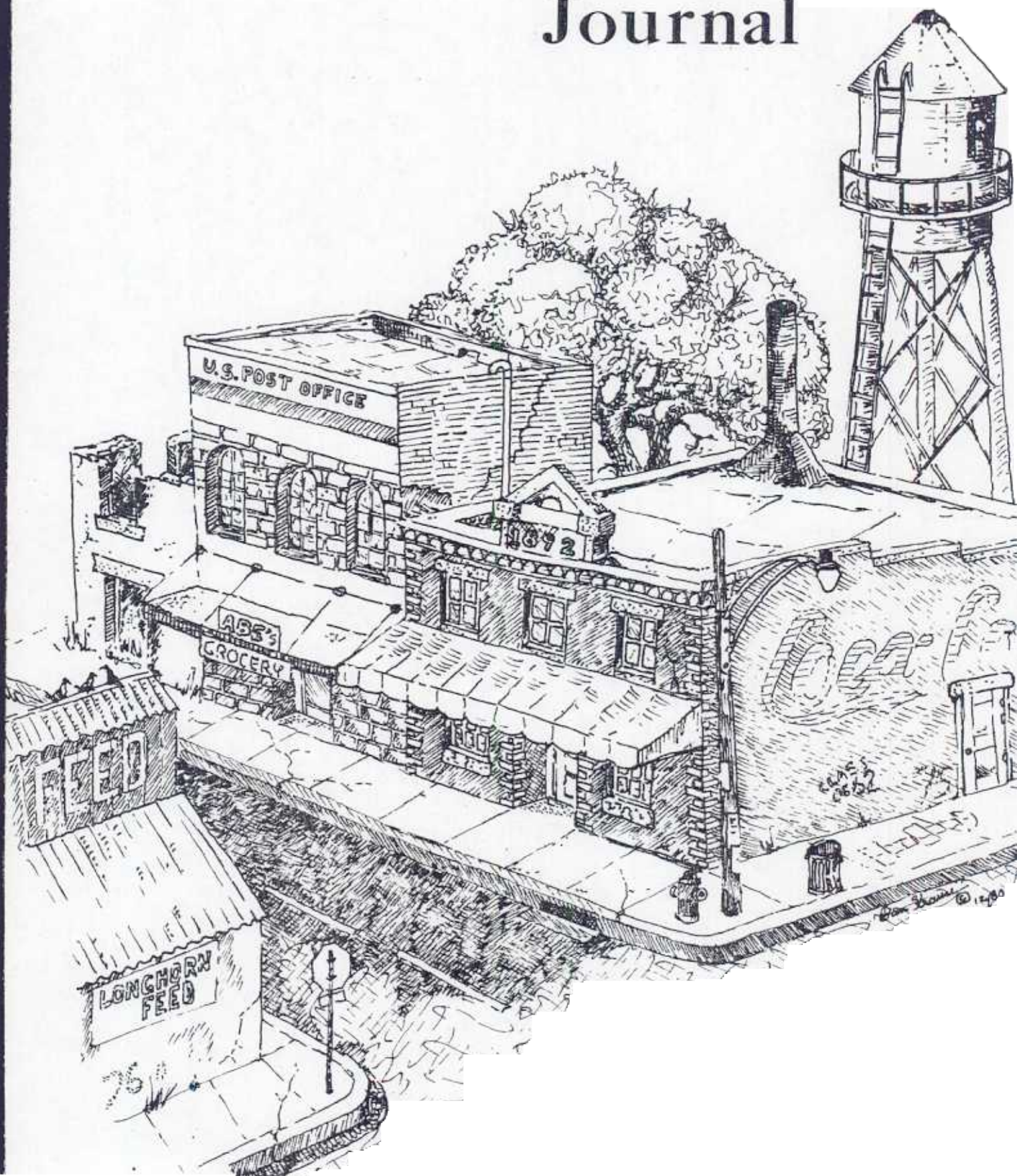


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GRETA AND AZARCON: TWO UNUSUAL SOURCES
OF LEAD POISONING FROM MEXICAN AMERICAN FOLK MEDICINE

by Robert T. Trotter, II

During the past 18 months at least one death and no fewer than 16 cases of lead poisoning have been traced to two compounds, called **greta** and **azarcon** in Spanish, which are home remedies in Mexican-American communities. The initial discoveries took place virtually simultaneously in Colorado and California, with subsequent discovery of both compounds in Texas.

One case, uncovered in California, is typical of the hospital based, urban discovery of one of the compounds. In Los Angeles County, a four-month old male was brought into the hospital with vomiting and diarrhea. A roentgenogram of the stomach showed a radio-opaque substance, which gastric lavage and later stools showed to be a bright orange, powdery substance. Upon repeated questioning, the mother admitted to giving the baby a **remedio casero** (home remedy) called **azarcon**, which had been sent to her from Mexico. A second incidence involving a 17-year-old female occurred shortly later, causing the public health department to more thoroughly investigate the use of **azarcon** in Los Angeles County. In both cases, and in nine subsequent confirmed cases of lead poisoning in California, it was discovered that the individuals were being treated for **empacho**, a folk illness common in Mexican-American communities.

Empacho is thought of as a bolus of food stuck to the intestinal wall. It is commonly identified and treated throughout Latin America, and is normally treated with massage or with herbal teas, many of which act as

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purgatives. All of the treatments are designed to dislodge the bolus and return the digestive tract to normal functioning. The closest English equivalent would be a combination of constipation and indigestion, with the symptoms being lethargy, bloating, gas, and indigestion.

The lead compounds are not the primary treatment for the ailment. The most common treatment in South Texas was identified as having the patient lie face down on the floor, then pulling up on a fold of skin in the small of the back until it "popped." The popping noise indicates a successful cure.

most commonly ingested treatment is a tea made from yerbaniz (*Tagetes Lucida* cav.). The lead compounds are reserved for severe or chronic cases of empacho. The use of the compounds to treat chronic empacho is illustrated by another case, discovered in Greeley, Colorado, which is more typical of the rural clinic based discovery of this problem.

During a period when general lead screening was taking place, a 2 1/2 year old female was discovered to have a zinc-protoporphyrin level of 19.1 $\mu\text{g}/\text{gm}$ hemoglobin (normal 3.5) and a blood-lead level of 59 $\mu\text{g}/\text{dl}$ (upper acceptable limit 30). Health officials visited the home and inspected for lead paint sources, since this is the most common source of lead poisoning in children. The interior of the house was determined to be in good condition, with no lead paint available to the child. The only outside source of lead paint accessible to the child was a peeling fence some distance from the house. Although the child's parents insisted that she never played near this source, authorities assumed it was the causal agent. From a sample of blood taken before chelation treatment was performed, the child was determined to have a blood-lead level of 137 $\mu\text{g}/\text{dl}$, which dropped to 44 $\mu\text{g}/\text{dl}$ after treatment. A follow-up two months later indicated that the child's blood-lead level had risen to 61 $\mu\text{g}/\text{dl}$, indicating re-exposure to lead after the chelation treat-

ment. The clinic staff made a follow-up visit to the home and, aware of poisonings in California due to a folk remedy, asked if the child was being treated for **empacho**. The parents replied that child was chronically **empachado** and had been treated at least three times in the past 12 weeks with a bright orange powder called **azarcon**.

The clinic officials obtained a sample of **azarcon** from the parents and tested it for lead content. The powder turned out to be virtually pure lead tetroxide (Pb_3O_4), with an elemental lead content of 93.5 percent. The powder had been sent to Greeley from Chihuahua by the child's grandmother to deal with the child's chronic tendency, noted by the family, to get **empacho**.

Subsequent research in Colorado and California indicated that **azarcon** is widely known and recognized as an effective remedy for **empacho**. research and the publicity on **azarcon** eventually turned up alternate names for the substance, and one alternate form. The alternate form is a heavy pale yellow powder called **greta**, brought into the Greeley clinic by a Texas migrant who had heard about the problems with **azarcon**.

At this point, research on **azarcon** and subsequently on **greta** expanded to other states, including Texas. **Azarcon** was discovered in use in the El area, while **greta** was found to be distributed to over 40 outlets throughout South Texas and the border regions. Analysis of samples of **greta**, purchased in local herb shops in South Texas, indicated that it is lead oxide (Pb_2O_3) with an elemental lead content of approximately 89 percent. **Greta** differs slightly from the **azarcon** in that it dissolves more readily in dilute acid, and therefore is probably the more dangerous of the two compounds. It is also the more commonly encountered remedy in Texas.

The analysis of the **greta** was performed independently by Vaughn Cox of the Texas Pesticide Hazard Assessment Project in San Benito and by the regional F.D.A. laboratory in Dallas.

The ethnographic evidence on **greta** and **azarcon** indicates that they are both considered very powerful cures for **empacho**. Thus, people tend to use them only for extremely stubborn cases of **empacho**, or only use them on individuals who have been identified by family members as being chronically prone to **empacho**. The method of ingestion of the two compounds is to place a small amount (about the size of the tip of the little finger) on the end of a spoon or knife, sprinkle with sugar, and ingest, washed down with a tea or some other liquid. In a number of cases this dosage was liberally interpreted, up to and including teaspoon level dosages, which would prove easily fatal. Non-fatal consequences include mental retardation, neuropathy, kidney failure, and anemia.

The geographical distribution of the two remedies ranges from Brownsville, at the mouth of the Rio Grande, through the border regions of Texas, to New Mexico, Arizona, Colorado, and California. **Azarcon** appears to be less well known in Texas except in the west, with knowledge of **greta** extremely widespread, especially in south Texas. The reason for this distribution is not yet known, but it has resulted in some confusion over whether or not local populations are being exposed to lead poisoning. A check was made in south Texas not long after the initial cases of lead poisoning from **azarcon** were publicized, and the erroneous conclusion was reached that folk remedies were not a potential source of lead poisoning. When **greta** was discovered 18 months later and when **azarcon** turned up in El Paso, this error was corrected.

Information on both **greta** and **azarcon** has been turned over to the F.D.A., the Center for Disease Control, and the State Health Department. **Greta** has been recalled from its distribution network, and both **greta** and **azarcon** are being put on the F.D.A.'s list of restricted items. A public

awareness campaign on the dangers of these two substances is also being mounted in the southwestern United States. Since these compounds are widely used in Mexico, the Pan American Health Organization has also been alerted to their use. In the recent past, two cases of lead poisoning from the compounds have also turned up in Michigan, both found in children of Texas migrants. Therefore, any area that has a migrant population and/or a permanent resident Mexican-American population in Texas should be considered to have the potential problems presented by these two remedies. This means that the problems caused by lead poisoning have stopped being basically urban, inner city problems and have become a part of the rural health picture in Texas communities.

Anyone who is interested in receiving more information on **greta** and **azarcon**, has any other cases to report for Texas, or is interested in receiving packages on **greta**, **azarcon** and lead poisoning in general should call:

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