

This is "The Story of The Delight Makers," by Miss Hulda R. Hobbs,² a well integrated collection of extracts from Bandelier's journals which tell us much more about the adventure of the writing and publication of *The Delight Makers* than the letters to Janvier do.

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Three New Mexico Chronicles: translated with introduction and notes by H. BAILEY CARROLL and J. VILLASANA HAGGARD. (xxxii, 342 pp., frontispiece, 2 maps. \$5.00. Albuquerque: The Quivira Society, 1942.)

In 1812, a small volume describing the Province of New Mexico was published in Cadiz. The author was Don Pedro Bautista Pino, a prominent citizen of Santa Fe who had been sent to Spain to attend a meeting of the Cortes. In 1832, Antonio Barreiro, a lawyer sent to New Mexico by the Mexican government, published *Ojeada Sobre Nuevo-Mexico* in Puebla. In 1849, José Augustín de Escudero, also a lawyer and government official, took the works of Pino and Barreiro, added considerable material himself, and published the three accounts in one volume, in Mexico City. These are the three chronicles of the present volume.

Descriptive accounts of the Southwest for the sixteenth and seventeenth centuries have been, and still remain, more numerous, accessible and useful to the student of ethnology than those of the seventeenth and eighteenth centuries. Thanks to volumes like the present one under review, we are coming to know more and more about this period.

Three New Mexico Chronicles is concerned primarily with the white population of New Mexico; the Indians are of secondary interest. Nevertheless, a description of the country, its Spanish population, and the conditions under which they lived, throws much light upon important forces shaping the life and culture of the Indian tribes. New Mexico in the first half of the nineteenth century was a remote, poor, helpless, and neglected territory. The clergy were too few to serve the needs of the white population to say nothing of converting the Indians. Schools were scarce and of poor quality. Physicians were almost unknown. The administration of justice was grotesque; prisoners escaped from their jails at night to go to dances, returning the next day. Industries were crude and undeveloped. Many citizens had never even seen money. And, perhaps most serious of all, they lacked adequate military defense. "For 118 years that province has maintained a state of warfare with thirty-three wild tribes which surround it," Pino tells us. But the United States was feared even more than the Indians. Again and again in these chronicles, the authors dwell upon the aggression, intrigues and encroachment by their Anglo-American neighbor. What would we do if the United States should invade our territory in force "to occupy our soil"? Barreiro asks, in effect (p. 75). The answer was not long in coming.

The accounts of the Indians are concerned with the nomadic tribes much more than with the Pueblos, the reason being that the former gave them no end of trouble whereas the peaceful Pueblos presented no serious problem. The Comanches, Apaches, Navajos and Utes are treated most.

² El Palacio (Vol. XLIX, pp. 109-124; June, 1942). See also *Addenda to the "Delight Makers,"* by Miss Hobbs (El Palacio, August, 1942).

Three New Mexico Chronicles is printed and bound in the customary handsome style of Quivira Society publications. Facsimiles of the original edition of Pino's *Exposición* and of Barreiro's *Ojeada* are included as Plates (pp. 211-318). The editors have done a splendid job. In addition to an illuminating preface and introduction, they have provided an exhaustive collection of notes (53 pp.), which leave virtually no point in the text obscure. A brief but well chosen glossary, and a good index, add further to the usefulness of this work.

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The Changing Physical Environment of the Hopi Indians of Arizona. JOHN T. HACK. (Reports of the Awatovi Expedition, Report No. 1, Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University, Vol. XXXV, No. 1. xxii, 85 pp., 54 figs., 12 pls. Cambridge, 1942.)

During the five field seasons from 1935 to 1939, the Peabody Museum excavated the prehistoric and early historic Hopi Pueblo of Awatovi. The study, as planned, was not one of archaeology alone, but it involved an integrated series of studies by specialists familiar with different techniques, all contributing to an ecological study of a Hopi area over a period of a thousand years. John T. Hack was the geologist of the expedition, and his paper is the first of the Awatovi reports to appear in print.

The paper is divided into six chapters. In the first, the author discusses the present day physiography of the Hopi country, climate, vegetation and water supply. In the second, he deals with the Hopi people, their population, economics and early history. In the third, he makes a detailed study of Hopi agriculture, adding greatly to Forde's earlier observations. The fourth chapter is a study of sand dunes as indicators of climatic changes. In the fifth chapter, he amplifies his earlier observations on erosion and sedimentation in the Navajo country. In the concluding chapter, he shows how a changing environment affected the ancestors of the Hopi.

Among other things, the author upsets, with good evidence, some old established conceptions on the source of the water in the Hopi springs. By a study of the dip, he shows that the source of the water was local and not derived underground from Black Mesa to the north.

In the alluvium of the valleys, Hack recognizes three recent deposits which he is able to date with more or less accuracy. The Jeddito formation, which is the earliest, contains elephant bones and no artifacts and is roughly dated from 7000 to 5000 B.C. It represents a period of moisture. This was followed by about two thousand years of severe drought, when arroyo cutting was the rule, and the dunes formed on the mesas and in the valleys. From about 3000 B.C. to 1200 A.D., new water-carried deposits were laid down in the valleys, which Hack calls the Tsegi formation, and in the upper part of this formation occur sherds from Pueblo II and Pueblo III. During the drought which culminated in the late 1200's, arroyo cutting and dune formation were again the rule, to be followed after 1300 A.D. by the deposition of the Naha formation, which contains Pueblo IV and Pueblo V sherds. The arroyo cutting which began in the 1880's represents the end of the Naha cycle.

Among the various types of Hopi fields, as pointed out by Hack, is one of rather great archaeological importance. Kirk Bryan has called them akchin (a Papago word)