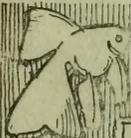


SF  
456  
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FISH

# THE AQUARIUM

ISSUED IN THE INTERESTS  
OF THE STUDY, CARE AND  
BREEDING OF AQUATIC LIFE



*Danio Rerio* (Ham. Buch.)

"It is a wonderful sight to see thirty or forty, playful as puppies, in an aquarium given to them alone."

Drawing from life by E. S. Young.

JANUARY 1913

~~590.973~~  
*Fishes*

VOL. I

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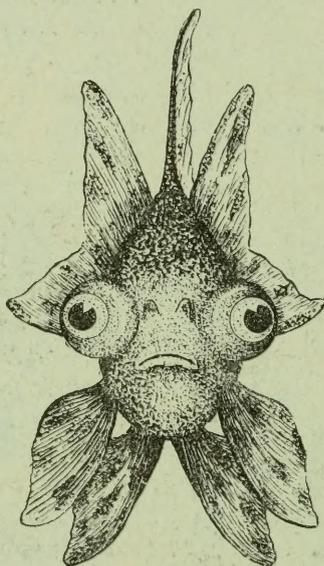
WHOLESALE AND RETAIL

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COMET  
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FRINGETAILED  
TELESCOPES  
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# THE AQUARIUM

VOLUME I

JANUARY, 1913

NUMBER 8

## Danio Rerio

FLOYD S. YOUNG, Chicago.

**T**HE Blauband Barbe, as this *Danio* is sometimes called, is a native of East India. It is said to haunt the small brooks in countless numbers. While short lived, it is very prolific, and has gained a warm spot in the heart of the aquarist, not solely because of beautiful coloration as with some other species, but on account of its incessant activity.

It is a wonderful sight to see thirty or forty, playful as puppies, in an aquarium given to them alone. Never still for a moment, they remind one of the proverbial gamboling lambs. Striped length-wise with orange-yellow lines on an iridescent ground of blue, they seem to be animated streaks of light.

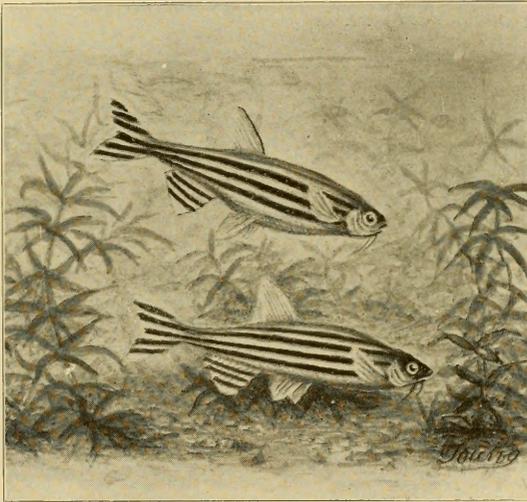
This species seems to spawn most freely when about a year old. When ripe, the sexes may be distinguished most readily, the female having a greatly distended abdomen, while that of the male is tinged with yellow. As the *Danio* is very fond of spawn it is necessary to take measures to prevent its loss. A small square all-glass aquarium of

about two gallons capacity is excellent. In it should be placed chips of granite set vertically. It is well to select pieces about two inches long. Limestone, or other rock containing matter soluble in water should be avoided. A few sprigs of *Anacharis* (*Elodea*) may be introduced to give a home-like touch. The fish may now be placed in the breeding receptacle, great care being exercised that the temperature is the same as in

the tank from which they are to be taken. This fish cannot be successfully kept at a temperature less than 65° Fahrenheit, and when breeding should be much higher.

The eggs after protrusion and fertilization fall into the interstices between the rocks, beyond reach of the fishes. As I am

not at home during the day to observe, I remove the fish after two or three days, and carefully take out the plants and stones, one by one, agitating each to shake off any eggs that may be adhering. The water should be allowed to settle, then *slowly* poured out until but a little remains. If one is lucky and the fish have spawned, the eggs being non-adhesive may be found in the



*DANIO RERIO* (Ham. Buch.)  
Drawing from life by E. S. YOUNG.

sediment. At the first glance one may be disappointed as sharp eyes are needed. The eggs while comparatively large for such a small fish, and heavy, are very transparent. A shallow dish—a soup plate is good—should be at hand, and into it is poured the remaining water, swirling the water to remove eggs from the sides. If no eggs are discovered, the tank should be reset. Place where it will have good light, but avoid much sunlight as it will cause too great fluctuation between night and day temperature. Care should be taken to avoid too large crevices between the rocks lest the fish become imprisoned with fatal results. Under proper conditions, the same pair will spawn at intervals of two or three weeks for several months.

Presuming that we have the eggs, the dish is placed where it will get a little morning sun and an even temperature maintained. In from three to seven days, depending upon conditions, very minute fish wriggle forth equipped apparently, with a sort of hook under the lower jaw by which they attach themselves at the surface to floating plants, such as *Riccia fuitans*, which should then be provided. *Anacharis (Elodea)* will do, but I prefer the *Riccia*. About four days after hatching I transfer the fry to a larger tank, previously prepared, containing both *Riccia* and *Anacharis* and about two inches of water. Here they may remain until developed. They must now be fed abundant infusoria until large enough to eat *Daphnia*. Growth is slow until they are large enough to take the minute crustacea. All food should be strained through medium weight lawn to avoid the introduction of obnoxious life. Larger fish may be fed dried shrimp, *Daphnia*, or dried water plants rubbed through wire gauze having about 100 meshes to the inch.

As the fish mature the water may be made deeper. An aquarium of about four gallons is a good size for the permanent tank, and well planted or artificially aerated, will be sufficient for quite a number as they are small, the illustration showing them about life size.

---

### An Aquarium Cement.

JAMES D. BECKWITH, Hammond, Ind.

RECENTLY, while looking through a magazine devoted to general natural science, I came across a formula for a cement for small tanks that I do not recall noting in any contemporary books on the subject. The preparation is most simple and worthy of a trial.

The ingredients, an egg-cupful of linseed oil, four ounces of tar and a pound of resin are placed in a small pot, and melted and thoroughly mixed over a gentle fire. The cement is to be used in a liquid state, but not when boiling, or it will break the glass. The compound becomes firm in a few minutes and the aquarium may then be tilted and another angle treated. It is said to adhere firmly to the glass and to be very firm, yet pliable enough to be pressed into any shape with the finger. Personally, I would recommend the substitution of pitch for the tar.

I have not as yet used this cement, but intend to try it in my next small tank. If any reader of THE AQUARIUM is familiar with this recipe, and has tried it, I would be glad to know what success attend its use. It has at least one point to recommend it to the busy man (and the impatient man), it is easily prepared and sets quickly.

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Patience, diligence and the capability of bearing a fair amount of fatigue, are necessary qualifications for all who undertake the study of nature.

*Selected.*

## Brackish-Water Aquaria.

EUGENE SMITH, New York.

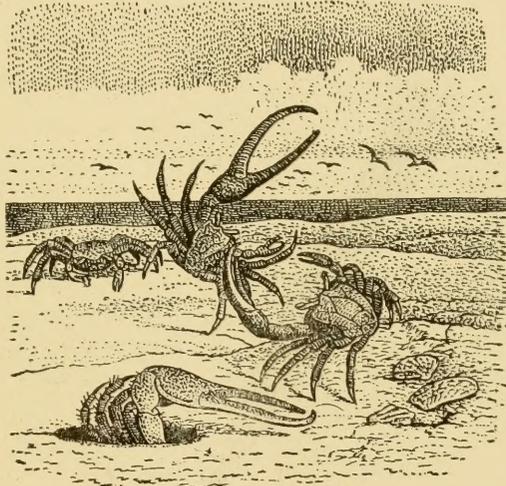
**B**ESIDE the freshwater aquarium and the marine aquarium, there are several other kinds, of which I will mention one, the brackish-water aquarium which may be made of great interest. Its animal inmates may vary greatly according to the degree of salinity of the water, from almost fresh to those found in the estuaries of the streams.

This aquarium may have a sand and gravel bottom, or a clayey bottom, simulating a mud flat. Do not think that a mud bottom must mean roily water. I have had such a one for a considerable period and it was always clear. I secured a tussock covered with young shoots of marine grass (*Spartina*), and pierced with the burrows of the Fiddler-crab, *Gelasimus pugilator*. This was placed in the tank on a layer of stiff clay from the same source.

The vegetation of this tank was a mass of the long *Enteromorpha intestinalis* which floats about with the tide, also some pieces of green laver, *Ulva latissima*, which, though marine, will live for a while in brackish water. It should be removed and renewed when it becomes yellowish or discolored. In less salty water, the pondweeds, *Ruppia maritima*, *Potamogeton pectinatus*, and *Zannichellia palustris*, as well as *Spartina*, may be grown.

The animal life of brackish water shades off at either end into purely marine and freshwater forms. Here

can be used *Fundulus majalis*, the marine killy; *Fundulus heteroclitus*; and *Fundulus diaphanus*, the freshwater killy; *Lucania parva*, the rain-water fish; and *Cyprinodon variegatus*, the sheepshead minnow. The Fiddler-crab, *Gelasimus pugilator*, is one of the best forms of life for the brackish tank. It usually sits at the mouth of its burrow with the large claw folded over its mouth, ready to spring at anything edible. It is quite amphibious and will climb out of the water, so that the tank must be kept covered. The clay bank should project above the surface of the water, to



FIDDLER-CRABS.

(Courtesy of Doubleday, Page & Co.)

enable the fiddler-crab to have a resting place out of it. Small edible crabs, *Callinectes hastatus*, as well as other crustacea, may also be kept in quite freshwater. These two are great fighters, and always at war with one another. The prawn, *Palaemonetes vulgaris* commonly, but erroneously called shrimp, is another interesting inmate, as it is

always active and ready to dispute with the fish and the crabs for any morsel of food. Small eels too, are eligible, and when they lie buried in the clay or sand bottom, with just the head protruding, they make a very interesting picture. Sometimes they appear to be completely buried, but the moment a piece of meat or clam is thrown into the tank near them, they will come out and devour it, often pulling it away from another. Salt-water snails may be kept for a while if the water is quite saline, as well as other more purely marine creatures.

## A Year With a Catfish.\*

EDGAR S. JONES, Lovington, Illinois.

**A**FTER the ice in the river has melted and the rains of April have caused the creeks and rivers of the Mississippi valley to rise, just that soon you will find the catfish coming from his home in the mud-bed of the stream or from beneath the logs that are very common in the slow-flowing streams of the west, and starting up the stream in search of food as well as seeking his home of the year before.

This migratory movement of fishes of inland waters, as compared with that of birds is more pronounced in the catfish than in any other species.

He has had but little to eat during the winter months and is always alert to secure food, such as bits of grass, insects or smaller fishes.

He travels up and down the river as it rises and falls, but by the first of June has chosen a part of the river in which he generally stays until the rise of the river in the autumn. Great schools of catfish make their upward and downward migrations (the first general movement does not begin however, until the hatching season is principally over), but by the first of July at the farthest they begin to isolate themselves, excepting the younger ones, which stay in schools. By the first of June he has gotten over his hungry spell, going in quest of food during the night, beginning shortly after dusk, along the shallow water near the banks or ripples procuring frogs, crayfish and other species of fish, lying in wait for fish, often capturing those equalling him in size.

Fishermen find that bait placed two or three inches from the top of the water near the edge of the boat is generally safe from the turtle and cray-

fish, but easily found by the catfish in his nightly journey.

His summer home is commonly found in hollow logs or small recesses in the sides of the banks. Very often, during the months of August and September, when the water is at the lowest, men who are engaged in capturing the catfish for the market, place hollow logs in favorable positions for the fish and also make excavations in the banks, making tempting places for the larger ones to take up their abode on their return in the spring. The catfish has been captured by this method weighing as much as fifty pounds.

In the early summer, quantities of grain are placed near these places, to further attract the attention of the fish. Frequently, the kingfisher misjudges the size of the catfish when near the surface, and consequently is very often seized by him and drawn beneath the water. He is the Scavenger of the river fishes. His principal food during the fall being decayed animal matter, seeming to relish most that which has undergone the most putrefaction. In the late summer, if the streams become very low, catfish of considerable size may be seen making the ripples; but if the rivers do not lower, this is seldom seen. As the rainfalls begin he starts down the stream, collecting in small schools during the winter months. Many times he can be seen through the ice at the edge of the water, remaining there for days at a time. When openings are made in the ice, great numbers congregate near, remaining for a short time, then returning to their homes in the mud to emerge again at the coming of spring.

Believe me, the talent of success is nothing more than doing what you can do well, and doing well whatever you do, without a thought of fame.

*Longfellow.*

\* Reprinted from *The Atlantic Slope Naturalist* by permission of the author.

## The Brook Silverside.

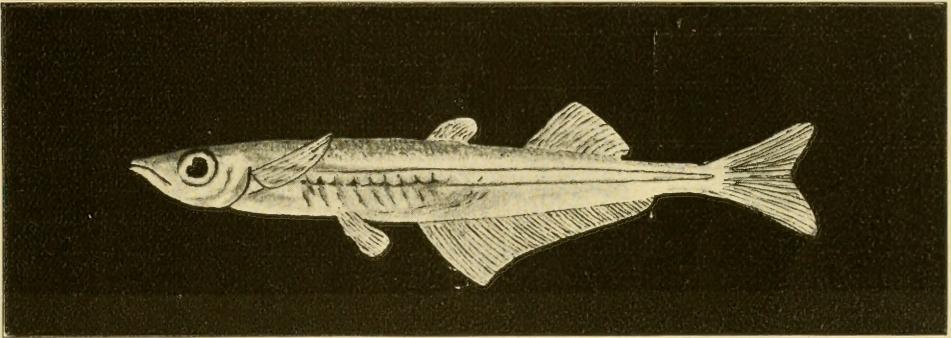
W. A. POYSER, Hammond, Ind.

HE who has observed the little fish bearing the rather forbidding scientific appellation of *Labidesthes sicculus*, will agree with me, even though he be most critical, that we have here a veritable finny beauty. The dainty little fellow, seldom exceeding three inches in length, is very slender and semi-translucent. A lateral stripe of brilliant silver, bounded with a dark line above, is the characteristic embellishment of the body. Above, pale olive-green predominates, while the abdominal region is of the same hue, but of a lighter shade. The back may be slightly dotted with black. It will be noted that

species, our subject among the number, are found in freshwater. The silvery band which is a characteristic of the family, gives the common name.

Our silverside is found from the Great Lakes southward to Florida, and southwestward to Missouri, Arkansas, and Texas. It occurs in a variety of waters, but seems to prefer cool and quiet places.

Its mouth is well provided with teeth adapted to the capture of the sundry minute animals which make up its food. In common with other fish of carnivorous proclivities, it has a very short intestine. Vegetarian fishes require a greater length of time to digest their food, so are provided with longer in-



BROOK SILVERSIDE *Labidesthes sicculus* (Cope)  
Drawing by W. A. Poyser.

our subject is burdened with two dorsal fins, the forward one of which, it is often prone to alternately fold and erect independently of the rear one. The pectorals are carried rather high. The males may be distinguished from the females by the slightly black-tipped dorsal.

The conformation of the nose and jaws, at once lead the observer to conclude that the fish is carnivorous. It belongs in the family of carnivorous fishes called *ATHERINIDAE*. The various species are mostly of small size, occurring in great schools near the shore in temperate and tropical seas: a few

testinal tracts. Examinations of the contents of a number of specimens have revealed the minute larva of gnats, and many species of *Entomostraca*, together with remains of land insects that had fallen into the water.

To the aquarium, the silverside forms an interesting addition. It is active and harmless, at least when kept with the usual tropical species such as *Xiphophorus helleri*, *Barbus* sp., *Girardinus reticulatus*, and the sundry species of gourami. While it devours *Daphnia* with avidity, it is by no means averse to dried shrimp and prepared foods. Though

(Continued on page 72.)

# THE AQUARIUM

*Issued in the Interests of the Study,  
Care and Breeding of Aquatic Life*

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VOL. I JANUARY, 1913 No 8

WITH this issue of THE AQUARIUM, the burden of publication falls upon new shoulders in the Middle West.

The new staff extend hearty greeting to their fellow enthusiasts. The formation of new societies in the Far West and the Far East places the logical point for publication near the center of population, and will greatly expedite matters in many ways.

That the magazine continue, it is necessary that it have the hearty cooperation of every society. How good it may become depends entirely upon the efforts of each and every individual member. There is no valid reason why the magazine should not become the authority on all matters pertaining to the study of aquatic life in aquaria. It can readily climb to this much to be desired place in contemporary literature, if all will contribute to its columns, and make it contain the concensus of opinion of American aquarists. Every one should

feel free to use its pages. The object of the publication is to afford those interested in aquaria a medium through which observations may be recorded, opinions may be expressed, and questions asked. No man should labor for himself alone. To help lighten the trials of our fellows should be the creed of every enthusiast.

Articles and mere items of interest to the aquarist are solicited from all. Nothing will be too short to receive our attention, provided, the observation is interesting and authentic. Very frequently a fact recorded in a few words is of more importance than the elaborately prepared essay. For short notes, as well as questions, an entire page will be available in every issue, entitled *Comments and Queries*. When illustrations are of real value in elucidating the text, they will be utilized as in the past, provided, that the author will furnish the necessary photographs or drawings. It is very desirable that articles pertaining to plants, fish, and other aquarium denizens be illustrated, when a description is incorporated.

The Editor-in-Chief will be delighted to be fairly overwhelmed with copy. Long or short, send them along. It should be deemed an honor to contribute to the interest of its pages. Don't imagine that you must be a Doctor of Literature to become a contributor. Write your data as you would explain the subject verbally. Your local editor or the Editor-in-chief will be glad to place it in the proper shape for the printer, with all the flourishes added for good measure and euphony. All readers are invited to take exception to the answers to queries, and the opinions of writers, if they are not in accord with their experiences. Much valuable information can be secured in this way. Don't be a clam.

Pass no opportunity to help make

your journal a real live magazine, full of meat for every one. If you can suggest any improvements, by all means do so, we want to please all. Don't say, "We have officers to run that affair, why should I bother?" The man who needs a title to spur him to endeavor, is a poor member of any organization, be it social or intellectual. The old adage, "Many hands make labor light", applies forcibly to you. Emulate the strenuous T. R., even though you do not embrace his political convictions; throw your hat into the ring that has been prepared for you, put your shoulder to the wheel, and work indefatigably in the interests of your hobby.

If the support we expect is forthcoming the magazine will increase in value, scope, and size. The size at present will be governed entirely by our resources. If the wherewithal and copy are available for a sixteen-page issue, such will be published. On the other hand, it may contain but eight pages. However, an effort will be made to maintain an average of twelve pages. It should be borne in mind that the value of a magazine, like the value of many other things, does not necessarily depend upon its size, but upon the contents. If there is a place for this little bark on the great seas of Natural History journalism, and we feel there is, it should grow and keep apace with the demands of American aquarists.

In Europe many periodicals are published on aquaria and aquatic life. Surely in the great United States there is room for at least one. Can it be said that the American nation is too utilitarian to support a periodical that is devoted to a hobby that is purely intellectual? Let us disprove such a suggestion. In this immense country nothing is impossible. The day of the aquarium in America is just dawning, compared to its development across the Atlantic.

Every little effort you put forth in the interest of your study, your magazine and your club, will add a bright ray to that dawn of great promise. Little efforts pave the way for greater things.

The sincere thanks of every society member is due to the former management of the paper. The admirable manner in which the magazine has been edited, managed and printed in the past, should call forth the approbation of all. It is to be greatly regretted that the illness and subsequent death of Mr. Smith rendered a change necessary in the office of Editor-in-Chief. Mr. Smith by reason of his extensive store of knowledge of fish and aquaria was peculiarly fitted for the position which gave him so much pleasure. With this change, it seemed desirable that the Business Manager be in close personal contact with the Editor-in-Chief, hence Mr. De Voe resigned in favor of Mr. Schenk. For similar reasons the magazine will hereafter be printed under the supervision of the Editor-in-Chief in Hammond, Indiana. The position of Treasurer has been created and will be filled by Mr. F. S. Young of Chicago.

To much praise cannot be given the gentlemen who have so willingly, and cheerfully given their valuable time and knowledge to a work that is purely a labor of love. Mr. Innes' great interest in the project led him to give his personal attention to the publication of the magazine, with the result that the paper has been a perfect example of the printers art. We move a rising vote of thanks to Messrs. Smith, De Voe and Innes.

To the attentive eye, each moment of the year has its own beauty; and in the same field it beholds every hour, a picture which was never seen before, and which shall never be seen again.

*Emerson.*

## Public Interest in Aquaria.

C. G. B. SCHENK, Milwaukee, Wis.

IT is astonishing how much general interest in the subject of aquaria and fishes has sprung up very recently throughout the country. In Milwaukee the activity is felt in all directions. The Public Library formerly had one copy of Wolf's *Goldfish Breeds*. A great demand by the patrons made the acquisition of three additional copies necessary, as well as other books. There is no doubt that the Milwaukee Society is responsible for the popular interest aroused. The demand made upon a library for any class of literature is a sure and accurate indication of the trend of public thought. Throughout the country, the schools have done much to aid the movement by the maintenance of aquaria in the class-rooms.

In Chicago two long articles appeared in one of the daily newspapers relative to a proposed public aquarium, to be similar to the one in Battery Park, New York City. A movement has been inaugurated to have an expenditure of \$25,000.00 authorized for the erection of a properly equipped building in Lincoln Park, in conjunction with the Zoo. If the plan is consummated, an effort will be made to have a state hatchery in the building, that the public may see and understand the efforts that are being made to maintain the supply of food and game fishes.

Our societies can do much to foster this growing interest in the subject. The public exhibits by the New York and Brooklyn Societies, and the more private ones of the Philadelphia Society, have done much to direct attention to the "wonders" that may be kept in the household aquarium. Just how fast this desire can be fanned into flame depends entirely upon the efforts of each member of our clubs. Every one should ask

himself a few questions. Have I evinced sufficient interest in the queries of the beginner, invited him to the club and tried to secure a subscription to *The Aquarium*? What is your answer, member? Did you ever pause and ponder over the indisputable fact that the continued success of any movement, or organization, depends entirely upon the continued infusion of new blood and new enthusiasm? Therefore, it is your bounden duty to round into the fold every tyro that crosses your path. Foster patiently that kindling desire for knowledge. Every additional subscriber you secure means at least five readers, and a larger field for our hobby. Let us all pull together; it is a great work, full of interest and well worth our best endeavors.

## The Brook Silverside.

(Continued from page 69.)

delicate, it seems to take kindly to confinement in the aquarium, but is impatient of warm water. A rise in the temperature to seventy degrees made it decidedly morose, in contrast to the delight of its tropical companions, and seventy-five to eighty degrees (Fahrenheit) spelt death. A temperature of about sixty-five degrees seemed the happiest. The specimens of which I write, were secured in the early autumn from the broad cool shallows of a large lake, which probably accounts for their preference for cool water.

Thus far, I have been unable to secure any information as to its breeding habits. In the preparation of the article I am indebted to the report of the Illinois Natural History Survey on the fishes of that state, and the observations of the writer who has studied the species, which is found in Wolf Lake, near Hammond, Indiana.

# COMMENTS AND QUERIES

*What is the difference between square-tail, broadtail and veiltail goldfish?* W. R. R. These terms all refer to the same type, and are used interchangeably.

Earthworms may be kept on hand for winter feeding in boxes of moist soil, placed in a cool cellar. The addition of some coffee grounds to the earth is said to be beneficial — to the worms.

A noticeable feature of the boulevards and parks of Baltimore is the number of concrete ponds or basins for goldfish. Those observed contained hundreds of fish of the common variety, many attaining a length of ten to twelve inches.

Dried shrimp imported from Germany, is a popular food among aquarists keeping native and foreign wild fish. It has the merit of being much cheaper than the usual prepared foods. Many feed it exclusively when live food is not available, even to goldfish, with excellent results.

*Where is the organ of hearing in fish located?* E. J. E. Each scale of the lateral line on fish is perforated by a tube leading to a duct connected with a sac in the head; their function being the secretion of mucus which covers the body to lessen the friction of scales and water, and make it impervious. This mucilaginous system is also provided with nerves and is the seat of a peculiar sense which corresponds to the organs of touch and hearing. From *Goldfish Breeds* by H. T. Wolf.

The study of natural history is within the reach of everyone; and he who is engaged in it, is presented at every step in his progress with something capable of awakening pleasing emotions.

A knowledge of the food and feeding activities of fishes is fundamental to any fair understanding of their place and function in the general system of life, and especially for their successful maintenance and breeding in aquaria.

*With what mechanical means are snails provided to scrape the algae from the objects upon which it grows.* C. I. S. Snails secure their food by the action of the odontophore, radula, lingual ribbon, or tongue as it is variously termed. It is essentially a strap which bears a long series of transversely-disposed teeth. By means of muscles the strap acts like a rasp or file upon any object to which it is applied. The resulting wear of the teeth is made good by the development of new teeth in a secreting sac in which the rear end of the tongue is lodged. In some species the teeth are not all of the same shape and size.

*Why is Vallisneria spiralis so called?* S. S. H. The genus was named in honor of Antonio Vallisneri, an Italian botanist of the Eighteenth Century. The specific name, *spiralis*, refers to the habit of the stem of the female flower. The flowers of the female plants rise to the surface of the water by uncoiling their long spirally twisted stalks; the flowers of the male plant become detached from the short pedicels at the bottom and rise to the surface. After fertilization, the female flowers return under water by the recoiling of the spiral stem and the seeds are ripened under the surface. *Vallisneria spiralis* is a dioecious species, that is, the sexes are distinct and not present in a single plant, which is either male or female.

## COMMENTS AND QUERIES

CONTINUED.

Teleost is the name applied to fish which have a fully ossified skeleton.

According to the Reverend Bateman eels have been known to live in aquaria for twenty and thirty years.

The addition of small pieces of plaster of paris to the aquarium, materially assists the snails in forming the shell.

Tritons or newts in common with lobsters and some other lower animals, have the power of reproducing lost limbs.

In Japan *Daphnia* is called mijinko. As much space and attention is given to its propagation as to the fish to which it is fed.

All fish of the genus *Carassius* to which the goldfish belongs, are without barbels. The barbels are fleshy elongated projections, usually about the head, in fishes.

The goldfish was first introduced into Japan from China at the beginning of the Sixteenth Century. It was brought to Europe in 1611 and later to the United States.

The climbing perch (*Anabas Scandens*) when migrating from a pool which is in danger of drying, usually chooses the night or early morning, while the dew is still on the vegetation. The specific name *scandens* means climbing.

At the meetings of the various societies, inquiries are constantly being made which arouse interesting and profitable discussion. Why not elaborate upon such questions and form articles for publication in *The Aquarium*, or at least a short item for this page? Local editors please take note.

It has been asserted that a carp weighing twenty pounds will contain more than a million eggs.

It is said that snails will eat the gelatinous envelope of frog eggs, thereby causing the death of the tadpole. Has anyone observed this habit?

If this copy of *The Aquarium* is of no special interest to the reader of this item, it would be a favor to hand it to some one interested in the subject. It would certainly be appreciated by the management, and also, probably by the one to whom it is given.

"Those salmon that are taken in the river Mersey in Cheshire, the first year are called smelts, the second sprods, the third morts, the fourth fork-tails, the fifth half-tails, and the sixth, when they have attained their proper growth, are thought worthy of the name of salmon".  
*From Art of Angling published in 1774.*

Contributors will add to the value of their articles by using all common, as well as the scientific name of the subject discussed. Many animals have popular names that vary considerably in different localities. All are indispensable, as we aim to interest all classes of investigators. Many microscopic organisms, and those that are of such infrequent occurrence as not to attract attention, may not have a vernacular, however.

Catfish are at once our largest and smallest native fish. The little stone cat is mature at three inches, whereas the mudcat attains a weight of one hundred pounds. The giant sheatfish, a member of this family, occurring in Europe abundantly in the Danube, weighs as much as three or four hundred pounds, being next to the sturgeon, the largest European fish. A number of tropical species of catfish are popular with aquarists.

# SOCIETY BULLETINS

## Brooklyn Aquarium Society ❁ ❁ ❁

Regular meeting 4th Tues.  
in every month except June,  
July & Aug. at Fairchild Bldg  
702 Fulton St., at 8 P. M.

Initiation Fee, \$1.00  
Annual Dues, \$2.00

President, ..... W. F. DEVOE, Box 383, Baldwin, N. Y.  
Vice President, ..... DR. RUDOLPH C. LIENAU, 137 Bainbridge St.  
Local Editor, ..... DR. FREDERICK SCHNEIDER, 64 Grove Street.  
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Financial Secretary, ..... THEODORE P. FRITZ, 805 Halsey St.  
Local Business Manager, ..... OWEN H. SMITH, 702 Fulton Street

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## Chicago Fish Fanciers' Club

Regular meetings on the  
Second and Fourth Wed-  
nesday at 809-812 City  
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Librarian, ..... W. A. POYSER, Hammond, Ind.  
Local Editor, ..... F. G. ORSINGER, 123 S. Oakley Blvd.  
Local Business Manager ..... J. W. GAGE, 1225 Glendale Ave.

## New York Aquarium Society ❁ ❁ ❁

Regular meetings on the  
Second Thursday at the  
German-American School,  
Sherman Ave., Jersey City,  
and on the Fourth Friday  
at the American Museum of  
Natural History, 77th St.,  
and Central Park West, New  
York, each month except  
July and August.

Initiation Fee, \$1 Dues \$2

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Local Editor, ..... JOHN TREADWELL NICHOLS, Am. Museum of Nat. History  
Local Business Manager, ..... CARL P. ORDING, 1931 Broadway, New York

## Philadelphia Aquarium Society ❁ ❁ ❁

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Fourth Wednesday, at 1414  
Arch Street

Initiation Fee, \$1.00 Annual  
Dues, \$1.80, Corresponding  
Membership \$1.00 Annually

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Treasurer, ..... HIRAM PARKER, 224 N. Wilton Street  
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Local Editor, ..... WM. T. INNES, Jr., 1824 N. Park Ave.  
Local Business Manager, ..... L. M. DORSEY, Jr., 2219 N. 19th Street

**Wednesday Evening, January 22nd -- Wm. Meehan, Director of the  
Philadelphia Public Aquarium, on "The Artificial  
Propagation of Wild Fish".**

## Milwaukee Aquarium Society ❁ ❁ ❁

Regular meeting on First  
Monday at 105 Grand Ave.  
Initiation Fee, \$1. Dues, \$1.20

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Vice President, ..... AUGUST GRAU, 3110 Grand Avenue  
Treasurer, ..... GEO. J. C. STEFFEN, 950 First Street  
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Librarian, ..... AUGUST W. POLLWORTH, 1816 Wright Street  
Local Business Manager, ..... W. A. BRYE, 304 Fifteenth Street

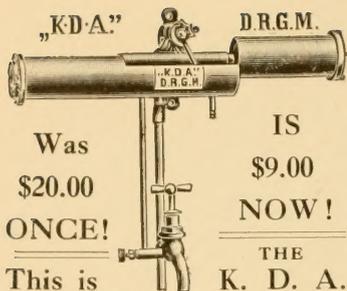
## Minneapolis Aquarium Society ❁ ❁ ❁

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Treasurer, ..... J. W. FRANZEN, Curator Museum Pub. Library  
Secretary, ..... ROBERT RASMUSSEN, 504 Loan & Trust Bldg

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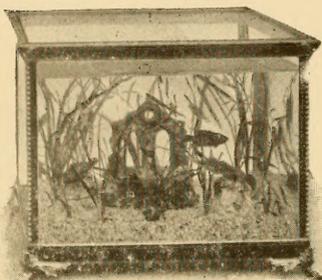
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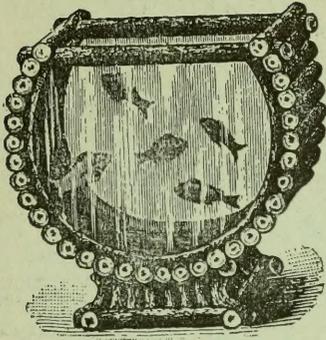
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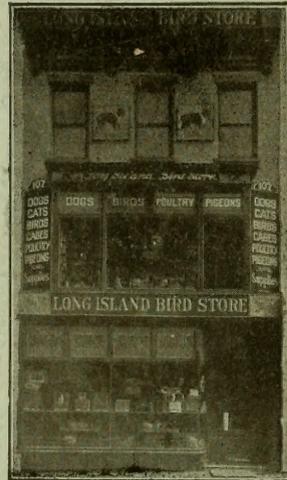
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