

A fish tale

Live barracuda don't generally attack humans, but dead ones do in the form of a toxin in their bodies that when ingested by humans can cause symptoms such as diarrhea, vomiting, muscle pain and confusion of cold and hot. The problem is so serious that the City of Miami now prohibits the sale of barracuda.

The toxin also can occur in such popular eating fish as grouper and snapper caught in the warm waters off Miami. As many as five of every 10,000 persons in areas where the fish are eaten may be affected, according to an article in the July 18 *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*.

The poison is not a result of poor preparation or handling, but is believed to come from algae and one-celled organisms preyed on by small herbivorous fish that are then eaten by large carnivorous fish. Put loosely, what is causing the problem is what was eaten by what you ate before you ate it. The toxin is not destroyed by cooking or freezing and does not reveal itself to the innocent diner by taste or smell. But that doesn't mean you should toss overboard the next grouper you catch. An editorial in *JAMA* notes that the disease occurs most often after the ingestion of large fish, so let the big ones get away and hang on to the smaller snappers and groupers.

Sugar substitute causes diarrhea

Hexitols, a family of non-digestible sugars used in many "sugarfree" products, do more than sweeten. In excess amounts, hexitols such as sorbitol and mannitol can also cause diarrhea, says a report in the July 18 *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*.

Mario J.R. Ravry, an Atlanta internist, reports on a 29-year-old patient with diarrhea. The man chewed two packs of sugarless gum, two rolls of sugarless mints and two dietetic candy bars each day, for a total of about 50 grams of sorbitol. When he stopped eating the dietetic food, the diarrhea stopped.

Sorbitol's ability to cause diarrhea is well-established — it is used medically in much larger amounts to induce diarrhea—but Ravry suspects that if doctors looked more carefully, they'd find more cases of hexitol-caused diarrhea.

And while for his patient the diarrhea was no more than uncomfortable, persons with angina, diabetes, kidney problems or other illnesses who consume large quantities of hexitols risk serious medical consequences, he warns.

Genes pinpointed on chromosomes

Genes that code for the production of insulin, growth hormone and chorionic somatomotropin have been traced to specific chromosomes, according to two reports from a research group at the University of California at San Francisco and the Roswell Park Memorial Institute in Buffalo.

The gene coding for insulin is part of chromosome 11, report the researchers in the July 3 *NATURE*. The scientists analyzed cultures of fused mouse-human cells for the presence of specific human chromosomes and insulin, and found that the insulin-coding fragment coincided in all cases with chromosome 11.

The finding may have clinical implications, says report author David Owerbach. "Now we can look at the gene itself, to see if we can correlate the presence of different forms with maturity-onset diabetes." If the abnormality can be associated with the disease, persons at risk could be identified and warned to be careful about their sugar intake, he says.

In the July 11 *SCIENCE*, some of the same researchers report finding genes for growth hormone, chorionic somatomotropin and a growth hormone-like gene closely grouped on chromosome 17.

Frothy debate over BEIR settles some

"A profound ideological difference" over methods for estimating the risk that persons receiving whole-body exposure to low levels of low "linear energy transfer" radiation (primarily X-rays and gamma rays) would develop cancer held up publication of a National Research Council report—known as BEIR III—for more than a year. Released this week, "Effects on Populations of Exposure to Low Levels of Ionizing Radiation," differs substantively from the draft issued last May (SN: 5/12/79, p. 310) only in the chapter on somatic (not genetically transferable) effects.

The dispute came to light when five of the BEIR (Biological Effects of Ionizing Radiation) Committee members issued a dissenting paper at the draft report's unveiling. A paucity of data for the very lowest exposure range made adoption of a linear dose-response model arbitrary, they claimed. While the new version favors a linear-quadratic model for estimating cancer risk, actual numerical risk estimates remain about the same. Two committee members, including chairman Edward Radford, still dissent from the revised report.

Of gorillas and agriculture

As neighbors, mountain gorillas prefer shifting cultivators to settled farmers. (The former are those frequently maligned tribes or families, often African, who farm an area until soil productivity falls, then move on to better ground.) Alan Goodall, who heads a World Wildlife Fund conservation and management project in Eastern Zaire, where gorillas still thrive, has found that selective logging and shifting cultivation create a mosaic forest habitat gorillas relish — patches of dense, fast-growing trees within dense jungles. For their preservation, Goodall recommends turning the few remaining gorilla strongholds into managed reserves, then putting out the welcome mat to responsible shifting cultivators — those who don't engage in excessive and repeated slash-and-burn tactics.

News notes

- A call for written comments "about any concerns" the public has over exposures to low-level microwave radiation that would result if the proposed system of 60 solar-power satellites (SN: 4/22/78, p. 256) ever gets off the ground has been issued by the National Research Council of the National Academy of Sciences. Comments must be submitted by September 5 to NAS's Satellite Power Systems Committee in Washington. It is also seeking public reaction to findings of a by-invitation-only workshop it held in July. Workshop summaries will be published soon.

- The \$10 billion investment in advanced municipal wastewater treatment estimated necessary by the year 2000 (according to the Environmental Protection Agency) "may have little effect on water quality" and represent unnecessary and unrealistic costs to the nation, says the General Accounting Office in a report released last month. After extensive discussions with state and federal water-quality officials and a review of scientific studies on water quality, "GAO found that advanced waste-treatment — which removes some pollutants left after secondary treatment — with few exceptions, may not be justified."

- The UPGRADE computer system for analyzing environmental data — formerly for use by federal agencies only — is now available to the public. Accessible in all major U.S. cities by phone, it offers the ability to assess relationships and trends between factors such as pollution and health or natural resources. Software developed by the President's Council on Environmental Quality provides interactive, English-language instructions on using the system and the ability to generate graphs and statistical displays. CEQ, in Washington, offers details.