

"A gathering at Lowther Castle c. 1890 of people dressed in the native clothing brought back from North America by Lonsdale.... Lord Lonsdale is probably the figure at the back, second from the right." [From A Victorian Earl in the Arctic]

native technology of the regions Lonsdale traversed.

But unless the reader is interested in this total picture, the book becomes a rather expensive acquisition. All the contextual research may have been necessary to establish the geographical and cultural provenance of the specimens, but will the researcher interested in the artifacts plow through the journal and letters to glimpse the broader context, or would a simple notation suffice? Will those primarily interested in the narrative of Lonsdale's journey do more than just look at the pictures of the collection? Readers interested in all these things will applaud Krech's effort; those who may be satisfied with less had best get the book from the library.

EDWIN S. HALL
Department of Anthropology,
State University of New York College,
Brockport, NY 14420

A Chinatown Assemblage

The Chinese of Early Tucson. Historic Archaeology from the Tucson Urban Renewal Project. FLORENCE C. LISTER and ROBERT H. LISTER. University of Arizona Press, Tucson, 1989. x, 129 pp., illus. Paper, \$29.95. Anthropological Papers of the University of Arizona, no. 52.

Among the contributions of historical archeology is its investigation of a topic of specialized but increasing interest—the lives of 19th- and 20th-century Overseas Chi-

nese. Growing numbers of archeological sites (railroad camps, mining settlements, and urban Chinatowns) left by this distinctive ethnic group are being explored in North America, Australia, and New Zealand. One of the earliest such projects took place in Arizona between 1968 and 1973. The Tucson Urban Renewal Project was directed by James E. Ayres, then of the Arizona State Museum, who used volunteers and students from the University of Arizona to investigate two major areas of historic Chinese concentration within 80 acres cleared and redeveloped in the city's downtown section.

Although reports on a few specific categories of artifacts (ceramics and coins) have been published, what is recognized as one of the most complete assemblages of 19th- and 20th-century Chinese American material culture has sat unanalyzed in the Arizona State Museum since 1973. Well curated and conserved, it nevertheless has been inaccessible to scholars unless they visited Tucson.

Historically Tucson's Chinese society was always demographically small (never exceeding 2% of the total population), but like so many Overseas Chinese settlements it was quite visible and set off from the general community. A Chinatown began to take discrete form after the arrival of the railroad in 1880. Somewhat dispersed and undergoing at least one major shift of settlement center after 1912, it notwithstanding had a continuous history that spanned eight decades. Its remaining, partly abandoned struc-

tures were demolished in 1968. Internally this community was hierarchically split into a lower laboring section and a more elite "merchant" group. Relationships between these incipient classes and the surrounding Anglo-American and Hispanic societies fluctuated over time. Within the 20th century the poorer, laboring group maintained a more traditional and isolated Chinese cultural pattern, perhaps resulting as much from poverty as choice, while the expanding merchant—small-business stratum moved closer to general American society.

Archeologically what makes the Tucson assemblage so important is its dual source. Significant materials were recovered from excavated privies, trash pits, and deposits, but an almost unique ethnoarcheological component was discovered in 1968 when the researchers entered the Ying On Compound. An enclosed tenement structure, this 20th-century complex of buildings was occupied from 1919 to 1968 by older, working-class Chinese men. As this population dwindled (30 to 40 men in 1935; 26 in 1952; only 2 by 1967), its rooms were filled with the discarded possessions of the former residents. Ayers and his students found a few rooms with artifacts still in place, left by the last few tenants, and trash piles of items abandoned in some of the 25 other rooms. Careful mapping, photographic recording, and an inventory document this unusual discovery. Because of the age of individual items (perhaps up to 40 years) and the stability of Chinese material culture, the Tucson assemblage is an internationally important study collection for historical archeologists. Remains belonging to standard archeological categories such as pottery sherds, bottle fragments, and sections of brass cans, which are encountered on almost all Overseas Chinese sites, are in Tucson suspended within a much broader and var-



"Cotton pennant used during certain rites by an officer of the Chee Kung Tong to mark his station.... The ... inscription reads *Under Sichuan Supreme Commander Ding Zheng-tian*." Width, about 30 cm. [From *The Chinese of Early Tucson*; Arizona State Museum photograph by Helga Teiwes]

908 SCIENCE, VOL. 248

ied perishable material culture. Room inventories recorded types ranging from traditional Chinese clothing, surviving paper account books, and wooden artifacts to 39 colorful religious-political banners.

Continuity in Chinese everyday material culture, already indicated on purely 19thcentury sites, is demonstrated by many artifact types. Stoneware wine and spirits bottles, for example, recovered in Tucson both from the ground and in the rooms of the Ying On Compound, are almost identical in form and style between 1880 and 1960. The well-known ceramic triad of food serving vessels (Three Circles and Dragonfly, Celadon, and Four Seasons) produced by sites across the West dating between 1860 and 1900 also dominates in Tucson. However, because of the ethnoarcheological setting, an extension of both Celadon and Four Seasons wares up to the mid-20th century is indicated.

Two familiar components of the Chinese "sojourner" pattern (young males seeking temporary employment but not permanent residency in America) are drug and gambling paraphernalia. On most "sojourner" sites opium pipe bowls and fragments of shipment cans are visible even on the surface; in Tucson these categories (120 pipe bowls and perhaps 100 opium cans) are contextualized in a much more complete behavioral setting. Full smoking kits were found, including scales for weighing raw opium, specialized opium lamps, dried poppy pods, and needles, hooks, and tampers for servicing the pipes. As international trade networks were disrupted by the revolutions and wars that afflicted China between 1912 and 1948 and as legal pressure intensified in the United States, local Anglo-American items were substituted for hardto-obtain elements within the opium complex. Perforated doorknobs, which are quite similar in general form to the traditional bowl, replaced ceramic pipe bowls, and cutoff soda bottle tops replaced the opium lamps. Gambling items, normally found only in residual form at archeological sites (black-and-white fantan glass counters) are surrounded in Tucson by full decks of Chinese playing cards, ivory dominoes, Keno slips, and gambling record books. Behavior repeatedly discussed in 19th-century newspapers and indicated archeologically on most sites comes to life in the more complete Ying On Compound materials. And this ethnoarcheological part of the Tucson collection is truly an archeological assemblage—a constellation of artifacts demonstrably associated, down to one structure if not an individual room, in time and space.

As the authors point out, there are many shortcomings in the Tucson assemblage.



"Charley Lee's grocery, as it appeared about 1899, was at 633 South Meyer Street in a flat-roofed adobe building typical of the Hispanic barrio. Serving a diverse clientele typical of territorial Tucson, Charley posted bunting-draped signs in Spanish and in English advertising non-Chinese foodstuffs. A man, perhaps the father, engages in some construction work, while two hispanic boys lounge. The upturned pottery jar near the store was Tohono O'odham Indian earthenware used by most residents to cool drinking water." [From *The Chinese of Early Tucson*; courtesy of the Arizona Historical Society, Tucson]

Chinese artifacts were selectively removed, especially with the ethnoarcheological materials, from much larger Anglo-American trash piles. Thus it is impossible to discuss degrees of acculturation quantitatively. Yet considering the pioneering nature of this project, the field archeologists did make the correct decisions within the limitations of funding, scheduling, and available labor. They are to be praised for saving, with adequate provenience, what may well be the most complete sample of common Chinese material culture from the first half of the 20th century either outside of or inside

China. The Chinese of Early Tucson, with its impressive 160 figures (photographs and line drawings), 5 tables, and 3 appendixes, now makes this singular collection available to all researchers. The book is a significant descriptive contribution to general historical archeology, anthropology, and Asian American culture history.

ROBERT L. SCHUYLER
Department of American Civilization and
University Museum of Archaeology and
Anthropology,
University of Pennsylvania,
Philadelphia, PA 19104

Books Reviewed in Science 19 May 1989 through 11 May 1990

Advances in Mutagenesis Research, vol. 1, G. Obe, Ed., 30 March 1990, 1594

Alternative Life-History Styles of Animals, M. H. Bruton, Ed., 11 May 1990, 750

American Genesis, T. P. Hughes, 19 May 1989, 830

American Space Law, N. C. Goldman, 6 Oct. 1989, 132

American Teachers, D. Warren, 20 April 1990, 388 And Sadly Teach, J. Herbst, 5 Jan. 1990, 90 Apprentice to Genius, R. Kanigel, 8 Dec. 1989, 1329

Appropriating the Weather, R. M. Friedman, 8 Sept. 1989, 1124

Archaeological Thought in America, C. C. Lamberg-Karlovsky, Ed., 4 May 1990, 612

Arguments on Evolution, A. Hoffman, 11 Aug. 1989, 655

As We Forgive Our Debtors, T. A. Sullivan et al., 27 April 1990, 501

Astrophysics of Gaseous Nebulae and Active Galactic Nuclei, D. E. Osterbrock, 2 June 1989, 1095 Astrophysics of the Sun, H. Zirin, 19 May 1989,

Atlas of Polymer Morphology, A. E. Woodward, 11 Aug. 1989, 657

Atmospheric Radiation, 2nd ed., R. M. Goody and Y. L. Yung, 26 Jan. 1990, 476

Atoms for Peace and War, 1953-1961, R. G. Hewlett and J. M. Holl, 10 Nov. 1989, 826

Before It's Too Late, M. Horn, 1 Dec. 1989, 1181 Beyond the Barricades, J. Whalen and R. Flacks, 22 Dec. 1989, 1643

Biological Clocks and Environmental Time, S. Daan and E. Gwinner, Eds., 27 April 1990, 503 Biological Invasions, J. A. Drake et al., Eds., 6 April