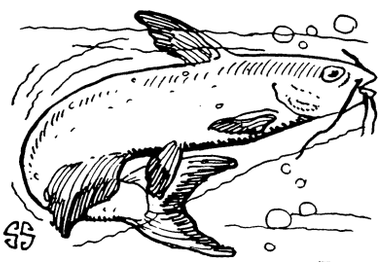
NATURE RAMBLINGS

By Frank Thone



Mississippi Catfish

TWO or three successive fishermen in the Presidential chair have given so much advertising to game fish, especially trout, that we are in some danger of forgetting that after all a fish's chief function is not to be caught but to be eaten. There are a good many fish that sportsmen do not bother about, that still make capital objects for the prowess of trenchermen.

High rank among these should be accorded to the great catfish of the Mississippi river and its larger tributaries. He is not the abject groveller in the mud that many of his lesser cousins are (though even these humble fish are good food); he is a big, bold, free swimmer in the turbid, soupy waters that are his home. Though he may not understand the delicate arts of fencing like a trout or bass, he makes up with weight and sheer brawn what he lacks in skill, and can give a couple of men in a skiff a lively scrap if they are looking for one.

And after the cook has performed his offices upon the big catfish carcass, never expect a proper riverman, be he white or colored, to come away from the platter while anything but bones remain!

Three-foot catfish are nothing uncommon in the big rivers of our central valley, and once in a while a five-footer is brought in. Writers as diverse in time and gifts as Pére Marquette and Mark Twain have devoted their pens to the Mississippi catfish. The former saw one in the Mississippi during the first day of his immortal voyage on that river, and he devoted more space to it in his diary than he did to the great stream itself.

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Hydraulic Study to Save Millions

Hydraulic Engineering

MILLIONS of dollars will be saved the United States government as the result of a $350,000 investment in an hydraulic research laboratory at the Bureau of Standards, H. N. Eaton, now in charge of this work at the Bureau, said in a radio talk presented by Science Service over the Columbia Broadcasting System.

The savings will be effected, he declared, in the work now planned on flood control on the Mississippi and other rivers, in dams, waterways and irrigation projects. Billions of dollars will be spent in carrying out these plans, so the saving of even a small fraction will be a great gain to the country.

Appropriation of the funds for the hydraulic laboratory has recently been made by Congress and the plans for establishing it are now being considered by an advisory committee of leading engineers.

Describing the immediate financial value of the laboratory, in addition to its academic interest, Mr. Eaton said:

"We have already embarked upon the extension of our inland and coastal waterways at a probable cost in excess of $500,000,000. Flood control of the Mississippi and other rivers will cost us many hundreds of millions of dollars during the next decade. The immense Boulder dam on the Colorado river is to be constructed at a cost of $165,000,000. Consideration is being given to the construction of the Nicaraguan Canal at a cost undoubtedly in excess of $500,000,000. In addition, immense sums are being expended every year in irrigation projects, on hydroelectric plants and on water supply projects.

"Obviously all means which will permit a saving of even a small percentage of the cost of these huge projects will mean the saving of millions of dollars. This can be done with the aid of the hydraulic laboratory.

"The investigations conducted in its experimental flumes furnish more exact information to the designers of hydraulic structures and enable them to effect economies through the more accurate knowledge of the processes of flow with which they have to deal. Tests on models of proposed structures point out the most effective design, give added assurance that the structures will function as planned and indicate how maintenance costs can be reduced."

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Smallest Germ Viewed by Eye—*Continued*

hardening — multiple-sclerosis, many hardenings. These patches increase in number as the disease progresses.

Aside from the development of Barnard's ultra-microscope, the detail of technique which seems chiefly to be responsible for the discovery is the making of cultures in a completely sterile atmosphere. A chamber a little smaller than an egg crate is exposed to short wave lengths—ultraviolet rays—until the air it contains has been sterilized. The technician's hands and arms also are sterilized and introduced into this chamber through a device which prevents contamination. Hitherto, research with the ultra-miscroscope has been inconclusive because it has seemed impossible to obtain uncontaminated cultures. Miss Chevassut's technique appears to be a great step forward in this direction, and to have made the isolation of "creeping paralysis" germs possible.

A blood serum known as Hartley's broth is used for the cultures. Virus from the cerebro-spinal fluid of persons suffering from the disease is introduced into the culture tubes in the sterile chamber and the tubes are closed and incubated.

When the cultures are examined under a magnification of 1,800 times, spherical globules in clusters appear. When separated they have two motions, one a Brownian movement or very rapid vibration associated sometimes with inert matter under very high magnification. The other appears to be a longer oscillation comparable to the movements of some living bacilli. The apparent organisms are too small to take a stain and can be seen only on a dark field with direct illumination. As yet no nuclear material is evident.

But the fact that these forms are discovered only in the virus taken from persons suffering from the disease and that they appear to multiply in cultures, suggests very strongly that they are the first organisms of a filterable virus the human eye has seen and identified.

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