

## CHINESE EXHIBIT ILLUSTRATES THE STORY OF PRINTING

By C. MARTIN WILBUR

Curator of Chinese Archaeology and Ethnology

Printing, a Chinese invention, is one vital cornerstone upon which modern civilization rests. Without it, the spread of general and technical knowledge which has produced our industrial civilization would have been impossible. Twentieth century democracy, postulated upon an educated and informed public, is inconceivable without printed books and journals. Postage stamps and bank-notes, time-tables and telephone books, with all that they imply, are utterly dependent upon the primary invention of printing.

Paper, which has everywhere been the forerunner of printing, making it possible on a large scale, is also of Chinese origin, and was transmitted to Europe by the Arabs. The slow migration of these two Chinese inventions across the whole of Asia to Europe, and the revolutionary consequences, make a fascinating story.

Traditional Chinese methods and equipment for printing are exhibited in Hall 32 (Case 27). Inks, paper, printing blocks and the tools for cutting them, together with examples of Chinese printed books, are all displayed. This ancient method of printing from wooden blocks is separated from our modern methods by centuries of independent development, marked in the west by a succession of brilliant inventions, increasing speed and volume. Yet there is a fundamental similarity between Chinese methods and our own: both are based upon a negative printing surface, inked, and repeatedly pressed upon paper for reproduction. It was this process which the Chinese invented and were using five centuries before Europeans learned it, and this basic idea is still employed all over the world.

The Chinese language differs greatly from those of the Occident, which are written in alphabetic scripts, and consequently it produced a different printing technique from our own. Thus, although movable type was invented and used in China as early as 1059 (long before Gutenberg), it was abandoned in favor of a method, easier for the Chinese, of cutting a wooden block for a whole page of print. Alphabetic scripts, on the other hand, favor a single type for each letter, with letters combined into words. Only recently the Chinese have returned to movable type, and are borrowing many other modern printing methods from America and Europe, because volume and speed are now vital to the fast-moving and complex life of modern China.

The story of printing illustrates a fundamental concept of the anthropologist, who views all civilization as the complex result of innumerable ideas, inventions, and institutions, coming from many lands and from various times in the past. All these elements are inseparably mixed in a vast and mysterious pudding, which constantly changes as new ideas and inventions, new methods and practices, are accepted. In our western civilization certain basic Near Eastern, Greek, Roman, and western European practices give the primary flavor. No one knows what other sauces and spices have dropped into the pot from everywhere in its long and turbulent boiling.

Dr. Ralph Linton, formerly of Field Museum, in his book, *The Study of Man*, depicts an average American who wakes in the morning and quite unconcernedly uses products and inventions from every part of

the globe as he dresses and eats: "When our friend has finished eating he settles back to smoke, an American Indian habit, consuming a plant domesticated in Brazil in either a pipe, derived from the Indians of Virginia, or a cigarette, derived from Mexico. . . . He reads the news of the day, imprinted in characters invented by the ancient Semites upon a material invented in China by a process invented in Germany. As he absorbs the accounts of foreign troubles he will, if he is a good conservative citizen, thank a Hebrew deity in an Indo-European language that he is 100 per cent American."

### Aerial Tropical Garden

A group of epiphytic and parasitic plants, growing about a termite nest built at the tip of a tropical tree branch is exhibited in Stanley Field Hall. The group was reproduced from nature in the plant reproduction laboratories of the Department of Botany. The original specimen came from the Demerara River in British Guiana.

### INSOLATION

By HENRY W. NICHOLS

Chief Curator, Department of Geology

In the deserts and upon the mountain tops the sun's rays can shatter solid rock, breaking it into fragments and covering the ground with an accumulation of rocky debris. This destruction is a consequence of the rapid heating of the rock, called insolation, during the day, followed by rapid cooling through radiation after sunset. When the heating and cooling are sufficiently rapid the accompanying expansion and contraction induce strains greater than the brittle rock can endure. The rock breaks and chips, and even large pieces are flaked away from the surface. Campers have often been startled by a similar disruption of rock when a campfire built against a ledge has heated the rock too rapidly and fragments fly off with explosive and sometimes dangerous violence.

Over most of the world, the atmosphere, which tempers the effect of the sun's rays, protects rocks from much of this damage by insolation. On mountain tops, where the sun's rays pass through less atmosphere, their power is not reduced as much as at lower altitudes. The air over deserts is exceedingly dry, and as the atmospheric agent which absorbs most energy from sunlight is water vapor, sunlight over deserts has more power than elsewhere. Since cooling by night in deserts is less retarded by the blanketing effect of water vapor in the air, the cooling of the rock is more rapid and the cooling strains induced are more severe.

The results of insolation are exceptionally well demonstrated in the North Arabian or Syrian Desert. There the Marshall Field North Arabian Desert Expedition of 1928 made a notable collection, now on exhibition in Clarence Buckingham Hall (Hall 35).

### YOU SHOULD READ

*Snakes Alive and How They Live*, by Clifford H. Pope.

Deservedly the current "best seller" among books about reptiles, this book is interestingly written and thoroughly reliable in its information. Mr. Karl P. Schmidt, Curator of Reptiles at Field Museum, places it *first* in his list of books recommended to those interested in reptiles.

This is one of many noteworthy books on natural history, available at the new FIELD MUSEUM BOOK SHOP. \$2.50.

### GUIDE-LECTURE TOURS

During August conducted tours of the exhibits, under the guidance of staff lecturers, will be given on a special schedule, as follows:

Mondays: 11 A.M., Plant Life Exhibits; 3 P.M., General Tour of Exhibition Halls.

Tuesdays: 11 A.M., Halls of Primitive and Civilized Peoples; 3 P.M., General Tour of Exhibition Halls.

Wednesdays: 11 A.M., Animal Groups; 3 P.M., General Tour of Exhibition Halls.

Thursdays: 11 A.M. and 3 P.M., General Tours of Exhibition Halls.

Fridays: 11 A.M., Minerals and Prehistoric Life; 3 P.M., General Tour of Exhibition Halls.

There are no tours given on Saturdays or Sundays.

Persons wishing to participate in the tours should apply at the North Entrance. The tours are free, and no gratuities are to be proffered. Guide-lecturers' services for special tours by parties of ten or more are available free of charge by arrangement with the Director a week in advance.

### Gifts to the Museum

Following is a list of some of the principal gifts received during the last month:

From Dr. A. K. Owen—10 archaeological specimens, Egypt; from School of Forestry, Yale University—49 herbarium specimens, Colombia, Costa Rica, and Dominican Republic; from George B. Hinton—85 herbarium specimens, Mexico; from George Moore—46 herbarium specimens, Missouri; from George L. Fisher—104 herbarium specimens, Texas, California, and Mexico; from Jardim Botânico de Belo Horizonte—328 herbarium specimens, Brazil; from Museo Nacional—68 herbarium specimens, Costa Rica; from Centro Nacional de Agricultura—100 herbarium specimens, Costa Rica; from I. W. Knobloch—30 herbarium specimens, Mexico; from Rev. Luis Mille—15 herbarium specimens, Ecuador; from Frank Von Drasek—19 mineral specimens, New Mexico and Arkansas; from Mrs. Beatrice Norden—a specimen of cinnabar and one of barite, Arkansas; from Duncan MacMillan—34 specimens of fossils, Illinois; from J. A. King—27 birds, Guatemala; from Al Pflueger—a specimen of Allison's tuna and 2 ducks, Florida; from Chicago Zoological Society—3 mammals, 59 birds, and 9 reptiles; from H. B. Conover—50 birds, Tanganyika Territory; from John G. Shedd Aquarium—2 fish specimens, Mexico and Fiji Islands; from Julian A. Steyermark—11 fish specimens and one centipede, Missouri; from the American Museum of Natural History—a 35 mm. silent film *Man versus Beast*.

### NEW MEMBERS

The following persons were elected to membership in Field Museum during the period from June 16 to July 15:

#### Associate Members

Dr. John M. Berger, Mrs. George E. Brennan, Mrs. George Fabyan.

#### Annual Members

Frank D. Carpenter, B. E. Cedarquist, Earle M. Combs, Jr., R. E. Connolly, Charles F. Cooke, David W. Davidson, Charles G. Foucek, Mrs. A. G. Hollingshead, Paul J. Kahn, Miss Katherine Marjorie Kelly, F. E. Kruesi, Z. E. Martin, H. H. Meltzer, John H. Milne, B. F. Roman.

#### Staff Notes

Dr. Henry Field, Curator of Physical Anthropology, left July 5 for an extended visit to Europe where he will attend scientific meetings in Copenhagen, London, and Brussels, at all of which he will present papers. At the Congress of Anthropological and Ethnological Sciences in Copenhagen, which he will attend as the official delegate from the United States, Dr. Field will present a paper entitled "The Physical Characters of the Modern Peoples of Iran."

The story of a lion hunt by African natives, armed with spears, is told in a series of three bronze groups, exhibited in Stanley Field Hall. They are the work of the late Carl E. Akeley.





1938. "Aerial Tropical Garden." *Field Museum news* 9(8), 4-4.

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