

American Beet Sugar in 1775?

H. W. DAHLBERG¹

All sugar technologists are familiar with the fact that Achard, the famous chemist, was the first European to produce beet sugar in some quantity in the year 1802. Without detracting in any way from his well-deserved fame as a plant breeder and sugar chemist, there may be just a little doubt that he was the first man to produce beet sugar in quantity for food purposes.

This doubt springs from the fact that Spanish historical records show that the Indians of the Santa Clara valley of California were producing sugar from some vegetable source prior to 1775. The original manuscript, dated November 20, 1775, describing these facts is preserved in the Mexican Archives, Museo Nacional, Mexico City, and a signed contemporary copy dated November 30, 1775, is in the Spanish archives at Seville, Spain, so there can be no doubt as to the authenticity of the record. The title of the manuscript (translated) is "A Historical, Political and Natural Description of California" by Pedro Fages.

Pedro Fages, a Spanish captain, explored Sonora and lower California in 1768 and 1769. He was in command of a military force which reached San Diego on May 1, 1769, and he explored the country around Alameda in 1770 and again in 1772. He served as governor of California from September 10, 1782, to April 16, 1791, and is considered one of the ablest, if not the outstanding, governor of the Spanish period.

Pedro Fages' manuscript shows that as an explorer he was a careful observer of the habits and customs of the Indians who lived in California at that time. He mentions the following materials as being common articles of food used by the Indians—rice, acorns, onions, cattail seeds, laurel berries. Fages' manuscript has been translated by Professor H. I. Priestley of the University of California and makes a very interesting little book of about 100 pages. I am indebted to the Bancroft Research Library of the University for the original Spanish quotation of a significant paragraph of the manuscript, together with a literal translation, which reads as follows: "*Hacen tambien los de Ja Sierra cantidades de melcocha, y azucar, que no desmerece el nombre para aquellas getites, y ser sacadas estas especies de unos begalales, que de suyo no parecen prometer tanto.*" The translation of the above is as follows: "Those (the tribes) of the Sierras make also quantities of molasses candy, and sugar, that is not unworthy of the fame of these peoples, and it is extracted from certain species of vegetables, which of themselves do not appear to promise much."

There are several reasons for believing that the "vegetables" mentioned by Fages were some type of sugar beet. First of all, the Spanish words for "vegetable" and "fruit" are quite different, and Fages uses the word "fruit" in other parts of the manuscript in which he describes another source of sugar. There is, therefore, no question but that Fages was describing a vegetable and nothing else when he used this word.

For many years there has been growing in the Milpitas-San Jose area of the Santa Clara valley and also near Hollister, California, a variety of

¹ Director of Research, Circut Western Sugar Company.

sugar beets which is an annual and produces seed every year. These beets resemble quite closely some of the annual types of sugar beets which grow on the shores of the Mediterranean and I believe they had their origin there, rather than as escapes from early sugar beets introduced into California when the industry was established there about 1870.

It is quite possible that some type of sugar beets may have been introduced into California as early as the 16th century or later during some of the Spanish expeditions between Mexico and California. Upper California was discovered by Cabrillo in 1542 and Sir Francis Drake landed in California in 1579. Many other explorers followed these two. It seems to have been the custom of some of these navigators and explorers to carry seeds and fruits from place to place. It is recorded in the history of the Franciscan missions that Galvez in 1769 "packed seeds of all useful plants" for the establishment of Mission gardens in California. It is also well known that many varieties of beet were used for food in Italy and the Mediterranean area even before the birth of Christ.

Among the reasons for believing in the Mediterranean origin of early California beets, and of the present wild types growing at Milpitas and Hollister, are the following:

1. **The present beets are distinct annuals, which is also true of many of the Mediterranean types.**
2. **Both the root type and the plant above ground are very similar to the Mediterranean type.**
3. **The present Milpitas beets have a high resistance to *Cercospora* (leaf spot), similar to that found by Munerati in wild beets growing in the estuary of the Po river in Italy. This character would not be found in the German commercial varieties of seed used in California in 1870 and later.**

If it is true that the "vegetables" used by the Santa Clara Indians for sugar production were some Mediterranean type of sugar beet, there was ample opportunity for seeds of this type to have been brought from Spain or Mexico to California in some expedition between the time of Cabrillo and the time of which Fages wrote in 1775. It is hoped that further research in old Spanish manuscripts may throw further light on the question.

As a matter of interest, and showing how familiar the early Indians of California were with sugar, I wish to quote the following from Fages' manuscript, in which he describes another source of sugar in another section of California (not the Santa Clara Valley)—"Native sugar is made from the olive-like fruit produced by a very leafy tufted shrub six feet high with a stem of reddish color and leaves like those of the mangrove. The preparation of the sugar consists in gathering the ripe fruit, separating the **pulp** from the seed, and pressing it in baskets to make cakes of sugar when dry and of good consistency."

The above quotation is interesting because it shows that Fages knew very well that "vegetables" were the source of sugar in the Santa Clara valley and that "fruits" were the source in another section of California.

Some evidence has been submitted in this paper that the "vegetables" mentioned by Fages may have been sugar beets, and that beet sugar may possibly have been made in California some 27 years earlier than Achard's work. Further historical research on the subject would be very desirable.