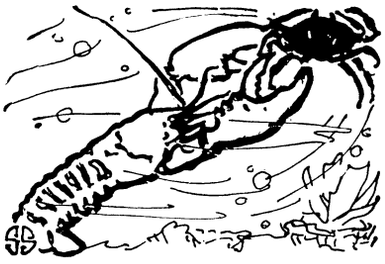
BIOLOGY

# NATURE RAMBLINGS by Frank Thone



### Repairs and Replacements

LOSING a leg makes little difference to many of the lower forms of animals.

There seems to be a sort of inverse relationship between the evolutional rating of an animal and its ability to replace broken or lost parts. If a man loses a leg, he is a cripple for life. If a salamander or a spider or a crab loses a leg, it will grow a new one with little more trouble than it costs a human being to re-grow a scraped-off patch of skin.

In some of the still more primitive orders of animal life, this process of regeneration, as it is called, is carried to an even greater extreme. If you cut a starfish into five pieces, each severed arm stands a fair chance of survival, and will even develop new arms to replace the lost ones; though it is true that as a rule these regenerated arms do not reach full size. If you cut an earthworm in two, and give the halves a moist place to live in, presently you will have two earthworms. And there are some of the lower worms, even more elementary in structure than the earthworm, that can be cut into almost any number of pieces, each of which will shape itself up almost immediately into a miniature of the original organism, and in time grow to full size and normal function.

This regenerative ability may conceivably be interpreted as a means of survival in a tough, hostile and hungry world. The heavens and the earth, and the waters that are under the earth, all swarm with eager hunters and anxious prey. If a big lobster, for example, grabs a small crab by a leg or claw, or an alert bird makes a dive at a lizard and catches it by the tail, it is obviously better to survive the encounter minus a leg or a tail than to be eaten whole. And if you can grow a replacement for the lost member, you're not much out in the final reckoning.

A very few of the warm-blooded animals can escape capture by similar mechanisms, though the regenerative power afterwards is quite limited. There is one genus of mice, in the Southwest, with a terminal tuft of hair at the end of the tail. Catch one of them by this convenient handle, and he will give a sudden twist and run off, leaving a piece of the appendage in your hand. The severed stump bleeds a little, but soon heals over, and then proceeds to grow a new tuft of hairs at the end. But the shortened tail never grows any longer.

*Science News Letter, December 7, 1935*

PHYSICS

# Russia Buys Low Temperature Apparatus From Cambridge

SOVIET Russia is to buy from Cambridge University the low temperature apparatus, including one of the world's most powerful electro-magnets, which Prof. Peter Kapitza has used in his experiments in atomic physics near absolute zero.

Prof. Kapitza, antithesis of the "man without a country," is the brilliant scientist who for some years did his research at Cambridge University in the Cavendish Laboratory of Lord Rutherford. Last spring Prof. Kapitza went home for a visit to Russia and was "detained" permanently because Soviet authorities decided that his work was so valuable it might well be done in the U.S.S.R.

In an interview Lord Rutherford revealed that the decision to accept the Soviet offer to purchase Prof. Kapitza's apparatus had been reached by a joint committee of Cambridge University and the department of scientific research of the Royal Society. Said Lord Rutherford:

"I am thoroughly in favor of the scheme as adopted. I think, on the whole, it is the happiest solution which could have been found for this difficult problem. The amount of payment, you will understand, must be treated as private. A new large electromagnet will be installed at the Mond Laboratory at Cambridge which will produce temperatures within a few thousandths of a degree of absolute zero."

Lord Rutherford and Prof. J. D. Cockcroft, assistant director of the Cavendish Laboratory, were reluctant at first, it was disclosed, to continue researches on the problems like those studied by Prof. Kapitza unless the latter, as a pioneer in the field, so desired.

The payment from U.S.S.R. will be amply sufficient to pay for the cost of building a new and more powerful electromagnet in England. Opinion regarding the strange purchase is that science will be aided in the end, for while a slight delay will occur in the low-temperature atomic research, eventually there will be two sets of equipment where there was but one before.

One line of research which will also be undertaken with the new Cavendish magnet will be atomic bombardment with apparatus of the cyclotron type as used at the University of California.

*Science News Letter, December 7, 1935*

ART

## Indian Art to Enliven Boulder Dam Power House

**See Front Cover**

OLD and new America will combine at Boulder Dam, when artists get to work with Indian designs.

In the control room, where workmen regulate tremendous forces of electricity and huge bodies of water, the expanses of gray wall are to be enlivened with Indian symbols of cloud and rain.

One of the designs, reproduced on the cover of this week's SCIENCE NEWS LETTER, is taken from a prehistoric Indian bowl found on the site to be submerged by the new lake. It contains symbols for lightning, (the step-like figures) clouds, water, and mesas.

Consulting artist Allen Tupper True, of the Bureau of Reclamation, has been studying Indian pottery designs, basketry patterns and sand paintings to adapt Indian symbols that represented natural forces. Indian motifs, he declares, offer possibilities superior to those of classic Greek and Egyptian.

Ten colors which predominate in Navajo rugs and Pueblo ceremonial sashes have been chosen. These colors, flung against vast areas of gray concrete walls, will be a deep, warm blue, black, brown, a concrete gray, warm white, jade green bordering on turquoise, brilliant deep red, vermilion, orange and yellow.

*Science News Letter, December 7, 1935*