requests for study material for colleges, high schools and elementary schools were met with material for the instruction of nearly 260,000 pupils. The Local Flora Section, of about three acres, was opened on May 9. This area is planted on an ecological basis. The total budget of $165,690 represented a decrease of income of $22,782 as compared with 1932, a loss of approximately 12 per cent. The loss of available income as compared with 1930 was $46,873. During the year the sum of $10,232 was added to the endowment fund. The year was closed without a deficit and without vacating any positions.

DISCUSSION

A RARE SPECIMEN OF ZEA MAYS VAR. SACCHARATA[1]

A SPECIMEN of maize, collected by Earl H. Morris, archeologist, and identified by the writer as *Zea Mays var. saccharata,* is of special interest because of the fact that it is the only specimen of sweet corn so far identified from the numerous historic collections of corn recovered in the United States. This specimen is found in the American Museum of Natural History. Through the courtesy of the curator in chief, Dr. Clark Wissler, the writer secured the loan of this specimen for determination and study and it is described as follows:

Zea Mays var. saccharata
Aztec sweet corn
Specimen No. 29–0–9397

Length of ear 3.75 inches, diameter 1 inch at butt, tapering. Eight-rowed, regular. Kernels broad and shallow, measuring 5/8 of an inch broad, 2/8 of an inch long, cuneate to truncate, central area distinctly depressed, forming a marginal ridge, pericarp coarsely wrinkled, color pale amber, endosperm translucent, hard and brittle. Embryo completely disintegrated, color dark brown. Starch grains small, many poorly formed and tending to aggregate. Cob buff color. Ear enclosed in a husk 7¼ inches long, shank 2½ inches long bearing 5 nodes. The kernels are homozygous throughout and possess the severe wrinkling and translucent horny endosperm typical of sweet corn. The size, color and 8-rowed character are highly suggestive of Golden Bantam, a popular present-day variety.

The question has been raised as to the possibility of this being an immature specimen of field corn. The condition of the kernels in the upper half of the ear give evidence that the ear was plucked while still immature. The kernels towards the base of the ear are fully developed and show the wrinkled pericarp and translucent endosperm typical of sweet corn.

The specimen was collected by Mr. Earl H. Morris, who furnished the writer the following statement regarding its history.[2]

The ear of sweet corn from Room 139 of the Aztec Ruin, New Mexico, came from a refuse deposit laid down during the Mesa Verde phase of Pueblo III. The Aztec Ruin was built between 1110 and 1121 by a group of Chaco people, occupied for a time, then abandoned, and finally reoccupied by groups representative of the Mesa Verde strain of Pueblo culture. In accordance with Dr. Douglass' findings, the entire San Juan country was abandoned not long before or after 1300 A. D. In view of these facts it would be safe to estimate that the ear of corn in question was grown between the years 1200 and 1300.

The fact that sweet corn existed in pre-Columbian times is proved by this specimen. Since it is the only historic specimen so far identified in the numerous archeological collections of maize, doubt is expressed as to sweet corn being either a wide-spread or an important Indian food plant in the United States in the pre-Columbian period. The theory of its origin as a mutant of field corn is in harmony with the genetics of the corn plant.

The fact may also be noted that, among the numerous collections of historic corn from Peru, apparently but one specimen of sweet corn has so far been identified. This specimen was collected by M. Uhle under the direction of Dr. A. L. Kroeber, of the University of California, to whom we are indebted for the loan of this ear. This specimen, termed Huamachuco corn of the Inca period from northern Peru, was identified by Hendry[3] as sweet corn, a determination with which we do not wholly agree. This specimen we think belongs to the starchy sweet corn *Zea amylsaccharata* of Sturtevant. The starchy character of the endosperm is much more pronounced than in the pseudo starchy sweet corn of Jones. At any rate, it is interesting to note that sweet corn material is apparently rare in the maize collections from Peru, which seems to run parallel to the situation in the United States.

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A CONCEPT OF COLLOIDAL SYSTEMS BASED ON PROBABILITY

THE two most important features upon which the nature of the colloidal state is generally predicated

[1] Journal Paper No. J 146 of the Iowa Agricultural Experiment Station, Ames, Iowa.
[2] Earl H. Morris, letter to author under date of November 20, 1933.
[3] Huamachuco corn by Hendry. *Jour. Amer. Soc. of Agron.*, vol. 22, 1930.