

Jimson-weed is still recognized as a pretty good poultice for allaying pain, because it contains the powerful narcotic alkaloid called atropin.

The list of diseases prescribed for is extensive: skin disease, gout, pain in the joints, worms, burns, cracks in the soles of the feet, wounds, and a number of others. It is worthy of note that fear, fatigue and feeble-mindedness are looked upon as diseases and treated as such. There is a special chapter on diseases of women, another on the ills of children. Appropriately, the book closes with two pages entitled, "Of certain signs of approaching death."

Although the illustrations are quite naturalistic, so that a good botanist can identify many of them by simple inspection, some traces of the old stylized art of the Aztecs cling to them still. A plant that grows in stony ground will have the Aztec hieroglyphic sign for stone attached to its root tips. Similarly, if it grows in water, the water-glyph is appended. One plant is shown with both stone and water signs at its root-ends—and the text explains that it grows on

pebbly creek-beds. In all likelihood, an Aztec could have read a good deal of the book from the pictures alone.

Knowledge of plants and of medicine did not constitute a quasi-secret lore of special professional classes among the Aztecs, as it does with us. An early historian of the Mexican conquest and of the overthrown dynasty that ended with Montezuma, relates that "Montezuma kept a garden of medicinal herbs and the court physicians experimented with them and attended the nobility. But the common people came rarely to these doctors for medical aid, not only because a fee was charged for their services, but also because the medicinal value of herbs was common knowledge and they could concoct remedies from their own gardens."

In setting down his knowledge of Aztec botany and medicine, therefore, Martin de la Cruz was not betraying any secrets of his conquered people, but only generously sharing a democratically distributed learning with white men who had (*mirabile dictu!*) been generous to him.

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the best present knowledge, is entirely beside the point. Nor is the amount of gold in sea water particularly pertinent except to establish the difficulty of the problem. With all due respect to the analyses made by Dr. Fritz Haber, I personally incline to the more recent results reported by Mr. L. C. Stewart and Mr. W. H. Dow.

#### Concentration Varies

"Since Dr. Haber published his analyses, new quantitative analytical methods have been developed and applied. That variations in concentrations exist seems beyond dispute; however, one does not need to locate such a proposed extraction plant at the points of low concentration. Hence the minimum concentrations reported are beside the point. It is only high concentrations that need be considered as pertinent and Dr. Haber himself reported sample concentrations considerably in excess of 2.3 parts per billion.

"From a journalistic standpoint the word 'gold' has a value entirely dissociated from the metal itself and undoubtedly this is the reason why the variety of statements concerning the possibility of obtaining gold from sea water have been so broadly disseminated by the press. I personally have no active interest in this problem."

#### Comment by Dr. Wichers

Dr. Edward Wichers, chemist of the National Bureau of Standards in Washington, commenting on Mr. Midgley's statement given above, said:

"The new quantitative methods which are intimated to be the basis of the Dow Company's estimate of 2.3 parts per billion as the gold content of the Atlantic ocean have apparently not been published. Until they are available for scrutiny chemists generally can not be expected to accept conclusions drawn from them, especially since they are so strikingly different from the results of the exhaustive study made by Haber.

"As to the concentrations reported by Haber in excess of 2.3 parts per billion, he found, out of some 5000 samples, 7 which contained from 2 to 8 parts per billion. These were small samples (about 2 quarts). The highest average content found in any part of the oceans was only 5 parts in one hundred billion."

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To safeguard pedestrians at certain street crossings, British officials are testing use of an "electric eye" device, which would turn traffic lights red when a walker approached the corner and crossed the path of the infra-red beams.

#### CHEMISTRY

## Research Problem of Future: How to Take Water From Sea

**W**ANT to get gold from sea water? Then learn how to get the water out of sea water. Some cheap process of getting fresh water out of the salty ocean would bring gold to its discoverer and aid the future welfare of millions of people.

This is the statement to Science Service from the man who has been a storm center of controversy since he set scientific tongues wagging 2 years ago over his pronouncement that:

"It is no more impossible to extract gold from sea water now than it was to extract bromine from sea water ten years ago."

That man was Thomas Midgley, Jr., director of the American Chemical Society and vice-president of the Ethyl Gasoline Corp.

The only change in the oft-repeated prediction, Mr. Midgley said, is that the words "ten years ago" must now be changed to "twelve years ago."

The prediction still stands, Mr. Midgley contends, but he adds, "In no way, shape or form does it imply that gold will be extracted commercially from sea water in any given length of time."

Mr. Midgley's statement has consist-

ently been interpreted in the press to mean that gold would be extracted from sea water on a commercially profitable scale within ten years.

"There is a much bigger problem associated with sea water," Mr. Midgley said, "upon the solution of which depends the future welfare of millions of people. This problem is the commercial extraction of water itself from sea water. No one can say that water is present in too small a quantity to be recoverable. The present price paid for water in arid lands for irrigation purposes indicates that the value of the water in sea water is about the same as the value of the bromine at present prices.

"What more enticing research problem could anyone ask for, an unlimited supply of raw materials, an unlimited market with unlimited profits and unlimited benefits to humanity?"

Discussing criticisms of his gold prediction statement, Mr. Midgley said:

"I have little use for the pessimistic viewpoint applied to the future possibilities of chemistry and chemical engineering. A discussion of the economic factors surrounding this problem, based on