

Since the time of Pearson statisticians have realized that correlation coefficients computed from percentages are misleading. A strong tendency for significant negative correlations, the constraint, must be re-

These statistical relationships among the common pollen types suggest an ecological pattern. Presumably in the late Pleistocene the major vegetation changes taking place in the desert basins of the arid Southwest were shifts from sparse woodland or chaparral to pine parkland.

5:15 P.M. STUDIES OF SEDIMENTS FROM POTATO LAKE, ARIZONA
Melbourne C. Whiteside, Arizona State University

Potato Lake is located in the Yellow Pine forest on the Mogollon Rim above Payson at an elevation of 7,250 feet. Using a Livingstone Piston Sampler, a 3 meter core was obtained from the center of the lake. Pollen, chemical, and physical analyses were made on the core. Above 120 cm. in depth there is a decrease in *Picea*, *Abies*, and *Pseudotsuga* pollen, and a corresponding increase in *Pinus* pollen. This change has been interpreted as the end of the pluvial period. Evidence is presented which suggests that lake eutrophication began at this time.

5:30 P.M. POLLEN ANALYSIS AND LATE PLEISTOCENE VEGETATION CHANGE IN THE MOJAVE DESERT

Peter J. Mehringer, Jr., University of Arizona

Various lines of evidence from throughout the arid West indicate the dramatic changes which altered the landscape during Late Pleistocene time. Basins now dry and salt encrusted were filled with fresh water lakes. The higher mountains contained glaciers or perennial snow. The extinct Late Pleistocene megafauna, including bison, horse, sloth, camel, and mammoth, roamed vast areas of the present deserts. Vegetation zones were depressed by at least 4,000 feet.

Well dated fossil pollen from the Tule Springs Site, at 2,307 feet, 12 miles north of Las Vegas, Nevada, indicates major vegetational changes. The present vegetation is characterized by *Larrea*, *Franseria*, and *Atriplex*.

Spring and pond sediments dated at 40,000 years ago contain a pollen record which shows that the area was occupied by sagebrush desert, pinyon-juniper woodland, and possibly yellow pine parkland. About 20,000 years ago a lake formed in Las Vegas Valley; cattails and sedges grew around the shore, grass, junipers and pinyon pines occupied the flats, and yellow pines grew on the bajadas.

Aluvial and spring mound pollen profiles show that about 12,000 years ago the valley vegetation was dominated by sagebrush and scattered pinyons and junipers and that birch, ash, sedges and cattails grew around springs in the valley.

5:45 P.M. PALYNOLOGY OF OSGOOD SWAMP, ELDORADO COUNTY, CALIFORNIA

David P. Adam, University of Arizona

Osgood Swamp is a small shallow lake located in the Echo Lake Quadrangle near the south end of Lake Tahoe. Pollen analysis of a 14-meter core has yielded a vegetational record extending back to the last

recession of the glacier in whose terminal moraine the swamp is situated.

The late glacial vegetation was dominated by Artemisia and juniper. Postglacial vegetation has been dominated by pine; most of the post-glacial may have been warmer than the present, as evidenced by higher frequencies of *Quercus* pollen and the pollen of the aquatic and riparian component of the pollen rain. The most recent pollen zone is characterized by high frequencies of *Abies* and *Ericaceae* pollen.

6:00 P.M. PALYNOLOGY OF BROKEN K PUEBLO, EAST-CENTRAL ARIZONA

Richard H. Healy, University of Arizona

Broken K is a 95-room pueblo (estimated temporal placement ca. A.D. 1150-1300) which is located in an ecotonal area between juniper-pinyon woodland and grassland along Hay Hollow Wash, eleven miles east of Snowflake, Arizona. Due to its location and temporal span, this and nearby earlier pueblos afford an excellent opportunity of studying vegetation history from the 12th to 14th centuries A.D.

Pollen spectra of floors from rooms believed to date from the 1200's differ from those believed to date from the 1100's or 1300's in their decreased relative abundance of arboreal pollen. A possible correlation with the tree-ring chronology is suggested and the utility of palynology as a tool for temporal placement demonstrated. Pollen spectra and seeds of fecal material, pits, trash, matates, and smelting bins may possibly suggest a greater importance of native weeds in the diets of the prehistoric aborigines than heretofore suspected, and anomalous pollen spectra from burials may expand knowledge of their funeral practices. Differences in the relative abundance of the pollen of corn and other utilitarian plants may reflect functional specificity of certain rooms.