ICHTHYOLOGY

Shrimp Feast Lures Fish

➤ NOTICE TO fishermen: when those fish you know are there refuse to bite, try a little scientific investigation.

Last fall when the big striped bass were running in Chesapeake Bay, fishermen were baffled when the fish turned up their snouts at the usual fare of plugs and fish bait. Then they got the bright idea of examining the stomach contents of the few striped bass they managed to hook.

This turned up the answer. The fish had found a better chow. The fishermen found the fishes' stomachs full of an odd creature that seemed a mixture of shrimp, porcupine and steel trap.

U. S. Fish and Wildlife scientists identified the animal as the mantis shrimp, *Squilla empusa,* named for his striking resemblance to the praying mantis, an insect. It is a flattened, armored, spine-covered relative of the commercial shrimps, armed with a pair of very effective claws.

Dr. Fenner Chace, crustacean expert of the U. S. National Museum, said that although the mantis shrimp are always present in Chesapeake Bay, there is undoubtedly an increased number of them in the bay now. He said it is very likely that striped bass find them tastier to eat and easier to catch than the old stand-bys of small fish.

But allaying the fears of the fishermen, Dr. Chace said the situation was probably only a temporary one, brought on by some non-permanent change in the bay environment favoring increase of mantis shrimp.

Members of the mantis shrimp family are found all over the world, Dr. Chace said, and in some areas are eaten by man. They are often caught in trawls mixed with commercial shrimp, but in comparatively small numbers.

In the meantime, fishing authorities in the Chesapeake Bay area advised sports fishermen to put away their artificial plugs for a while and go after the striped bass with baits of mantis shrimp or frozen commercial shrimp.

A little scientific looking paid off in this fishermen's problem. Can it solve yours?

Science News Letter, January 31, 1953

ENGINEERING

Atomic Power Plants

➤ DESIGN OF super-modern atomic power plants will be challenging to engineers because of "unusual problems" that must be solved to make them safe, M. A. Schultz of the Westinghouse Atomic Power Division told the American Institute of Electrical Engineers meeting in New York.

In atomic powerhouses, nuclear reactors will take the place of giant oil- and coal-burning furnaces now used. Heat given off by atomic fission will be carried to the boilers and converted into steam to drive the generators.

But the nuclear reactors will create radiation hazards which must be solved before the reactors can be used safely. In addition, nuclear reactors will require special instrument schemes to let operators know what is going on inside them. And because they are capable of generating terrifically high temperatures, some way must be found for getting rid of excess heat.

Start-up and shut-down requirements also will pose problems to the design engineers. Reactors cannot be started up too fast and never can be really shut down, he said.

"In considering the output of the nuclear reactor, there is no such thing as 'zero power' involved. Even in a brand new, cold, clean reactor which has been shut down as much as possible, an inherent source of neutrons exists which causes a certain amount of nuclear fission to occur."

When control rods are shoved into the reactor to "cut it off," many secondary radiation, such as gamma rays from fission products, often generate "substantial" amounts of power. It may be necessary to dump this spare power into a useless load.

Nuclear poisons created when reactors are shut down also must be considered in power plant design. The poisons build up and reduce the overall reactivity of the reactor. The poisons ultimately die away, leaving the reactor unharmed. But they can become strong enough to make the reactor inoperative for a while. In power plants, which must be turned on and off as the demand for electricity changes, some way must be found to get around the effect that atomic poisoning has on the productivity of the reactor.

Science News Letter, January 31, 1953

VETERINARY MEDICINE

Chemical in Poultry Food to Fight Disease

➤ WITH THE hope of helping to prevent air sac disease of poultry, which may kill up to 50% of affected chickens and turkeys, the Food and Drug Administration issued a new regulation permitting addition of para-aminobenzoic acid to poultry feed.

This chemical, sometimes classed with the B vitamins, will not, FDA is satisfied, cause any harm to people eating the chickens and turkeys that get it in their feed. And if the chemical can stop air sac disease, it may mean more chickens and turkeys for people to eat. It may be added directly to feeds or with the antibiotic formula used to promote growth.

Air sac disease is a chronic ailment which has become more prevalent and more important economically within the past two years, although poultrymen have known it for much longer. The reason for this increase is not known. Scientists are not agreed on the cause of the disease, though a germ somewhere between a bacterium and a virus in size is considered at least one cause.

Besides killing birds, this disease is a debilitating one, causing extensive loss of flesh and drop in egg production. In broilers it may prolong the time they must be fed to marketable size from the usual 10 or 11 weeks to 15 or 16 weeks.

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