

## Field Museum of Natural History

Founded by Marshall Field, 1893  
Roosevelt Road and Lake Michigan, Chicago

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### FIELD MUSEUM NEWS

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Field Museum is open every day of the year during the hours indicated below:

Nov., Dec., Jan., Feb., Mar.	9 A.M. to 4:30 P.M.
April, September, October	9 A.M. to 5:00 P.M.
May, June, July, August	9 A.M. to 6:00 P.M.

Admission is free to Members on all days. Other adults are admitted free on Thursdays, Saturdays and Sundays; non-members pay 25 cents on other days. Children are admitted free on all days. Students and faculty members of educational institutions are admitted free any day upon presentation of credentials.

The Museum's natural history Library is open for reference daily except Saturday afternoon and Sunday.

Traveling exhibits are circulated in the schools of Chicago by the N. W. Harris Public School Extension Department of the Museum.

Lectures for schools, and special entertainments and tours for children at the Museum, are provided by the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures.

Announcements of free illustrated lectures for the public, and special lectures for Members of the Museum, will appear in FIELD MUSEUM NEWS.

A cafeteria in the Museum serves visitors. Rooms are provided for those bringing their lunches.

Chicago Motor Coach Company No. 26 buses go direct to the Museum.

Members are requested to inform the Museum promptly of changes of address.

### MEMBERSHIP IN FIELD MUSEUM

Field Museum has several classes of Members. Benefactors give or devise \$100,000 or more. Contributors give or devise \$1,000 to \$100,000. Life Members give \$500; Non-Resident Life and Associate Members pay \$100; Non-Resident Associate Members pay \$50. All the above classes are exempt from dues. Sustaining Members contribute \$25 annually. After six years they become Associate Members. Annual Members contribute \$10 annually. Other memberships are Corporate, Honorary, Patron, and Corresponding, additions under these classifications being made by special action of the Board of Trustees.

Each Member, in all classes, is entitled to free admission to the Museum for himself, his family and house guests, and to two reserved seats for Museum lectures provided for Members. Subscription to FIELD MUSEUM NEWS is included with all memberships. The courtesies of every museum of note in the United States and Canada are extended to all Members of Field Museum. A Member may give his personal card to non-residents of Chicago, upon presentation of which they will be admitted to the Museum without charge. Further information about memberships will be sent on request.

### BEQUESTS AND ENDOWMENTS

Bequests to Field Museum of Natural History may be made in securities, money, books or collections. They may, if desired, take the form of a memorial to a person or cause, named by the giver.

Cash contributions made within the taxable year not exceeding 15 per cent of the taxpayer's net income are allowable as deductions in computing net income under Article 251 of Regulation 69 relating to the income tax under the Revenue Act of 1926.

Endowments may be made to the Museum with the provision that an annuity be paid to the patron for life. These annuities are tax-free and are guaranteed against fluctuation in amount.

## THE CAP-BLANC SKELETON IS SUBJECT OF BOOK

A monograph on the Magdalenian skeleton from Cap-Blanc, which is exhibited in the Hall of the Stone Age of the Old World (Hall C) at Field Museum, was recently published by the University of Illinois, under the auspices of its Graduate School. Dr. Gerhardt von Bonin, of the staff of the department of anatomy at the university, is the author. He made a profound study of this specimen, which is the only Paleolithic human skeleton in any American institution.

The skeleton is that of a girl, estimated to have been about twenty years of age at the time of her death. It was found in the Cap-Blanc rock-shelter in the Dordogne region of France, on the walls of which is one of the most important examples of sculpture of the Magdalenian period—a famous frieze of horses. This rock-shelter has been reproduced in one of the series of dioramas in the Hall of the Stone Age, adjacent to the case containing the original skeleton.

Dr. von Bonin's monograph discusses all features of the skeleton in detail, as observed in his careful studies. The monograph is illustrated with nine large plates of photographs and diagrams. It is dedicated to the memory of the late Dr. Berthold Laufer, former Curator of Anthropology at Field Museum. Copies of the book are on sale at Field Museum. Price \$1.00. Postage additional on mail orders (7 cents in Chicago).

## AIR CUSHION PROTECTS EARTH FROM MOST METEORITES

BY HENRY W. NICHOLS  
Curator, Department of Geology

Meteorites, so many of which are shown in Hall 34, would be dangerous visitors were it not for the protection afforded the surface of the earth and its inhabitants by the atmosphere. So numerous are the meteorites that enter the upper atmosphere and so great is their velocity that if they reached the surface of the earth unimpeded, the constant bombardment would make human life perilous if not impossible. Fortunately the air interposes an obstacle or cushion through which few of them can pass and those few only with greatly reduced speed and much diminished size.

It is impossible to estimate with any pretense to accuracy the number of meteorites that enter the air, but this number is known to be very large. Some estimates, based upon such imperfect data as can be obtained, are as high as nearly a million an hour. Fortunately, most of these meteorites are very small, comparable with grains of sand in size. It is believed that most meteorites enter the air at speeds between eight and forty-four miles per second. At such enormous speeds even particles as small as grains of sand become deadly projectiles.

A meteorite that weighs only one pound, moving at a speed of forty-four miles per second, would strike with a force of more than eight hundred million foot-pounds. The smashing power of a meteorite of even moderately large size would be much greater. Even the extremely rarefied upper air opposes a strong resistance to bodies moving at such enormous speeds. The friction of passage rapidly reduces the velocities to moderate values comparable with those of ordinary falling bodies. Sufficient heat is generated by this friction to heat the surface of the meteorite to incandescence. The surface melts and a film of molten matter covers it. This molten film is rapidly blown away by

the powerful air currents generated by the passage and trails behind forming the luminous train seen behind meteors and shooting stars. The melted surface film is renewed as fast as it is blown away and thus the substance of the meteorite is consumed. Nearly all meteorites that enter the air are completely destroyed in this way. Very few survive to strike the ground. An iron meteorite would have to weigh from ten to twenty pounds for even a small core to persist until it reached the solid earth and few of the many meteorites that enter the upper air are as large as this. The meteorites that have fallen are but the remnants of much larger bodies.

The height at which the initial velocity of nine meteorites was overcome and from which they fell under the influence of gravity alone has been computed and found to be from about two and one-quarter to twenty-nine miles. Even the fall by the pull of gravity is retarded by the resistance of the air which checks the fall greatly but in varying degrees dependent on the weight, size and shape of the meteorite. The few giant meteorites weighing thousands of tons each which made great craters (as described in the February, 1934, issue of FIELD MUSEUM NEWS) are exceptional. Their enormous weights were sufficient to overcome in great degree the retarding effect of the atmosphere.

## CHINESE HOUSEHOLD EXHIBIT

An exhibit of Chinese household objects, together with a few Chinese scientific instruments, was recently added to the hall of Chinese ethnology (Hall 32).

Included are elaborate vanity boxes used by Chinese women, decorative hair combs, pillows made of various materials such as pottery, rattan, or leather on a wooden frame, hand warmers, incense boxes, padlocks, combination locks, bed curtain hooks, spectacles made of rock crystal, a hat stand, a lamp especially designed to keep mosquitoes away, soap, brushes, mariner's compasses and sun dials.

The hard pillows are decorated with various kinds of designs, one having a picture of the Kilin, a fabulous animal about which the Chinese have a legend similar to ours about the stork bringing children.

For heating, in central and southern China, metal braziers filled with charcoal are placed in the room. The general tendency is to keep the body warm by the addition of clothes rather than by heating the room. Pillows serve largely for the support of the neck, and some have an opening in one end so that they may be filled with hot water in the winter and with ice in the summer.

## Distinguished Visitors

Among distinguished visitors to Field Museum during May were Major-General Sir Francis Younghusband, M. Maxime Ducrocq, Colonel Theodore Roosevelt, and Dr. E. L. Gill. Sir Francis is well-known for his explorations in India, Tibet, Turkestan, the Pamirs, Chitral, Transvaal, and elsewhere. He was British Commissioner to Tibet for several years, and is the author of numerous books. M. Ducrocq is a noted French sportsman, and Président du Conseil International de la Chasse. He visited Chicago in the course of a trip around the world in the interest of promoting wild life protection. Colonel Roosevelt took the opportunity to inspect a number of the new Asiatic groups in William V. Kelley Hall, including several for which he had collected specimens. Dr. Gill is Director of the South African Museum at Cape Town.





Power, Frederick B. 1935. "Air Cushion Protects Earth From Most Meteorites."  
*Field Museum news* 6(6), 2-2.

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