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SILENT WARNING



Doctors Janabi and Amin barrelled down the two-lane road in their dusty white Peugeot toward the province of Kirkuk northeast of Baghdad. Amin was making good time. He had to if they were going to arrive at the clinic at a half-decent hour.

The scenery outside the car was barren and featureless. Janabi could not help but fill his mind with the unfolding events of the past few days and what might lie before them that evening. Never in his career as a physician had he faced anything so potentially serious, so unimaginably pervasive. If his suspicions were correct, history was being repeated. His call for action more than a decade before had gone unheeded. Hundreds - - perhaps thousands - - of Iraqis might have to pay with their lives for the mistakes of others. And it was all so easily preventable, so sickeningly unnecessary.



Dr. Janabi and his associates at the University of Baghdad's Department of Medicine learned of the situation only five days before when they received an urgent call from the physician at a medical clinic in the Kurdish province of Kirkuk. The rural doctor, learned Janabi, was swamped with dozens of patients from local farming communities. Nearly all had come in during the previous week. Most of the people were in very serious condition, some were critical. They were suffering from a wide range of neurological disorders with symptoms the young country doctor had never seen. Patients complained of sensory and motor losses, their hands and feet feeling numb and lifeless, their motions clumsy and stumbling. Those who could still speak were strangely irritable and anxious. Others could not walk, and a few were losing their sight. Some had even lost their hearing. The worst cases were comatose and on the verge of death. The doctor believed he was dealing with an epidemic of encephalitis, but Dr. Janabi suspected otherwise. If he were correct, and he sincerely hoped that he was not, they were facing possibly the largest mass poisoning in history. It was certainly unintentional, yet all so avoidable.

The call from the country doctor five days before was just the beginning. The University had fielded hundreds of telephone calls from nearly every province in Iraq in the days following the young man's call for assistance. Four hundred new cases were appearing at hospitals around the country each day; they were principally from the central areas of Babylon and Qadissiya and the northern Kurdish provinces. The common denominator, they had determined, was that all of these victims were farmers or members of large farming families. And, like other Iraqis, they ate a great deal of bread.



There would be only one thing directly responsible for the disease, reasoned Janabi. But as they continued the long drive to Kirkuk, he mulled over the odd set of circumstances that had worked together to bring about this catastrophe. First, as strange as it seemed, one had to consider the harsh weather during the past two years.

It had been brutally dry for the last couple of summers and the farming areas, especially those up north, were affected most severely. Supplies of grain, particularly wheat, ran dangerously low throughout the country. Some rural farmers, he was told, exhausted their supplies of wheat and dipped into their reserves of valuable seed grain to feed their families. They addressed their immediate problems, but only at the risk of not having enough seed to plant the next crop. It had been a serious situation, but fortunately (or unfortunately, as time would tell), the Ministry of Health had stepped in to tackle the situation. And that, most certainly, was the second important element of the story.

Janabi knew now that the Iraqi Government and Cargill Corporation of Minneapolis, Minnesota struck a deal over a year before, in 1970, for a large purchase of seed grain. The shipment of 73,201 metric tons of wheat and 22,262 tons of barley was delivered to Iraq from North America and a few other sources during the fall of 1971. It arrived at the port of Basra in two large shipments between September 16 and October 15, 1971 and was then trucked to regional distribution centers throughout the country, but mostly north to the Kurdish provinces of Ninevah, Arbil, and Kirkuk where it was needed most urgently. The shipments would make it possible for rural farmers to grow their own crops of wheat and barley and to feed their families and

animals with the grain they grew. It was enough seed grain, Janabi had recently learned, to meet the planting requirements of all of Iraq for the year, but especially for the crop of winter wheat that needed to be sown in October, November, and early December, before the start of the winter rains. As these things often go, however, the grain was not distributed as quickly as planned, and by the time it made it to the farmers in November and December many had completed planting with their own supplies of seed. Some of the newly imported seed was planted, but a huge portion remained unused.

Dr. Amin continued driving at a blistering pace toward the rolling mountains ahead. The sun hung just on the horizon off to their left. It would soon be dark, and traffic on the rural highway was beginning to thin. Janabi guessed that they would be the only ones still on the road when they arrived at the clinic late that night. It would be at least another three or four hours. He appreciated not having to drive; it was the first time in days that he had had the chance to sort out his thoughts.

Yesterday he heard that the Iraqi Ministry of Health might have specified that the shipment of grain be treated with alkylmercury fungicide when they made the deal with Cargill the year before. It was one of a number of substances commonly applied to seed grain to inhibit spoilage. As with other seed dressings, however, treatment with alkylmercury rendered the grain unfit for consumption; and, accordingly, it had been dyed red as a warning of its toxicity. As an extra precaution, a large square tag was stitched into the seam of each large sack of grain. The label contained a strong warning that the grain could not be consumed or milled into flour, but it was printed in English, not Arabic. A large image of a skull and crossbones sat above the text to emphasize the point.¹

¹Cargill, like other grain dealers in the United States, could not sell

But the Kurdish farmers, not surprisingly, did not read English. Most, in fact, did not read Arabic. And the large skull and crossbones symbol on each tag was nothing more than a peculiar piece of art work. Unlike Westerners, the symbol did not connote death or danger to the Kurdish peasants. It most definitely did not warn them that the grain was exceedingly poisonous.

The fourth and certainly most tragic part of the story, knew Janabi, was that thousands upon thousands of Iraqis, mostly Kurds, had possibly eaten the treated grain in one form or another. He had been informed that peasant women, while their husbands were out working in the fields, washed the grain in large bowls to remove the red dye. Some farmers were told at the distribution centers that the grain was chemically treated, and the peasants reasoned that washing the red color from the seed removed the chemical as well. But the alkylmercury was not physically bound with the dye. It remained behind on the small seeds after the red colorant was rinsed away. Neither the dye nor the alkylmercury had an intolerable or even noticeable

this type of dressed seed in the U.S. as a result of recent action by federal courts and the newly enacted Federal Environmental Pesticide Control Act of 1971 prohibiting interstate shipment of seed treated with alkylmercury fungicide. American officials, especially their counterparts in Sweden, had become aware of the hazards of the alkylmercurial fungicide seed dressing after accidental poisonings of farmers in Sweden, Guatemala, Russia, and Pakistan, and in Iraq on two separate occasions during the previous 20 years. All of these cases involved rural farmers either feeding the seed grain to animals, which were later consumed, or grinding the seed into wheat for bread. The highly publicized environmental and health catastrophe in Minamata Bay and Niigata in Japan, although unrelated to treated seed, had also added to the concern about the growing presence of methylmercury in the environment.

taste or odor that might dissuade a person or animal from eating it.

Many farmers, some before and some after rinsing the dye off the seed, fed the grain to chickens and goats to test its safety. But organic mercury causes no visible symptoms until it accumulates and reaches a critical level in the body. The farmers, Janabi reasoned, had continued to feed their animals for weeks on end with no ill effects, unaware that the effects were long delayed.

The grain, he was nearly certain, was then milled into flour on the hundreds of primitive grinding stones scattered throughout the farming communities. It was then formed into thousands upon thousands of pancake-like loaves and baked in small outdoor ovens. Each loaf, as best as the physicians at the University could determine, probably contained about 1.4 mg of methylmercury (a type of alkylmercury), and each person ate about three loaves each day. It was late December and early January when the first symptoms surfaced for most people who had been eating the bread. This was the point at which the consumed methylmercury reached a critical threshold, or "body burden." There had been no major symptoms before this time because most people had not yet reached the threshold concentration. But now the story was different. Victims were flooding into the rural clinics such as the one in Kirkuk.

He knew that organic mercury left the body very slowly. Its half-life was more than three months. Once consumed, it continued to work its damage on the nervous system for months and even years, if the patient survived that long. And the damage was permanent and grotesque.

The most tragic thing of all was that little of what Dr. Janabi had learned during the past few days came as a surprise. Ironically, it had all happened before. Just ten years prior, he and his colleagues published warnings for the world's medical

community about the dangers of distributing treated seed grain to peasant farmers without proper safeguards, warnings, and education. Some physicians and scientists might have understood the implications of the advice, but it was painfully obvious that the traders and bureaucrats failed to heed their warnings.



It was close to midnight when they arrived at the clinic in Kirkuk. The young doctor, obviously anticipating their arrival, met them outside as they walked toward the building from the car. Janabi asked to see a few of the patients prior to discussing the situation or resting from the long trip. The main ward was filled to capacity. Many of the patients were young women, all were lying on beds and cots. He walked quietly to one and gently opened her contorted and now useless hands. Faded traces of red dye lined the creases of her palms.

EPILOGUE

Between January and the end of August, 1972, 6530 admissions and 459 deaths from methylmercury poisoning were recorded in hospitals in Iraq. Based on expert opinion and general observations by tourists, however, it was estimated that as many as 60,000 peasants ingested sufficient methylmercury to have suffered neurological damage. There may have been as many as ten deaths for every official death recorded in hospitals.

With overwhelming evidence of the catastrophe underway, the government placed a ban on the sale of meat, recalled all of the seed grain distributed that fall, and mandated the death penalty for anyone caught selling the grain. They also instituted

a news blackout to the rest of the world to avoid embarrassment. Officials eventually confiscated 5000 metric tons, but over 90 percent of the original shipment of grain remained unaccounted for. Much of it, they believed, was dumped into streams and rivers by peasants fearful of being arrested for having it in their possession.

New admissions to hospitals began to taper off by the beginning of March and it appeared that the cause of the catastrophe had been identified and dealt with. Thousands of individuals remained hospitalized for the remainder of the winter and spring, however, and the deaths continued to mount as the severely stricken succumbed to the irreversible damage done by the poison.

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The story line is based on published accounts and is believed to represent the experiences of the physicians and researchers at the University of Baghdad who responded to this catastrophe. The names of the characters in this story are fictitious.