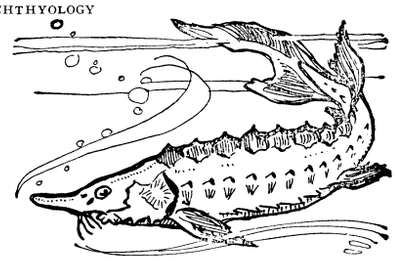
NATURE RAMBLINGS
by Frank Thone

ICHTHYOLOGY



Sturgeon

THE sturgeon is a freshwater fish, but you will find him only in goodsized lakes and in big rivers, for he is a big fish and needs room for the proper expression of his style. He will furnish the ambitious fisherman with a fine fight; but as for eating afterwards, that's a matter of taste. Some like him and some don't. But the roe of Mrs. Sturgeon becomes caviar, which you are supposed to like, even if you don't, or have never tasted it.

Looked at with a curious eye, the sturgeon has much about him that reminds one of a shark. Arrangement of fins, shape of tail, general outline of body, mouth on underside of pointed, shovel-shaped-snout—there is something decidedly and uncomfortably reminiscent about the whole business. Also, his fierceness and his voracious appetite, and his vicious behavior when hooked, all recall memories of sharkiness.

There is some right and reason in this. The sturgeon belongs to a primitive order of fishes, the ganoids. These were the fishes that in the remote ages before the coal beds were formed populated the seas with armor-plated monsters—veritable living submarine battleships. The rows of heavy scales along the sturgeon's back are relics of that time. These earliest of true bony fishes (for sharks have no true bones, only cartilages) were the monarchs of their time, but a newer race has crowded them out, so that only a few odd genera of the ganoids have lived through, and of these the only one worthy of recognition of a knight and a gentleman is the sturgeon.

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A shrimp spawns once in its life but may produce 800,000 eggs.

ENGINEERING

British Engineer Criticizes Development of American Car

THE QUESTION that bothers most prospective car purchasers is how they can tell the differences between and the advantages of the many almost identical automobiles in the medium price class. American manufacturers have lost sight of some of the important foreign automotive engineering developments and are proceeding along a narrow path of specialized improvement in detail, is the opinion of the British engineer, L. H. Pomeroy, Managing Director of the Daimler Company that produces the Baby Austin cars in England. Mr. Pomeroy talked before the Society of Automotive Engineers at Chicago.

The English criticisms of the American car range from too rapid depreciation caused by big horsepower to the opinion that the windows are too high. Although they grant that "one man's meat is another man's poison," some of their suggestions are worth considering.

Too Powerful

The premier contention is that the size of the engine has been developed out of all proportion to the requirements of rational performance. High speeds and high acceleration have been overemphasized and the comfort, spaciousness and luxury of the body have not kept pace with the stupendous power performance. Perhaps this has been due to the ease with which publicity departments can impress the public with spectacular figures.

English engineers feel that American designers have not taken advantage of the possibilities of considering the gear box as part of the engine. They feel that the motorist will secure as much enjoyment at less cost from driving with a lower powered car even if it is necessary to shift the gears more often.

The use of light alloys of aluminum and other metals that has become so common in European cars has been almost entirely neglected in this country. A light weight car means that the engine power can be cut down and the economy of operation increased. The saving of as much as 50 per cent. in some of the heavy steel parts, such as axles, will entail an additional expense but past experience has shown that the consumer has always been willing to pay for a genuine improvement.

Engineering developments in Europe that are not attracting the attention that they should are methods of gear shifting, automatic variable-speed transmissions, fluid flywheels and supercharging.

British manufacturers are wondering if the American car is to hitch its wagon to the star of top-gear performance forever in spite of engineering developments which make this wasteful and unnecessary.

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ARCHAEOLOGY

Most Enticing Mounds To Be Opened in Fall

THE GREAT "South Terrace," perhaps the most enticing part of the acropolis of Monte Alban, because under its ancient hood of earth and vegetation it appears to be the best preserved part of the ancient city, will be the goal of the Mexican Monte Alban expedition headed by Dr. Alfonso Caso this autumn.

The acropolis is a tableland on top of the Alban Mountain. It is about a third of a mile long, lying roughly north and south. The "North Platform," which cuts the tableland off on the north, was excavated last year, as was the Dancer's Temple on the west, and (*Turn Page*)

a group of three connected pyramids in the middle. The South Platform, superior to any of these other structures in ancient remains, to judge by its contours revealed under its earth covering, is still untouched. It looms even higher than the North Platform did, and looks down on the whole acropolis. It has mounds on top, and there are mounds upon those mounds, so that Monte Alban's highest point is there. On the sides it looks straight down into the Valley of Oaxaca, 1,300 feet below.

On the southeast corner of this South Terrace is a mound with a hollow rotunda inside, ruined, but still preserving its shape. It had a chimney-like opening in the roof, and corridors on the ground floor going into the four world directions.

Mrs. Zelia Nuttall, the eminent archaeologist long resident in Mexico, who recently died, called this an astronomical observatory, and the most important ancient building in America because she saw in it the link of all the calendar-cultures of America. This building will be included in a thorough excavation of the South Terrace.

In fact, Dr. Caso deliberately saved the South Terrace because of its apparent importance, believing that excavating experience in other parts, first, would be of service here. The Mexican archaeologists will also continue excavations in the big graveyard area where treasure was found in 1932, and where twenty-six other tombs were found this past season.

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First Glances at New Books

Geography

THE MAKING OF GEOGRAPHY—R. E. Dickinson and O. J. R. Howarth—*Oxford Univ. Press,* 264 p., $3. Tells of the brave, groping efforts of travelers and navigators to find out what this earth is like. With its first picture, a Sumerian map of the world drawn 2700 B. C., and its last picture, a map dividing the world into natural regions according to very modern geographic principles, this history of geographic science is a good post-graduate course in geography for the fire-side, as well as a good reference work.

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Biology-Philosophy

THE UNIVERSE AND LIFE—H. S. Jennings—*Yale Univ. Press,* 94 p., $1.50. The Terry lectures at Yale as delivered by the Henry Walters Professor of Zoology at the Johns Hopkins University. Prof. Jennings discussed the nature and potentialities of the universe as revealed by the study of biology, the production of new and unpredictable phenomena as time passes, the nature of evolutionary progress and the management of life.

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Textile Technology—Physics

FUNDAMENTALS OF FIBRE STRUCTURE— W. T. Astbury—*Oxford Univ. Press,* 187 p., $3. X-rays have had many applications to the analysis of structure of materials and their service in understanding fibers is one of the most important. The author, who is director of the Textile Physics Research Laboratory of the University of Leeds, brings into book form six lectures given to textile students and operatives, discussing the fundamental nature of matter and radiation, the invisible fibers of the world of molecules, how atoms and molecules make patterns in space, the inside of a textile fiber, and difference between wool and other fibers. Sir William Bragg in the introduction says: "The fibre is an essential constituent of all things that grow; and man has made wide use of its qualities in many ways. Spinning and weaving have been one of his chief industries since prehistoric times. With wool and silk, cotton and jute, and many other kinds of fibre he has clothed himself and furnished his house; he has made ropes and sails; he has manufactured paper and felt, artificial silk, and hundreds of other things in everyday use. The X-ray methods show that fibres are crystalline in the sense that they contain innumerable small bodies, the atoms and molecules of which are in regular array. The properties of the fibre depend largely on the size and disposition of these minute crystals as well as on the arrangement of atoms and molecules within each crystal. The X-rays not only reveal the existence of crystalline structure: they determine also its design."

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Botany

THREE KEYS TO WILD FLOWERING PLANTS—Mary Franklin Barrett—*Author, 64 Park Avenue, Bloomfield, N. J.,* 46 p., 50c. Artificial keys to (1) submerged and surface-floating aquatics, (2) autumn-flowering moncotyledons, (3) autumn-flowering composites of Connecticut, southeastern New York, New Jersey and eastern Pennsylvania. This should prove a useful addition to the encouragingly growing local-flora literature.

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Library Science

NEWSPAPER REFERENCE METHODS —Robert W. Desmond—*Univ. of Minnesota,* 229 p., $2.50. More than half of this book deals with the organization, administration and routine of newspaper libraries; and this material is a mine of valuable and useful information. The book lists at the end of the volume have not been brought up to date.

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Biography

FIFTY YEARS OF MUSEUM WORK: Autobiography, Unpublished Papers, and Bibliography—Frederic A. Lucas—*Am. Mus. Nat. Hist.,* 81 p., 5 pl., $1. A veteran museologist and zoologist gives a good account of his stewardship.

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