PUBLIC HEALTH

Poison Fish Menace Health

Identifying poisonous fishes and taking precautions against poisoning by the fishes that are taken for food present problems for the public health official.

➤ RECENT MASS poisonings affecting some 40,000 persons in the western Pacific area, mostly Japan, the Philippines, and Viet Nam, point an incriminating finger at the fishes.

The large numbers of persons affected in a five-year period also indicate the public health significance of poisonous fishes, Dr. Bruce W. Halstead warns in *Public Health Reports* (April).

Poisonous fishes can be described as mostly tropical, commonly found near islands and in lagoons rather than in the deep sea or along continental shores.

So far scientists have little factual information on just what makes some species of fish poisonous, how to detect an edible fish from a poisonous one, or exactly how great a toll of human lives is taken. Apparently toxicity is not "species specific," except possibly for the puffers. In one species, fish may be toxic in one place and edible in another place. In some species large individuals are more likely to be poisonous than smaller fishes.

Neither spoiling nor bacteria, except with tuna and some related fishes, seem to influence the origin of the toxin, Dr. Halstead reports.

Scientists now believe that most of the poisons come from the food eaten by the fishes. Stomach content analyses show algae are more often found in poisonous fishes than any other food. Also toxicological tests of these algae found along shores show some contain poisons. Bacteria do seem to play a part in forming a toxin in the tuna, however.

Symptoms of fish poisoning range all the way from a "gastrointestinal upset," nausea, diarrhea and vomiting to violent convulsions, paralysis and other "violent neurotoxic symptoms." With some fishes, Dr. Halstead notes, the case fatality rate is as high as 60%.

Dr. Halstead advises that the viscera—liver and intestines—of tropical marine fishes never be eaten. Roe is also potentially dangerous, producing rapid death in some cases. Unusually large groupers, barracudas and jacks should not be eaten during their reproductive season.

If questionable fishes must be eaten in order to survive, Dr. Halstead recommends cutting the flesh into small bits and soaking the pieces in several changes of water. This, he says, leaches out the poisons which are water-soluble. Ordinary cooking alone does not make the fish less poisonous.

Dr. Halstead, chairman of the section of natural products, School of Tropical and Preventive Medicine of the College of Medical Evangelists, Loma Linda, Calif., is currently on military leave with the division of preventive medicine, Naval Medical School, National Naval Medical Center, Bethesda, Md.

Science News Letter, May 10, 1958

ENGINEERING

Street Lights Inadequate

The use of fluorescent lights or mercury-vapor lamps could help correct a situation in which some 90% of the nation's streets are inadequately lighted.

➤ NINETY PERCENT of the nation's streets are poorly lighted in an age when modern improvements make it possible to provide good lighting for 100% of our streets.

The same developments that will provide good street lighting also will save cities money in the long run, scientists at a regional meeting of the American Institute of Electrical Engineers in Washington, D.C., were told.

Incandescent lamps, or light bulbs, now used for most street lighting should be replaced by more efficient and longer-lasting fluorescent or mercury-vapor lamps, E. B. Karns, Westinghouse Electric Corporation, Cleveland, said.

Some engineers believe even less than 10% of America's streets are well-lighted. John W. Young, Natwick, Mass., lighting consultant, told the same meeting that "of a total of 372,000 miles of urban roadways, only 7.2% is lighted to the minimum standards."

The remaining streets vary, with many "classed as passable but with lighting inadequacy as gauged by present day recommended practice," he said, adding that even the good lighting of major streets and freeways "increases the urban percentage only slightly."

Our change of habits toward more "nighttime living," brought about by the social and economic changes of shopping and entertainment centers and public gatherings, demands that we give increased attention to better street lighing.

Mr. Karns reported modern fluorescent tubes coupled with optical lenses can more than double the coefficient of utilization of the light available from existing fluorescent systems.

In such a system reflectors direct the light out and across the streets while lenses direct the light up and down the street.

Mercury lamps provide a source of light two to three times as efficient as incandescent lamps and last three to five times as long, he said.

Replacement of mercury lamps needs to be done only about every two years and cleaning costs can be cut considerably by having the optical system sealed.

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