

From Polluted Water

Effects Are Cumulative

U.S. Inviting Death by Poison

The Remedies Must Come Swiftly

EDITOR'S NOTE: Most Americans take it for granted that when they turn the tap, they'll get a cool, clear, safe drink of water. It has been so for generations, but it may not be so forever. The nation—say some legislators and a horde of Public Health Service scientists—is rapidly poisoning its drinking water.

By HUGH A. MULLIGAN Of the Associated Press "Water, water everywhere, And all the boards did shrink; Water, water everywhere, Nor any drop to drink."

Such was the curse of the Ancient Mariner. Posted over every bridge and dam, on every river and stream, it one day could serve as an epitaph for a civilization.

Unless we stop poisoning our waters with chemical bug killers and quick sudsing detergents, with radioactive wastes and virus-bearing slaughter house remains, with untreated municipal and industrial sewage, with oil well brine and pulp-mill acids and tons of silt from road and building projects; unless we reduce these and other hazardous contaminants, the curse could fall on our land in our lifetime.

And the boards that will shrink may well be the props holding up the entire free world. Here indeed is a case where more truth than poetry is involved.

Buried in Its Own Garbage

For want of a glass of clear water, the continent that bears Niagara's restless roar and sang of the mighty Mississippi and the wide Missouri and drew its life blood from the Great Lakes, that incredible reservoir holding more than one-third of the world's fresh water supply, that continent, that civilization could die of thirst in the midst of plenty.

And the nation that Khrushchev once threatened to bury might well bury itself—in glory, ironically, by its own hand.

The evidence is already there: Appalling, irrefutable, increasing every day. President Kennedy has called the situation "a national disgrace."

Drinking Water Radioactive

"Pollution of our country's rivers and streams," he told Congress in his message on natural resources, "has reached alarming proportions."

A housewife in Babylon, Long Island, draws a glass of water with a two-inch head of froth. It looks more like a glass of beer, but it has an oily, fishy taste.

Towns along the Animas River in Colorado and New Mexico, where a uranium mill dumps its wastes, learn their drinking water contains 40 to 160 per cent more than maximum safety levels of radioactivity.

Epidemiologists trace an outbreak of hepatitis along the eastern seaboard to oysters raked from the Gulf of Mexico and to clams dug in New Jersey's Raritan Bay and along the Connecticut coast.

Rensselaer, N. Y., orders its residents to boil all drinking water as the bacteria count soars in its water mains from pollution in the Hudson River.

Faced with drought conditions in the Neosho River, Chanute, Kan., attempts to recycle water from its sewage treatment plant directly into its purification

plant. The water meets acceptable health standards, but foam rises to the top of every glass, piles up in 15-foot high billows at the water works and blows across town like snow.

Freighters passing through Chicago's ship and sanitary canal churn up so much suds that sprays are employed to break up the billows. On Mondays, when Chicago housewives discharge tons of detergents with the water from the weekly wash, the frothing is noticeably worse.

A Flow of 'Lentil Soup'

Gas bubbles rise from the sludge at the bottom of the Missouri River below Sioux City, where a packing house unloads tons of animal entrails. Further downstream, Omaha awaits the river's arrival for drinking water.

Along a 40-mile stretch of Wisconsin's Fox River, where 3 1/2 paper and pulp mills hug the banks, the water flows with the color and consistency of lentil soup. And the great salmon runs are diminished in Puget Sound, another pulp mill area.

A chemical plant near Austin, Tex., discharges its wastes in the Colorado River. For 140 miles downstream, all fish die. Paterson, N. J., switch to emergency water reserves when the Passaic River flows up a cargo of dead fish. The verdict is poison by pollution.

A similar verdict is returned for thousands of dead fish found floating in tributaries of the Tennessee River, where valley farmers used DDT to rid their cotton of boll weevils.

Youngstown, Ohio, steel mills using the Mahoning River for cooling processes raise the temperature of the river so high in summer that not only is all fish life eliminated but the water is rendered unfit for anything—even for cooling purposes.

Typhoid fever breaks out in Keene, N. H. Hepatitis cases set a new record. Leptospirosis, better known as "sewer worker's fever," suddenly crops up in the Missouri River Valley. Health departments in a number of cities note an upsurge in diarrhea, intestinal disorders and stomach sicknesses. In each case, water is the virus carrier.

These are not Orwellian nightmares of some distant day. All of these incidences of pollution actually happened in recent years. Some already have been corrected. Some are up for action in Federal enforcement cases. Some continue unabated.

New Ones Coming

The point is that pollution problems like these can and do happen to America's rivers and streams every day. New and worse ones are in store in the future as our population booms and industry flourishes.

Warns Sen. Robert S. Kerr, chairman of the U.S. Senate's Select Committee on National Water Resources, which made a monumental two-year study of pollution dangers:

"Although too many people seem unworried, their drinking water is rapidly being poisoned."

Says Gordon McCallum, chief of the U.S. Public Health Service's Division of Water Supply and Pollution Control:

"In this age of water, drinking water is less palatable as more and more chemicals are added to rid it of pollutants. In many states miles of streams, bays and estuaries are lost each year to fish and wildlife, to fishing and swimming because of unsightly, smelly and actually

dangerous sewage and industrial wastes clogging the water."

Says Dr. Luther L. Terry, the U.S. surgeon general:

"We are by no means sure that at least some viruses are not slipping through our present water purification and disinfection processes and entering our water mains. Hepatitis may be an example."

Clean water is absolutely essential to America's continued existence as a nation and a civilization. We drink it, bath in it, wash with it, cook with it, fish and swim in it. It irrigates our crops, powers our plants, refines our products, produces our electricity.

Re-Used Water

Despite a favorable annual rainfall, our available water has not increased appreciably since Columbus landed. Its use and abuse has — drastically. For well over a half century, we have been using our great rivers — the Mississippi, the Missouri, the Ohio, the Colorado, the Columbia, the Hudson — as little more than open sewers. In that time, our population has doubled and the pollution load in our waters tripled.

The greatest gains in population and industry are yet to come. We now use about half the water we can trap. By 1980, when according to the Senate Select Committee's figures our population will jump to 244 million, we will be using it all. By the year 2,000, with a population of 329 million, demand will triple. Water reuse will be a necessary way of life.

Today about 40 per cent of our population drink re-used water: Water that has been through the sewers of some other city before purification. For instance, Pittsburgh's sewage plants empty into the Ohio River. Cincinnati takes the water out for drinking purposes and in turn dumps its sewage back in the river, Louisville repeats the process, and so on down the river. Some Ohio River towns use water that has been flushed down the sewers of 10 other communities.

A Vastly Complicated Problem

Water is our only major reusable resource. It can't be duplicated. It has no substitute. It can be used over and over again. The problem of keeping our rivers clean enough for this sort of constant reuse has been vastly complicated by the wonders of modern living.

Fish, plants, molds and other stream life can break down most impurities, but they can't seem to do a thing with household detergents, insecticides, plastics, radioactive wastes and the thousands of new chemicals that have come along in recent years. Neither can most sewage treatment plants. The result is that our streams and rivers are being clogged with a weird as-

sortment of exotic substances that defy treatment and wind up in our drinking glass.

Last year housewives used four billion pounds of detergents on the family dishes and laundry, flushing the suds down the drain to the nearest waterway. Aside from gumming up waterworks machinery, there is little evidence so far of harmful human effects, but researchers at the Public Health Service's Taft Sanitary Engineering Laboratories in Cincinnati are keeping a close watch.

Animal Deaths Increase

Studies at the Taft labs by Aquatic biologist E. W. Surber of the effect of alkyl benze sulfonate (ABS), the compound used in most detergents, show a dose of 16 to 32 parts soap to a million parts of water eliminates the May fly, a food source for sports fish, and a 10-part dose reduces shrimp and crawfish life. Similar studies are now being made on fish and birds.

Agricultural chemicals pose an even greater problem. Without them, we would never have the bountiful harvests we now enjoy. And yet there is mounting evidence that these savors of crops may be subtle slayers.

Last year 94 million acres of U.S. farm and forest land were treated with four billion pounds of insecticides, pesticides, weed and fungi killers. Every rainstorm washed some of these synthetics into our rivers and streams. Some seeped down to ground water. Since 1944, when DDT was introduced, there have been increasing cases of bird and fish deaths. These are the immediate effects of indiscriminate spraying. Long range effects are harder to gauge. We know now that long after the poison passes through the water, it lives on in plant, fish and bird life, increasing in concentration.

What About Human Beings?

Clear Lake, Calif., is a classic example. The 19-mile long lake was sprayed with a weak solution of insecticide (roughly one part toxicant to 50 to 100 mil-

lion parts water) to eliminate a pesky gnat that annoyed fishermen. Since no adverse effects were reported, the treatment was repeated five years later. That winter, 100 Western Grebes, a beautiful bird, were found dead in the lake. In spring the fish died, along with more birds. An autopsy showed the birds had built up a concentration of 1,600 parts poison within their systems. For fish, the concentration had jumped to 2,500 parts, an increase of 250,000 times the original dosage. The lake water showed no poison at all.

Could there be a similar build-up within humans? The answer is we don't know, says Murray Stein, chief of the enforcement branch of the Division of Water Supply and Pollution Control. "We're not certain what the combined effect of some of these toxicants is. Many are stored up within the body. It could be that they will have some sort of long range disastrous effect, like thalidomide. We just don't know."

To say that these new chemicals and synthetics should be outlawed because they upset the balance of nature is a gross oversimplification. Many conservationists agree with secretary Maurice Goddard of Pennsylvania's Department of Forests and Waters that man "is of necessity a polluter of his environment." Every time he plows a field, drains a swamp, harnesses a river, irrigates a desert, he upsets the balance of nature. It's too late for him to go back living in the trees. Progress has become his natural habitat.

Long, Uphill Struggle

Or, as secretary Goddard says, "put simply our job is to

see that we always know what we are doing and that our short range interests do not sabotage our long range goals."

The Encouraging Side

Alerting Congress to the menace was, in Blatnik's words, "a forlorn, depressing experience. Schedule a hearing and three people would show up. Leaders in both parties grumbled about 'that stinking sewer bill' and couldn't see what all the shouting was about."

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storage reservoirs to maintain water quality in dry seasons. Dark as the pollution picture has been and difficult as the future looks with our predicted population and industrial explosion, there is an encouraging side. "We will get to the Moon before we solve our sewage problems," says Rep. Blatnik, "but at least we have made a start on the problem."

Detergent Count to Be Added

The Public Health Service maintains a network of 125 quality control stations across the country to check conditions in major rivers and streams. Volunteer workers row out in boats, walk along beaches and piers, take samples from beneath bridges and dams to test for poisons, viruses, bacteria and radiation. Soon a detergent count will be added to the data gathered from the various waterways and processed by computers in Cincinnati so significant changes can be spotted rapidly.

Enforcement actions have been brought against 250 cities, including New York, Pittsburgh, Portland, Ore., and the two Kansas cities, and against a like number of industries, including such giants as Armour, Swift & Co., Monsanto and Olin Mathieson, forcing a clean-up of 4,000 miles of river and stream.

Some Success Stories

Despite the increasing complexity of pollutants, a growing public awareness has led to a number of individual success stories. The Ohio River, although still plagued with taste and odor troubles, begins its run into the Mississippi a good deal cleaner than a decade ago, thanks to treatment and purification plants in 80 per cent of

the towns along its banks. Salmon runs have been restored in Oregon's Willamette River. Neighboring states are banding together to clean up the Arkansas, the Colorado, the Delaware and Susquehanna rivers. Engineers hope the Potomac will be clean enough to swim in by 1966, even if health officials are adopting a "you first" attitude.

Idiocy of Neglect

An inspiring example of what can be done is Pennsylvania's Schuylkill River. Ten years ago, it gurgled and bubbled with coal mine silt. Today it runs clean.

But until such a scientific breakthrough becomes economically feasible, our main pollution concern will be as simple and elusive as drawing a clean glass of water from the kitchen tap. The fact that most rivers can be salvaged with available technology only points up the irony and the idiocy of our neglect.

The proverbial babbling brook is babbling out a warning to all of us.

As Sen. Kerr told a banquet audience recently:

"I believe that if most of you got an analysis of the water you drink, you would be shocked and uneasy. The result might even drive you to drink—but not water."

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