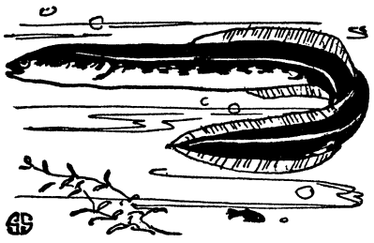
BIOLOGY

NATURE RAMBLINGS

By FRANK THONE



Eels

The good St. Patrick, it is said, drove the snakes out of Ireland into the sea. The legend does not tell whether he invited the eels, those odd fish that look like snakes, to come up out of the sea, and make the Friday fast no fast at all. The legend does not tell this, but it might well be the case, for it is in Ireland's slow rivers that the finest eels in Europe may be speared.

Eels are more appreciated on the other side of the water than they are in America. That is a pity, for we have fine eels of our own, and though they are queer to look at and require a queer kind of fishing to catch, they are decidedly not at all queer to eat. And the virtual impossibility of obtaining smoked eel here is nothing short of an unrealized national misfortune.

Eels are odd fish in more than appearance only. Both European and American species have one of the strangest life histories known throughout the whole animal kingdom. So obscure and hard to trace has it been, that it was only a few years ago that it was cleared up. Both European and American eels, when they are ready to breed, swim down the rivers to the sea and disappear. They migrate to the Atlantic Ocean depths near the West Indies, where they produce their eggs and then die. The young eels—elvers, they are called—look very little like eels during the first months of their lives, but gradually take on their typical elongate shape.

In the meantime they have started their long submarine trek toward their ancestral streams. How they ever travel those thousands of miles, with never a guide, and in the total darkness of the deep, no one can as yet hazard the wildest guess. But they do it somehow, taking several years for the journey, and at last come up the seaboard rivers with the rush of a living tide.

Science News-Letter, September 10, 1927

FORESTRY

Best Trees From Big Seed

The well-known agricultural principle, that better plants grow from large seeds than from small, has been tested out in forestry with promising results, according to E. N. Munns, chief of the office of forest experiment stations of the U. S. Forest Service.

In various tests with important western forest trees such as the California sugar pine, western yelbeen found that the largest seeds sown do produce the largest seedlings. When these seedlings are transplanted, however, either from one nursery bed to a more commodious one or to the forest, those grown from large seed slow down in their growth more than the others. At the end of a year or two in the transplant beds, or in the forest, the lead taken by the seedlings produced from the large seeds has disappeared. W. G. Wahlenburg, of the Northern Rocky Mountain Forest Experiment Station, who has been making a study of the subject, states that this is due to the fact that the roots of the larger trees are injured when torn from the soil or are more severely pruned at the time of transplanting than are those of the smaller trees. Thus if the larger seed is to produce the larger tree it must be sown not in a nursery bed but in the forest where the tree is to grow permanently.

Science News-Letter, September 10, 1927

BACTERIOLOGY

Typhoid In Oyster Juice

An additional danger of typhoid infection from oysters has been brought to light by Dr. William H. Park, director of the bureau of laboratories of the New York City Department of Health. He reports that the liquid in which shucked oysters are carried provides an excellent breeding ground for the typhoid bacillus. Bacilli from an infected oyster therefore not only may be carried by the liquid to other oysters but may increase during their sojourn in the liquid.

"Typhoid bacilli," he says, "have been shown to increase in the liquor of shucked oysters. With a sufficient rise in temperature the multiplication of typhoid bacilli that may be present will occur in the oyster liquid in which oysters are often transported. Thus the danger from a single infected bivalve is capable of being many times magnified by the time a consignment reaches its destination."

Science News-Letter, September 10, 1927

ARCHÆOLOGY

Building a Pyramid

Quotation from A HISTORY OF THE PHARAOHS, Volume I—Arthur Weigall—Dutton.

The Great Pyramid has been regarded for so long as an expression of the vanity of a ruthless and slave-driving tyrant, that I hesitate to point out the fallacy of this view. Yet the Pharaoh's motive was not vain, nor was the execution of the work tyrannical, though his government, it seems evident, was severe and the whole nation was keyed up to a very high degree of efficiency, and must have been organized in an astonishing and almost ruthless manner. He desired to build an everlasting monument which should be for all time the glory of his race, and which should strike awe into the hearts of the kings and peoples of the earth; and in this he so well succeeded that this monument has brought fame to Egypt throughout the ages, and still continues, nearly five thousand years later, to draw the world to the banks of the Nile.

. . . . for 20 years 100,000 men were employed for three months each year, that is to say, they worked only during the time of the annual inundation, when the agricultural population was idle, and a conscription of labor would not have impaired the resources of the country. This would mean the laying of an average of about 1,200 blocks every day; and as the stones which formed the core of the pyramid did not need to be laid with absolute precision, this rate of progress would not have been very exhausting. If we picture 300 blocks lying ready every day at each side of the pyramid, and if then we imagine a gang of some 30 men assigned to each block, we can well understand how, in the case of the lower tiers of the pyramid, the stones could have been quickly hauled up gently sloping brick ramps, each block resting upon a sledge, the runners of which were continuously made slippery by water; and we can realize that with 9,000 men available on each 755-foot front of the pyramid—that is to say, about 36,000 men all told—far more than 1,200 blocks could have been easily and cheerfully dragged into position in a few hours, without confusion and without any of that sweating and straining under the taskmaster's lash which is so often supposed to have been a painful feature of the work. Another 36,000 men would have been required for the daily task of dragging the blocks along

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the causeway to the foot of the pyramid from the edge of the fields where they had been deposited by the boats or rafts which had brought them from the quarries; and the remaining 28,000 men would have more than sufficed for the many other neces ary tasks. In the higher stages of the work the number of stones laid each day would have been smaller, for there must have been some congestion upon the narrow, sloping ramps leading from one tier to the next, and the haulage was longer and more arduous. Scores of these brick ramps must have bigzagged in gentle gradients up each side of the growing pyramid; and all day long these gangs of men must have dragged the blocks of stone up them, singing as they went —for thus to this day the Egyptian labourers lighten their task—while the overseers clapped their hands to lead the songs or swung their whips about in harmless and good-natured energy, even as they do today.

Science News-Letter, September 10, 1927

The bee and silkworm are the only insects put to work on a factory basis by man.