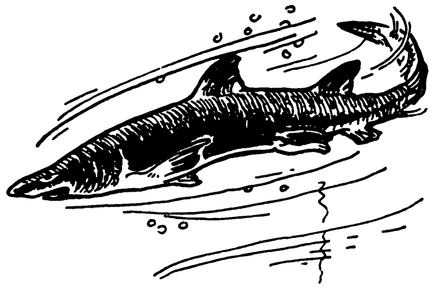
ICHTHYOLOGY

NATURE RAMBLINGS
by Frank Thone



Toothy Aristocrats

➤ THE FRIENDLESS estate of sharks is not a matter of their being parvenus. If length of lineage were the only criterion, sharks would have to be reckoned among the highest aristocracy among backboned animals. There were sharks in the sea long before any kind of vertebrates came to live on land, and they were recognizable as sharks when other fish seemed to be uncertain whether they were going to be fish at all.

Sharks set themselves up in the aristocrat business as many another family has done in later time: by having good weapons and using them ruthlessly. Sharks' teeth are so efficient, indeed, that many island tribes in the South Seas, having no metals or hard stones, made their wooden war clubs the practical equivalent of swords by edging them with these three-cornered dental daggers.

The primitive shark tooth is a triangle, with its cutting edges finely sawtoothed. Loosely attached at the base, it comes loose readily if damaged by an over-ambitious bite, and falls out after a time in any case. There are plenty of replacements; most sharks have several rows of unerupted teeth in their jaws, waiting their turn. There are variants upon this pattern, but all recognizable as belonging to the family.

So much notice has been taken of the teeth of the sharks because they strongly present the shark's chief function—that of an eating-machine. A shark is always hungry, and he is always hunting. Sharks sometimes hunt in small packs, like wolves, and like wolves will turn and rend and devour any member of the pack that gets hurt.

For all their horrid appearence and unappealing ways, sharks have a decided place of their own in the world. Like the wolves to which they are often likened, they keep down the surplus of the teeming life of the sea, and (since their appetites are anything but finicky) they are at once garbage collectors and living incinerators.

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AERONAUTICS

Parallel Radio Beams Determine True Air Speed

➤ AN AIRPLANE'S true speed is determined accurately with radio detection beams on the Army Air Forces' speed course at Wright Field, Ohio. Three parallel beams at right angles to the course do the trick.

The speeding planes cut these beams as they pass over the course, and as they cut each beam send a signal to the ground. The time elapse between the signals is compared with the known distance between the beams, and the speed computed. The method may be used with either high- or low-flying planes.

Numerous other methods have been used to measure true air speed, but all were found to have limitations. Various types of instruments installed in planes give approximate but not true speed. A radar system which followed the plane in flight was not sufficiently accurate, while a method of timing by use of vertical wires, cameras and a timing motor was effecctive only at low altitudes.

The radio beam method operates accurately in any weather and at any altitude, and is the first system capable of measuring speed at or above the speed of sound. A similar installation at Muroc Army Air Base, Calif., will be used to check the speed of rockets and pilotless aircraft.

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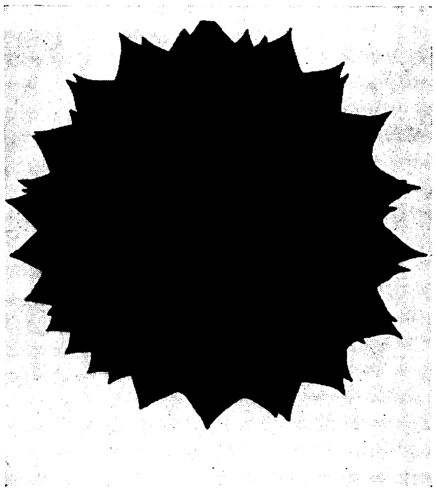

PORTRAIT OF HAY FEVER—This needle-pointed black blob is a ragweed pollen grain magnified 12,000 times life size before an electronic microscope camera in the Westinghouse Research Laboratories. In real life the little fiend is one-half of one-thousandth of an inch across, and it floats around the country by the billion, causing sniffling torment to some 3,000,000 tender-membraned American sufferers from hay fever.

BOTANY

Counting Pollen Grains In Air Not Exact Science

➤ COUNTING pollen grains in the air, which has become a standard public-health job during hay-fever season, is still far from being an exact science. This is indicated by critical studies by Oren C. Durham, technical director of the Abbott Laboratories in North Chicago.

The method now most widely used consists simply in exposing an oiled glass plate for a given length of time, then putting it under a microscope and counting the pollen grains that have stuck to it. This gives a false picture of the pollen content of the air itself, because the rate of fall of the grains differs widely from species to species. Ragweed pollen, for example, falls only one-fifth as fast as rye pollen under carefully controlled still-air conditions.

Mr. Durham has devised collecting apparatus intended to increase the accuracy of air-pollen analysis. He puts the standard oiled glass slide between two large metal plates, which insure that only pollen grains from the air passing between them can fall on the slide.

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