

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.

MODEL SHOWS CHICAGO AREA SUBTERRANEAN STRATA

BY HENRY W. NICHOLS
Curator, Department of Geology

In the tropics, semi-tropics, and other regions not reached by the ice of the glacial period, the soil often changes so gradually into the rock below that no one can tell where the soil ends and the rock begins. In glaciated regions such as the country around Chicago, conditions are very different. The advancing continental glacier scoured away the original soil and any unsound weathered rock, leaving a smooth hard rock surface. When the ice of the retreating glacier melted, it left a cover of gravel, sand and mud over the rock surface. But this cover was not even, it was thick in some places and thin in others, so that the top surface of the new soil has no relation to the contour of the hard rock below. A hill on the surface may be over a valley in the rock, or a depression in the soil may overlies a peak in the rock.

This is strikingly shown by a model in Clarence Buckingham Hall (Hall 35). This model represents surface farmland in the country near Chicago with its green fields, farm buildings and fences. The farm represented is on stony glacial gravel which has a gently rolling surface and lies on a sharply defined rugged limestone surface below. The form of the surface of the ground is seen to have no relation to the rugged rock surface with its ridges and valleys below.

STUDY OF SNAKE MIGRATION AND HIBERNATION BEGUN

BY KARL P. SCHMIDT
Assistant Curator of Reptiles

One of the most interesting subjects in zoology is the means various animals employ for passing the winter. All reptiles and amphibians in northern countries become dormant during this season. Hibernation requires a refuge from the cold where complete freezing of the body cannot occur. Many insects, on the other hand, can freeze solidly without injury. A number of reptiles, such as turtles, may have their extremities frozen, but none can survive freezing of the heart. Aquatic reptiles, frogs, and salamanders gather in swamps and ponds where they hibernate in the mud, while toads and many snakes, the box turtle and all hibernating mammals take refuge in dry places.

Among cold-blooded reptiles a gathering from a wide area to a specific hibernation den may take place in the fall. This is especially well-known of rattlesnakes, copperheads, and water moccasins. The eastern blacksnake is said to have the same habit, and to share the dens of the timber rattlesnakes and copperheads. At the time of going into hibernation these snakes seem to be completely indifferent to each other's presence, although the blacksnake during the summer may make an occasional meal of a rattler.

In the middle west the well-known blue racers take the place of blacksnakes, and apparently gatherings into a winter den occur among them also. A remarkable aggregation of this sort was discovered in the Indiana Dunes region about the middle of October by the writer, accompanied by Mr. Bryan Patterson of the Department of Geology. Among the old oak-covered dunes, within an area not greater than an acre, an extraordinarily large colony of blue racers, numbering between fifty and one hundred individual snakes, was found. These snakes, never seen in such numbers before by the

writer, were sunning themselves in open places, and tracks in the loose sand showed that they had gone in and out of old woodchuck burrows. Many had climbed into bushes where they lay extended on horizontal branches. The average size was between four and five feet, and all had the glossy fresh appearance of snakes which had recently shed their skins. The surrounding dune areas seemed to be free of blue racers. Occasional blue racers may be observed throughout the Dunes region during the summer, but it is most unusual in the experience of Chicago naturalists to see more than one or two of these handsome active snakes in the course of a day.

The aggregation of snakes into hibernating colonies is a matter of considerable scientific interest, and very little is known about it, although it is suspected that this fall concentration of blue racers may have been observed by old residents of the Dunes and hikers who frequent the region.

As a means of studying the numbers of snakes involved and the distances to which and from which they travel, twenty-six specimens of the colony discovered in the Dunes were marked by the writer, and Messrs. L. L. Walters and E. G. Laybourne, by a system of scarring individual scales beneath the tail. More important observations will accrue from the study of living specimens in the wild state than from the accumulation of further museum specimens preserved in alcohol, although the total number of specimens of blue racer in the collections of Field Museum and the Chicago Academy of Sciences together is only eleven.

Specimens found dead on the roads in the Dunes region, if not too much crushed, will still be welcome additions to the study collections of either of these institutions, however, and persons finding them are requested to send them. Living specimens of the blue racer, which is an entirely harmless creature, actually beneficial to agriculture in the general economy of Nature, should not be molested. Local naturalists, by repeated visits to the places of hibernation, will be able to fill out the unknown parts of the life history of the snakes.

Change in Visiting Hours

Effective November 1, and continuing until March 31, winter visiting hours—9 A.M. to 4:30 P.M.—will be observed on weekdays at Field Museum; 9 A.M. to 5 P.M. on Sundays.

Post Card Sets

Educational series of photogravure post cards illustrating different phases of anthropological, botanical, geological and zoological subjects, are published and sold by Field Museum. These have proved to be a valuable medium of disseminating scientific information. Each set contains from six to thirty cards with picture and instructive text. Prices range from 10 cents to 50 cents depending upon the number of cards in the set. A list of the subjects may be obtained from the Museum on request.

Swanflower

At the same time one of the most strikingly attractive in appearance yet most disgustingly malodorous of tropical plants is the huge swanflower of Central America and the Antillean islands. A reproduction of it, and a model showing its structure, are on exhibition in the Hall of Plant Life (Hall 29). It is the largest flower of the region to which it is native.



Schmidt, Karl Patterson. 1935. "Study of Snake Migration and Hibernation Begun." *Field Museum news* 6(11), 2-2.

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Field Museum of Natural History Library

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