

# Bad Water vs. Good Health

BY LOUIS EDWARD THEISS

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HOW grossly inconsistent we are! When, for the sake of gain, a Missouri physician administered typhoid germs to some of his relatives, thereby causing six or eight illnesses and one death, we stood aghast, called the physician a murderer, and dropped him into prison for life. And when, during the Spanish-American war, some twenty-five hundred of the boys in khaki were needlessly slaughtered, many of them by typhoid, we denounced as scoundrel terms those officials whose carelessness and incompetency caused the tragedy. But we hear with absolute indifference the statement that yearly the pollution of our water sources needlessly causes more than 125,000 typhoid illnesses and 15,000 deaths. We pay no heed to the fact that year after year in the United States seven times as many people are needlessly ill of typhoid fever as there were soldiers wounded in the battle of Gettysburg, and three times as many persons needlessly die from typhoid fever as met death in that tragic struggle.

It is the old, old story of the mote and the beam. We do not see the enormity of this terrible wrong, because we are ourselves the authors of it. We are just as responsible for those 15,000 yearly deaths as our army officers were for the tragedies in our Spanish war camps. And our motive is just as mercenary as was that of the physician who gave typhoid germs to gain a heritage. For we, too, are actuated by financial reasons: we are unwilling to pay the price of water purification. So we continue to smite the rock of a polluted water supply and there comes forth sewage. And when our children ask for water we give them poison.

To be suitable—that is, to be potable and fit for domestic use—water must be practically free from pathogenic germs, color, sediment, odor, taste and turbidity. Hardness causes laundering difficult. Iron spoils linen. Carbonic-acid gas turns water pipes brown. Algae make water taste bad. Water supplies differ widely as human beings. "Pure, wholesome water," the term set forth in so many water contracts, is, then, wholly a relative term. Really pure water is a rare thing, because there hardly exists in nature water that does not contain some foreign ingredients. Not all of these are harmful, however, so that water that is fit to drink is as common as really pure water is rare. So that, generally speaking, the question of a good water supply is merely a question of being willing to spend the money necessary to obtain it. Hence there ought to be no community in the United States that does not have a plentiful supply of perfectly wholesome water.

Anything but wholesome, however, is the quality of the water that all too often we actually get. Dr. F. W. Shumway, reporting on water conditions in Michigan, says in part: "Of the ninety-nine replies received, 79 per cent reported the water as good, 11 per cent as fair, and 10 per cent as of bad quality. . . . The replies from 124 localities indicate that in 48 per cent of these localities the public water supplies are in danger of contamination." Dr. Q. O. Sutherland, discussing water conditions in Wisconsin, says that in his state "nearly every stream used for any kind of supply is contaminated to some extent by sewage." Health Commissioner G. A. Bading, speaking of Milwaukee's water supply, says that most of the city's water comes from Lake Michigan, but that there are still 5,000 wells in existence, 91 per cent of which have been shown to be contaminated. Lake Michigan is the source of water for many other towns near it. One of the tributaries of Lake Michigan is the Grand Calumet river. And here is what Health Commissioner W. A. Evans, of Chicago, has to say of the Grand Calumet: "The greater part of the sewage from the business and residential districts (of Hammond, Ind.) empties into the Grand Calumet, which, as it flows through Hammond, is almost unspeakably vile and putrescent. And this stream empties into the lake only 3,000 feet from the waterworks intake." Dr. Edward Bartow, analyzing conditions in Illinois, says that "an examination of the untreated lake water shows that unsatisfactory water is frequently delivered at Evanston, Lake Forest, Glenview, North Chicago, Waukegan, Wilmette and Winnetka. . . . And that the water supplies of all cities which use unfiltered lake water are shown to be impure at times." And this condition of the water supply may be taken as typical of the entire country. A very considerable proportion of our drinking water is absolutely unfit for human consumption.

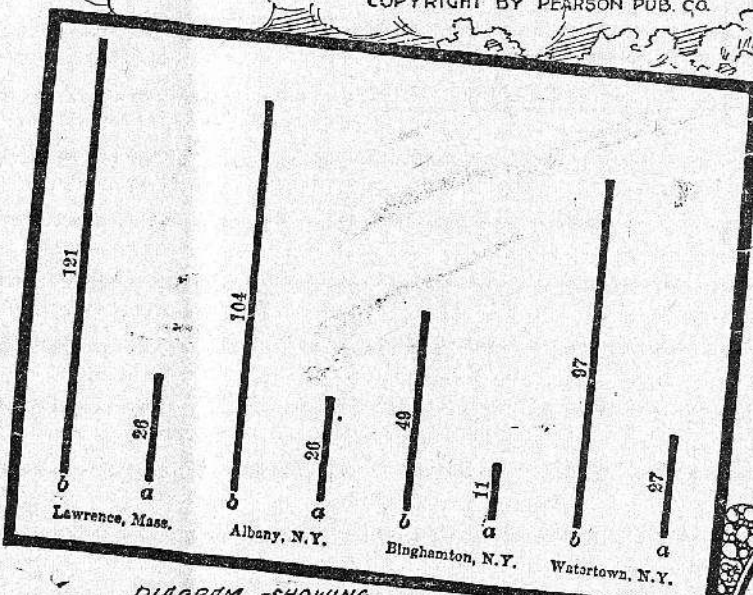


DIAGRAM SHOWING HOW SUPPLYING A CITY WITH GOOD WATER LESSENS SICKNESS AND DEATH

is a string of good-sized towns—Plymouth, Wilkes-Barre, Wyoming, Bloomsburg, Nanticoke, and others, all of which empty sewage into the river, and a number of which take their drinking water direct from the river. Wilkes-Barre does, and its pumping station is on an island in the river. When the stream overflows, as it does every spring, the pumpwell is flooded with the foulest of water—the rolled river flow containing suspended sewage and the reeking, sulphurous waste of coal mines. They make an effort to clean this pumpwell. Perhaps they succeed and perhaps they do not. The point is that the expenditure of a little money would protect the pumping station from inundation.

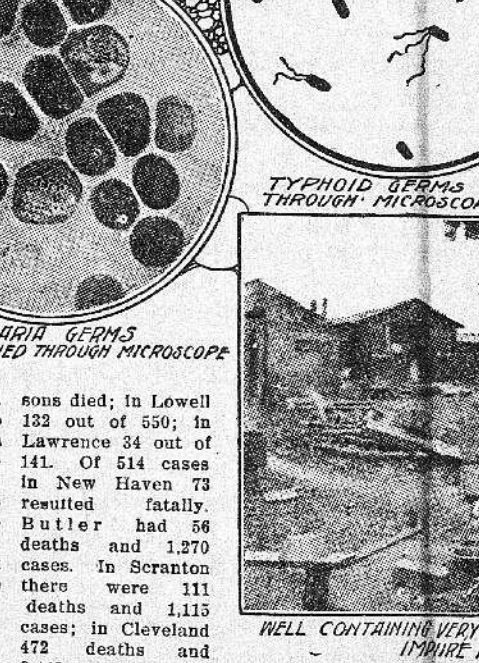
New York state has the same tale of pollution to tell. Albany, Cohoes, Dunkirk, Lockport, Niagara Falls, Ogdensburg, Oswego, Tonawanda, Watervliet, and other cities drink river water that is grossly polluted by the sewage of cities farther upstream. And I have seen dozens of photographs of filthy cowsheds and barns, the drainage from which polluted the watershed for New York City.

In Illinois fifteen towns north of Chicago empty sewage into Lake Michigan, and nine of them draw their drinking water back from the lake. And what is true of Pennsylvania, and New York, and Illinois, is also true of other states. Particularly is it true of the south. From the Atlantic to the Pacific, from the Gulf to the Lakes, our people are needlessly drinking polluted water.

What is worse, water pollution is on the increase. "With the rapid growth of our population," says Alec H. Seymour, Secretary of the New York State Board of Health, in a recent bulletin, "the defilement of our streams also increases. Some of our finest streams and lakes are being rendered unavailable for boating, bathing, fishing, and domestic use. They are of no value except as cesspools."

Typhoid fever one cannot contract without taking into one's system germs that have been voided by a typhoid patient. These germs get into the body through the mouth, pass through the stomach into the intestines, and are carried through the body by the blood. They leave the body through the bowels and in the urine. Sometimes infection is carried by contact or through vegetables and milk; but the common channel of typhoid transmission is through our water supply. "In order that germs could find entrance into drinking water," to quote Dr. Howe again, "there must have been carelessness in caring for the body wastes of previous victims." And this carelessness, as we have seen, consists for the most part in allowing our water sources to be polluted with sewage.

In consequence, typhoid, winter cholera, and diarrhoea are most prevalent along water courses used for both sewage disposal and water supply. Conversely the typhoid rate of any town continuously using a given water supply fairly represents the sanitary quality of that water supply.



TYPHOID GERMS AS SEEN THROUGH MICROSCOPE

sons died; in Lowell 132 out of 550; in Lawrence 34 out of 141. Of 514 cases in New Haven 73 resulted fatally. Butler had 56 deaths and 1,270 cases. In Scranton there were 111 deaths and 1,115 cases; in Cleveland 472 deaths and 3,443 cases; and in Philadelphia 1,063 deaths and 9,721 cases. In every case the death rate has been terrible, rising, in many instances, to several hundred per 100,000 population.

The U. S. Census Bureau report for 1908 shows 11,375 typhoid deaths in the registration area, and for 1909 there were 10,722 deaths—an average of about 11,000 a year. The registration area includes only 61 per cent of the total population, and does not include the South, where the typhoid rate is very high. In ten southern states the average rate has been 79. "Twenty thousand deaths a year," says Dr. William Guilfoyle, Registrar of Vital Statistics of New York City, "would be a very conservative estimate of the total annual typhoid mortality." Certainly this is a conservative estimate, for the complete census of 1900 showed 35,379 typhoid deaths that year. For the sake of being conservative, however, let us take Dr. Guilfoyle's figures. They are large enough.

The dead, it has long been held, amount to not more than one-tenth of the total number of those stricken. "But recent studies," to quote Mr. George C. Whipple, "indicate only one death in 15 or 18 cases." If we allow one death for every twelve cases—an estimate that Dr. Guilfoyle says is entirely within the mark—we shall have the tremendous annual total of about 250,000 cases. Think of it—a quarter of a million people yearly stricken with typhoid!

Recall the largest parade you ever saw—say one with 25,000 troops in line—and think how those serried ranks marched past hour after hour until your eye grew tired of watching them. Then multiply that parade by ten, and imagine what an enormous army 250,000 persons would make. That is exactly the size of the army, recruited anew every year, that this country forces to fight—typhoid fever.

Like any other army, this army, too, costs money. In this case, though, the cost is in the form of economic loss. Statistics compiled by the Connecticut Board of Health show that typhoid carries people off in the years of their greatest earning capacity, 41 per cent of the deaths occurring to persons between the ages of 20 and 40, and 60 per cent to persons between 10 and 40.

Take Pittsburg, where, as we have seen, the typhoid rate was 127 per 100,000 population. Pittsburg is a city with a population in excess of 350,000. Hence its annual death toll from typhoid must have amounted to 3 1/4 times 127, or something like 444. At \$6,000 a life, this death toll will cost Pittsburg \$2,664,000 a year, or \$26,640,000 every decade. And the loss to the entire country, figuring the typhoid deaths at 20,000, reaches the astounding total of \$120,000,000 a year, or \$1,200,000,000 every decade.

This estimate, however, is without question too conservative. Mr. Allen Hazen, an eminent American engineer, says in his book, "Clean Water and How to Get It," that the reduction in the number of deaths in five cities, brought about through water purification, amounted to 440. Improved general sanitary conditions, he says, were responsible for 137 of the 440 decrease. The typhoid reduction amounted to only 71. The reduction in the number of deaths from other causes amounted to 232—three times the typhoid reduction. If this ratio of deaths due to water holds good generally, then our typhoid deaths are only a small part of the deaths due to bad water.

That three-quarters of the typhoid deaths are due to water Mr. Hazen himself declares. That three-quarters is referred to in the first paragraph of this article as the "fifteen thousand needlessly slaughtered each year by polluted water." Because, to quote Mr. Hazen, "three-quarters of the typhoid deaths could be prevented, and thereby could be stopped this needless loss of vital capital that is going on year after year."

The way to save that three-quarters, then, is by being careful, which in this case means by providing pure water. As Mr. Hazen puts it, "By filtering all the water supplies of the important cities of the country, and by instituting other necessary sanitary reforms."

As proof of this let us see what has happened to the death rate in those localities that have purified their water supplies. The typhoid rate of Rensselaer for ten years averaged 61.9 per 100,000 population. In 1908, after the water was filtered, it fell to 30. Hudson changed from Hudson river water to a pure supply, and the rate fell from 59.2—the ten-year average—to 17.1. Poughkeepsie's rate used to average 112. In 1907 the filtration plant was improved, and the rate fell to 34.5. In Albany the ten-year average before filtration was 88.8. Since filtration the ten-year average has been 22.2.

In Pennsylvania, Pittsburg had a typhoid rate, according to Health Director E. R. Walters, that from 1901 to 1907 averaged 127. In 1907 the city spent \$6,500,000 for a filter system. During the three years since, the typhoid rate has been 31.9—a decrease of more than 75 per cent.

Chicago affords an even more striking example of the benefit of purifying the water supply. In 1891, Chicago's typhoid rate was 173.8 per 100,000, the highest average typhoid rate in the civilized world. Chicago purified its water by building its wonderful drainage canal to keep its sewage out of Lake Michigan. In 1908 Chicago's typhoid rate was 15.6—a reduction of 91 per cent.

## ZANZIBAR PARROT IS A PROFANE LINGUIST

BIRD SWORE LOUDLY IN ARABIC BUT OWNER DECLINED TO WRING HIS NECK.

New York.—All Ben Ding, a Zanzibar parrot, skilled beyond belief in the shrill articulation of Turkish, Arabian, Moorish, French, German and Spanish profanity, was responsible for the arraignment in the Tombs police court of his owner, Selim Hamad, a Byzantine sailor.

Selim Hamad is a young giant and he was charged by Arem Sultan, a slim, narrow chested Arab, who lives at 37 Washington street, with performing a wild Dervish dance on his chest after endeavoring to carve initials in his neck. Arem Sultan had barely survived the ordeal and when he appeared before Magistrate Krotel to press the charge there was that in his appearance to suggest that an entire caravan had romped over him.

Through a tiny interstice in the bandages that wreathed his countenance he told an amazing story of the profanity of All Ben Ding and how the bird had brought him into unequal encounter with Selim Hamad.

For several days, the Arab said, he had heard the name of his ancestors reviled in his native tongue. He knew there were no Arabs in Washington street and he could not for the life of him puzzle out who was cursing him. He searched the house in which he was living from top to bottom, but could not locate the voice.

As he set out for a near by restaurant Sultan was startled by the exclamation: "Dog of an Arab, eat the dust of your thieving fathers!" Sultan stopped short and his blood caught fire. The honor of the tribe of Sultan had been traditional on the desert for centuries. To be called a dog was the vilest of epithets.

Sultan had halted in front of 35 Washington street and he had only to wait another instant before the same voice cried out an oath that caused the young Arab to turn pale and tremble. This bit of profanity was followed by the phrase: "The tribe of Sultan is accursed by the moon, the stars and the dogfish that swim under the stars."

That was enough for the young Arab. He rushed into the doorway and up the stairs to the rooms occupied by Selim Hamad. The profane voice of All Ben Ding, the parrot, lured him on.

Sultan knocked at the door. Selim Hamad opened it, blocking the entrance with his giant bulk. Greatly enraged, Sultan demanded of Selim Hamad that he slay the vile bird before his eyes.

"He is bewitched of a thousand devils," Sultan said. "Kill him at once." "Pouff, little one!" replied Selim Hamad in fluent Arabic. "All Ben Ding is a wise bird and knows a dog of an Arab when he sees one." This was too much for the little Arab, and he hurled himself upon the huge sailor, with the results already told.

## HORSES BALK AT DEAD MAN

Drivers Then Learn of Veteran's Suicide in Barn, Which Animals Refused to Enter.

Cynwyd, Pa.—John H. Titlow, seventy-one years old, an inmate of the Soldiers' home at Hampton Roads, and who was on a visit to friends in this vicinity, committed suicide by hanging in the barn of John Duffy, near here.

William H. Duffy and William L. Downes were engaged in hauling hay to the barn, and about three o'clock, when they attempted to drive into the structure with a loaded wagon, the horses balked and refused to enter. Investigating the cause of the horses' stubbornness, Duffy and Downes found the body of the aged war veteran dangling from a rope fastened to the rafters directly in the path of the horses.



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WOULDN'T ANY WOMAN?



Mollie—She's great on adopting new fads. Jack—But she objects to new wrinkles.

## Not Sufficiently Eager.

A little miss of five years was under the ban of disobedience. She had been told to put away her playthings, as it was near bed time. She did not obey the demand, and, when forced to do so, gave way to a petulant display of temper. Her father, who was up stairs, heard the commotion, and, being made acquainted with the cause, summoned the child to his presence. Irma started to the stairs, but suddenly made a turn, dashed along the hall, and out of the house. Of course she was soon captured, but her excitement was so great that she was put to bed at once. Mother's effort soothed the child and then she was asked: "Why did you run away when your father called you?" The reply came promptly enough: "You don't suppose, mamma, that I wanted a whipping bad enough to go upstairs after it?"

## A Crime.

"What do you think of the plot?" asked the theater manager. "That isn't a plot," replied the man who had paid two dollars to see the show. "That's a conspiracy."

A man's life can be no larger than the objects to which it is given.

## LUCKY MISTAKE.

Grocer Sent Pkg. of Postum and Opened the Eyes of the Family.

A lady writes from Brookline, Mass.: "A package of Postum was sent me one day by mistake."

"I notified the grocer, but finding that there was no coffee for breakfast next morning I prepared some of the Postum, following the directions very carefully."

"It was an immediate success in my family, and from that day we have used it constantly, parents and children, too—for my three rosy youngsters are allowed to drink it freely at breakfast and luncheon. They think it delicious, and I would have a mutiny on my hands should I omit the beloved beverage."

"My husband used to have a very delicate stomach while we were using coffee, but to our surprise his stomach has grown strong and entirely well since we quit coffee and have been on Postum."

"Noting the good effects in my family I wrote to my sister, who was a coffee toter, and after much persuasion got her to try Postum. "She was prejudiced against it at first, but when she presently found that all the ailments that coffee gave her left and she got well quickly she became and remains a thorough and enthusiastic Postum convert."

"Her nerves, which had become shattered by the use of coffee have grown healthy again, and today she is a new woman, thanks to Postum." Name given by Postum Co., Battle Creek, Mich., and the "cause why" will be found in the great little book, "The Road to Wellville," which comes in pkgs. Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.