefoo and Fusan.  
Plentiful at Ningpo.

SEASONS.—All the year, best between November and June.

RETAIL PRICE.—25 to 30 cents a catty.

FOOD VALUE.—Mineral salts good. Nutritious but not as good as the large freshwater eels. The protein is inferior. It is bony.



*Sepiella japonica*, Sasaki.

### 32. CUTTLE FISH

- 墨魚 *Mo yü*, ink fish.  
 纜魚 *Lan yü*, drag-rope fish.  
 烏賊 *Wu tsei*, black pirate.  
 烏鯛 *Wu tse*, standard black ink.

#### DESCRIPTION:

This well-known decapod has a bag-like body with a bony back about half an inch thick, shaped like a boat. The eyes are large placed on the sides of the wide head. There are 4 pairs of short frontal appendages with two long barbels. Either side of the cover are fleshy fins. The ink-sac<sup>1</sup> is near the anus. It has numerous pigment cells, red, yellow and orange with which it can adapt itself to its environment. The back is greyish brown with numerous iridescent white spots. The sexes are well differentiated in colour and form.

DISTRIBUTION.—Very abundant off Kiangsu and Chekiang.

SEASONS.—In June from Chih Hsia, August from Chu Shu.

RETAIL PRICE.—1937 average price 16 cents a pound.

FOOD VALUE.—A good food with moderately good protein.

Fried and eaten with ginger and vinegar. 59 percent edible.

## ANALYSES OF SHANGHAI FOOD FISHES

No.	Fish	Percentages				Milligrams percent		
		Edible	Protein	Fat	Ash	Lime	Phosph.	Iron
1	Common Carp	50	23.9	10.4	1.50	60	330	3
2	Black carp	64	16.8	2.1	1.25	29	266	1
3	Grass carp	52	14.9	0.8	0.97	33	116	2
4	Silver carp	60	17.3	1.7	1.18	51	218	1
5	Golden carp	41	15.6	0.7	0.96	54	203	3
6	False salmon	61	14.3	1.5	1.10	70	152	2
7	Culter	50	27.0	1.9	1.06	40	238	3
8	Hemiculter	48	16.8	1.8	0.85	89	144	2
9	Big head	43	14.5	0.6	1.21	40	201	2
10	Bream	66	18.5	6.6	1.00	76	211	2
11	Mandarin	50	19.3	0.8	1.15	45	226	2
12	Barbel	—	—	—	—	—	—	—
13	Bullhead	50	15.9	0.5	1.18	109	232	2
14	Finless Eel	70	17.2	2.8	1.72	11	235	1
15	Big croaker	45	15.7	0.6	1.03	43	131	4
16	Small croaker	47	18.8	0.8	1.04	31	152	2
17	Slate-cod croaker	66	17.0	1.7	1.34	60	122	1
18	Chinese croaker (salted)	40	25.0	1.8	1.13	69	171	3
19	Herring	52	11.9	3.0	1.54	60	169	1
20	Shad	70	14.4	11.1	1.77	53	265	2
21	Chinese mackerel	74	20.0	4.3	1.40	51	226	1
22	Mackerel	64	17.9	3.8	1.18	7	215	3
23	Pomfret	64	18.2	5.5	1.98	86	323	3
24	Sole	64	17.4	1.5	1.22	36	171	1
25	Anchovy	60	19.0	3.4	1.15	37	205	1
26	Sea-bream	50	19.2	6.4	2.08	58	260	13
27	Sea-bass	70	17.8	1.6	1.03	42	216	1
28	Ice-fish	72	6.3	0.2	0.75	258	102	1
29	Mullet	63	20.0	7.8	1.06	43	191	4
30	Dog-fish	54	21.3	0.7	0.96	37	151	2
31	Marine eel	70	17.2	2.8	1.72	110	235	1
32	Cuttle-fish	63	18.0	1.8	1.16	48	198	1



## SUPPLEMENTARY ANALYSES OF

No.	English name	Latin	Chinese name
33	Angler	<i>Lophiomus setigerus</i> , Vahl.	鮫 鱈 An k'ang
34	Barracuda	<i>Sphyræna pinguis</i> (Gunther)	魷 Yü
35	Bonito	<i>Euthynnus pelamis</i> , L.	鯷 Chien
36	Calamary (dried)	<i>Ommastrephus pacificus</i> , app.	柔 魚 Jou yü
37	Catfish	<i>Leiocassis dumerili</i> (Bleeker)	鮓 魚 Wei yü
38	Eel, true	<i>Anguilla japonica</i> , T. & S.	河 鱈 Ho man
39	Flat-head	<i>Platycephalus indicus</i> , L.	牛尾魚 Niu wei yü
40	Flying fish	<i>Cypsilurus agoo</i> , Schleg.	飛 魚 Fei yü
41	Goby	<i>Acanthogobius flavimanus</i> , T. & S.	竹 魚 Chu yü
42	Golden thread	<i>Euthyopteroma virgatum</i> , Hout	金縷魚 Chin hsien yü
43	Gurnard	<i>Chelidonichthys kumu</i> , (L. & G.)	魴 鱈 Fang fo
44	Gurnard, winged	<i>Lepidotrigla alata</i> (Houttuyn)	棘頭鱈 Chi E ch'iu
45	Hair-tail	<i>Trichurus japonica</i> (Schlegel)	帶 魚 Tai yü
46	Half-beak	<i>Hemiramphus sajori</i> , T. & S.	針 魚 Chen yü
47	Jelly-fish	<i>Rhopilema esculanta</i> , Kish	水 母 Shui mu
48	Lizard-fish	<i>Saurida argyrophanes</i> , (Richardson)	蛇子魚 She tzu yü
49	Loach	<i>Misgurnus anguillicaudatus</i> , Cantor	泥 鰍 Ni ch'iu
50	Mackerel, (salted)	<i>Scomber japonica</i> , Houttuyn	油筒魚 Yu t'ung yü
51	Maigre, light	<i>Collichthys lucida</i> , Richardson	梅童魚 Mei t'ung yü
52	Octopus	<i>Octopus octopodia</i> , L.	章 魚 Chang yü
53	Pomfret, small	<i>Psenopsis anomala</i> , T. & S.	疣 鯛 Yu t'iao
54	Porgy, black (Sea-bream)	<i>Sparus longispinis</i> , T. & S.	黑 鯛 Hei t'iao
55	Prawn	<i>Panaeus carinatus</i> , Dana	明 蝦 Ming hsia
56	Puffer (Globe Fish)	<i>Spheroides porphyreus</i> , T. & S.	河豚魚 Ho t'un yü
57	Sardine, spotted (Hickory-shad)	<i>Konosirus punctatus</i> (T. & S.)	鱈 魚 Chi yü
58	Scorpion-fish (Rock-fish)	<i>Sebastes marmoratus</i> (C. & V.)	笠子魚 Li tzu yü
59	Sheatfish	<i>Parasilurus asotus</i> , L.	鮎 魚 Nien yü
60	Shrimp	<i>Macrobrachium nipponensis</i> , Haan	青 蝦 Ch'ing hsia
61	Snakehead	<i>Ophiocephalus argus</i> , Cantor	黑 體 Hei li
62	Sting-ray	<i>Dasyatis akejei</i> , M. & H.	黃鰐魚 Huang tiao yü
63	Sturgeon	<i>Acipenser sinensis</i> (Gray)	鱧 Chan
64	Tile-fish	<i>Branchiostegus japonicus</i> (Houttuyn)	甘 鯛 Kan t'iao
65	Yellow-tail	<i>Seriola quinqueradiata</i> , Rich	魚 師 Yü shih

# FISH ON THE SHANGHAI MARKETS

Protein	Fat	Ash	Ca	P	Fe	Other names	No.
Percent			Milligrams percent				
12.8	0.57	0.94	23	139	14	華濟魚。鱈魚。	33
21.9	5.00	4.88	386	438	2	梭子。鯧。鮫。鮓。	34
25.9	11.03	1.59	166	390	4	菱子魚。	35
61.3	3.22	6.92	42	682	5	花鱈。魷魚。	36
13.7	4.70	0.95	39	143	1	鮑。白吉。	37
14.5	7.98	1.41	166	211	2	鱧。蛇魚。	38
20.2	0.69	1.72	199	333	4	鱈。三背。劍頭魚。	39
20.3	0.33	1.27	71	302	7	文鮮魚。	40
18.7	1.11	1.65	181	364	3	蝦尾魚。虎魚。	41
18.8	1.48	0.94	46	187	1	紅衫。	42
18.1	2.32	1.23	73	207	1	紅鱔。綠姑子。	43
19.7	2.88	2.14	435	347	3	八角魚。方頭魚。金頭。	44
16.3	3.51	1.10	48	204	2	大刀魚。	45
18.6	2.10	1.85	123	260	7	細魚。鹹口魚。	46
5.0	0.05	5.51	19	13	9	水月。海舌。	47
16.7	1.30	1.18	11	266	3	蛇鱈。惠骨。	48
9.6	3.68	1.16	28	72	1	鱈。	49
32.4	3.19	16.72	134	169	2	青花魚。	50
5.1	3.89	0.90	107	167	3	梅魚。	51
17.7	0.97	1.58	38	220	3	飯鯧。石拒。	52
15.1	6.92	1.57	181	297	4	小鱈。東鱈	53
20.6	5.18	1.60	71	161	4	嘉魚	54
13.4	1.56	1.00	77	181	3	大蝦。對蝦	55
17.3	0.26	1.19	86	210	5	鮑。西施乳	56
15.9	0.89	1.54	123	288	4	鮫。鱈	57
16.9	1.40	1.43	71	221	1	鮑。紅魚	58
18.3	2.25	1.35	59	298	5	鮑。鮫	59
15.0	1.15	1.10	99	205	1	清水蝦	60
17.9	5.58	1.29	94	228	1	黑魚。烏魚	61
20.5	0.56	1.26	33	166	2	赤鱔。黃虎	62
18.0	1.90	1.03	—	—	—	甲魚。鱉魚。鱉魚	63
17.8	2.44	2.18	422	238	4	方頭魚。馬頭魚	64
22.2	2.16	1.45	53	284	3	鮑。海鱈	65

# OTHER COMMON FISH ON THE SHANGHAI MARKET

No.	English name	Latin name	Chinese name
66	Bream, flat	<i>Parabramis terminalis</i> (Rich.)	平胸鱖魚 p'ing hsiung pien yü
67	Catfish, yellow headed	<i>Pseudobagrus fulvidraco</i> (Rich.)	黃額魚 huang sang yü
68	Cornet-fish	<i>Fistularia petimba</i> , Lacepede	赤箭柄魚 ch'ih chien ping yü
69	Crab, fresh water	<i>Eriocheir chinensis</i> , M-E	螃 蟹 p'ang hsieh
70	Crab, marine	<i>Neptunus pelagicus</i> , Miers	梭 子 蟹 so tzu hsieh
71	Dog-shark	<i>Galeorhinus manazo</i> , Bleeker	白 鯨 pai chiao 白鯨
72	Goby, Chinese	<i>Boleophthalmus chinensis</i> (Osbeck)	彈 塗 tan t'u 闊胡
73	Grunt	<i>Haplogenyx mucronatus</i> (E. & S.)	髭 鯛 tzu t'iao 石馬飛
74	Gudgeon, Common	<i>Pseudogobio rivularis</i> (Basil.)	鎌 柄 魚 lien ping yü
75	Gudgeon, spotted	<i>Hemibarbus maculatus</i> , Bleeker	似 鯉 shih li
76	Guitar-fish	<i>Rhinobatis schlegeli</i> , M. & H.	犁 頭 鯊 li t'ou sha 魷
77	Harpodon	<i>Harpodon nchereus</i> (H-B)	蝦 潺 hsia ch'uan 水潺
78	Horse-mackerel	<i>Decaptricus muroadsi</i> (T. & S.)	蝦 鱸 shieh sao 青專
79	Maigre, spotted	<i>Nibea albiflora</i> , Richardson	黃 婆 鰻 huang p'o chi
80	Porbeagle	<i>Isuropsis glauca</i> (M. & H.)	青 鰻 ch'ing chiao 鰻鯊
81	Porgy, little	<i>Tauius tumifrons</i> , T. & S.	黃 鰻 huang t'iao
82	Porgy, red	<i>Eynnys cardinalis</i> (Lacepede)	赤 鰻 ch'ih tsung 黑皮
83	Puffer, red finned	<i>Spheroides rubripes</i> (T. & S.)	虎 河 豚 hu h'o t'un
84	Puffer, (tetraodon)	<i>Spheroides ocellatus</i> (T. & S.)	河 豚 ho t'un 西施乳
85	Puffer, yellow finned	<i>Spheroides xanthopterus</i> (T. & S.)	花 河 豚 hua h'o t'un
86	Ray, Chinese	<i>Platyrhina sinensis</i> , M. & H.	團 扇 鰻 t'uan shan chiao 琵琶鯊
87	Ray, devil	<i>Mobula japonica</i> , M. & H.	線 板 魷 hsien pan kang
88	Ray, eagle	<i>Myllobatus tobijeii</i> , Bleeker	鷹 魷 yuan kang 牛頭虎
89	Ray, sting	<i>Dasyatis zugei</i> , M. & H.	鐵 魷 t'ieh kang 尖嘴虎
90	Ray, swallow	<i>Pteroplatea japonica</i> , T. & S.	燕 魷 yen kang 橫闊
91	Rock-bream, banded	<i>Plectrohynchus cinctum</i> (T. & S.)	胡 椒 鯛 hu chiao t'iao 青耶
92	Sculpin, prickly	<i>Trachidermis fasciatus</i> (Heckel)	松 江 鱸 sung Chiang lu
93	Shark, angel	<i>Squatina japonica</i> , Bleeker	扁 魷 pien chiao 黃鯊
94	Shark, hammerheaded	<i>Sphyrna zygaena</i> , Linnaeus	了 髻 鯊 ya chi sha 撞木鯊
95	Shark, tiger	<i>Heterodontus zebra</i> (Gray)	花 貓 鯊 hua miao chiao 老虎鯊
96	Shrimp, river	<i>Leander annandalei</i> , Remp.	白 米 蝦 pai mi hsia
97	Skate	<i>Raja knojiei</i> , M. & H.	雁 木 鱈 yen mu hsun 油虎
98	Sole, banded	<i>Zebries zebrianus</i> (T. & S.)	花 筍 鰈 hua ju t'a 犄牛舌
99	Sturgeon, beaked	<i>Psephurus gladius</i> (Martens)	鱈 魚 hsun yü 魚
100	Trumpet-fish	<i>Anlichthys chinensis</i> , Lacepede	箭 柄 魚 chien ping yü

# SHANGHAI FISH MARKET RETURNS 1934. (Hsu)

## Wholesale Prices per picul (100 catties)

Fish	Piculs	Price \$		Fish	Piculs	Price \$	
		High	Low			High	Low
Big croaker	246,420	40.00	8.18	Sea-bream	1,089	70.00	15.00
Small croaker	219,141	50.00	1.76	Hemiculter	882	8.00	3.00
Cuttlefish	70,247	25.00	4.00	Light maigre	753	6.00	0.75
Hairtail	51,610	20.00	3.20	Spotted mackerel	750	16.00	4.00
Silver carp	33,421	32.00	6.00	Chinese croaker	568	14.00	1.00
Herring	22,666	30.00	4.00	Puffer	387	8.00	1.00
Skate	19,441	10.00	0.50	Rock-fish (1933)	264	18.00	4.00
Golden carp	17,536	100.00	5.00	Golden-thread	225	25.00	10.00
Slate-cod croaker	17,264	40.00	4.00	Lizard-fish	217	18.00	3.00
Marine eel	15,567	21.00	2.00	Culter (1933)	210	30.00	12.00
Sole	15,464	22.00	2.34	Gurnard	206	16.00	2.00
Pomfret	14,746	55.00	4.00	Tile-fish (1933)	126	24.00	14.00
Grass carp	14,409	40.00	14.00	Flat-head	100	16.00	2.00
Sharks	12,694	25.00	3.00	False-salmon	61	11.00	4.00
Black carp	12,520	40.00	19.00	Rock-bream	44	24.00	8.00
Carp	8,520	20.00	9.00	Spotted croaker	21	20.00	6.00
Mendarin fish	5,695	100.00	16.00	Grunt	13	14.00	10.00
Mackerel	5,239	35.00	3.00	Black porgy	9	40.00	35.00
Bream	4,740	35.00	12.00	Angler (1933)	6	2.00	2.00
Shad	4,134	140.00	20.00	Sea-bass (1933)	5	20.00	18.00
Eels	3,080	18.00	7.00	Winged gurnard			
Anchovy	2,875	28.00	8.00	(1933)	5	6.00	4.00
				Calamary	4	32.00	25.00

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