

*Phi Kappa Phi Fraternity*.—Will meet on Saturday, December 29, 1917. President General, Edwin E. Sparks. Secretary General, L. H. Pammel, Iowa State College, Ames, Iowa.

*Gamma Sigma Delta*.—Will meet on dates to be announced. President, A. V. Storm. Secretary, L. H. Pammel, Iowa State College, Ames, Iowa.

### SCIENTIFIC EVENTS

#### SMITHSONIAN EXCAVATIONS IN NEW MEXICO

AN expedition organized by the Bureau of American Ethnology of the Smithsonian Institution and the Museum of the American Indian, Heye Foundation of New York City, under the immediate direction of Mr. F. W. Hodge, ethnologist-in-charge of the Bureau mentioned has concluded its first season of excavating among the ruins of Hawikuh in western New Mexico. This pueblo was one of the famed "Seven Cities of Cibola" which was seen by Marcos de Niza, a Franciscan Friar, in 1539 and was the scene of the death of his negro guide and companion. In the following year the pueblo was stormed by Francisco Vasquez Coronado, the celebrated Spanish explorer, who almost lost his life in the attack. The Zuni occupants of Hawikuh fled to their stronghold a few miles away; the Spanish took possession of their village, which Coronado called Grenada, and while there wrote his report to the Viceroy of Mexico, giving an account of his expedition up to that time and sending various products of the country and examples of native art.

The excavations were commenced at the close of May by Mr. Hodge, assisted by Mr. Alanson Skinner and Mr. E. F. Coffin of the Museum of the American Indian. Work was begun in a great refuse heap forming the western slope of the elevation on which Hawikuh is situated. This refuse was found to contain many burials of Zuni dead, of which there were three types—remains cremated and deposited in cinerary vessels accompanied by food and water vessels; others buried at length, or in abnormal postures without accompaniments; and usually dismembered; others still deposited at length with head directed eastward and with them numerous vessels of earthenware, great quantities of

food, and the personal tools and ornaments of the deceased. In all, 237 graves were opened during the three months devoted to the work, in which quantities of pottery vessels of various forms and with a great range of decorative painting, were uncovered. Among burials of the third type mentioned were several skeletons of members of the Zuni Priesthood of the Bow, with their war paraphernalia, including bows and arrows, sacred paint, war clubs, and their personal or ceremonial belongings.

A Franciscan mission was established at Hawikuh in 1639 and continued in operation until 1670 when the pueblo was abandoned on account of Apache depredations. Considering the length of time since the village was forsaken by its inhabitants, the remains were in a remarkably good state of preservation. The deposit of great quantities of food in the graves, especially boiled corn on the cob, had the effect of decaying the bones but of preserving the materials that usually more readily perish, such as baskets, fabrics, and objects of wood, many of which were saved by immediate treatment. Many very beautiful things found in association with the remains include 8 objects of turquoise mosaic, consisting of ornamental hair combs, ear pendants, and hair ornaments, some of which are so well executed as to be among the finest examples of encrusted turquoise ever found in America, and far exceeding the mosaic work of the Hopi Indians in Arizona to-day. Of the fabrics various examples were recovered, and indeed in one instance the clothing of a woman was so well preserved that it was possible to study the character of her dress from neck to feet.

The pottery of the Hawikuh people, as mentioned, possesses a wide range of decoration and coloring. Most of the designs are geometric, but numerous highly conventionalized figures of birds, as well as many lifelike forms of quadrupeds, the eagle, the butterfly, the tadpole, and the corn plant were found. Many of the vessels are decorated with a distinct glaze, black and green predominating. The vessels consist chiefly of bowls, ranging

in size from tiny toy affairs to some as large as fifteen inches in diameter; but there are also large and small water jars, and black, undecorated cooking pots, duck-shaped vessels, and the like.

The finds include, among others, the ceremonial paraphernalia of a medicine man, comprising his medicines; a turkey's egg containing the bones of the embryo and accompanied with a food bowl; several skeletons of eagles, turkeys, and dogs that had been ceremonially buried, and deposits of pottery that had been broken in sacrifice and deposited in the cemetery not as burial accompaniments. It was the custom of the Zunis of Hawikuh to "kill" all the vessels deposited with their dead by throwing them into the graves, and this was likewise the case with other household utensils such as metates and manos used in grinding corn. Some of the vessels escaped injury, while all of the fragments of the broken ones were carefully gathered and will be repaired.

The site of Hawikuh covers an area of about 750 by 850 feet, so that only a comparatively small part of the site was excavated during this season. The refuse was found to attain a depth of 14½ feet in the western slope and it will probably be found to reach a depth of at least 18 feet before the walls of the summit of the elevation are reached. An interesting discovery consists of the remains of many walls entirely beneath this great deposit of refuse, showing that the site was occupied in prehistoric times long before Hawikuh itself was built.

#### PROGRESS IN COMBATING HOOKWORM

THE recently published annual report of the Rockefeller Foundation records the results of intensive work on the study and control of hookworm and malaria. The report as quoted in the *Boston Medical and Surgical Journal* states that during the year 1916 the work of the International Health Board continued to be directed chiefly toward the relief and control of hookworm disease. In cooperation with the government, systematic efforts toward control have now been inaugu-

rated in eight of the Southern states and in fifteen foreign countries, located between degrees of latitude 36 north and 30 south in the tropical and sub-tropical belt, which is the native habitat of the hookworm. New fields of operations in 1916 were Salvador, Brazil, Ceylon, and Siam. Arrangements were also completed to start work early in 1917 in the Fiji Islands, in Papua, and in Queensland, Australia.

In British Honduras and the island of Barbados, preliminary infection surveys were made, and in the Yangtsekiang valley of Central China a preliminary survey was carried out with special reference to the problem of soil pollution in shallow mining operations.

The board conducted during the year a series of four experiments in malaria control. Three were finished. The fourth will be completed in 1917. The object of all four experiments was to determine the degree to which malaria could be controlled within the limits of reasonable expenditure and under conditions prevailing in typical farm communities of the South. Gratifying results have been obtained.

Two commissions were sent to South America. One, composed of six sanitarians, with Maj.-Gen. William C. Gorgas as chairman, visited the republics of Ecuador, Peru, Colombia, Venezuela and Brazil, to study yellow fever conditions. Two definite objects were sought: (1) to determine the status of doubtful endemic centers of infection; (2) to ascertain what measures were necessary and feasible to eradicate the disease from the localities responsible for its dissemination. The second commission investigated medical education and public health agencies in Brazil.

Active measures to control and prevent hookworm disease are now in operation in Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas and Virginia; in Antigua, Grenada, St. Lucia, St. Vincent and Trinidad of the West Indies; in British Guiana and Dutch Guiana; in Costa Rica, Guatemala, Nicaragua, Panama and Salvador of Central America; in