

more slenderly built, inhabited Rodriguez. All three were flightless, their wings being no longer functional. Their ancestors, of course, were undoubtedly capable of flight. The date of their extinction was about 1681.

This group of birds illustrates perfectly the fact that insular isolation and freedom from predatory enemies bring about flightlessness through mutation pressure and the absence of the need for adaptation. Originally there were no predatory mammals in this group of islands, but pigs and monkeys were introduced by the early explorers. Within a hundred years the pigs and monkeys completely destroyed the dodos and their kin. This illustrates the danger of the promiscuous introduction of animals foreign to a natural environment.

There is an interesting contemporary account of dodos published in 1601, from the pen of the Dutch Admiral Neck, who wrested the island of Mauritius from the Portuguese. Another, that appeared in 1625, says: "There is a store of great fowle of the bignesse of a Turkie, very fat, and so short winged that they can not fly, being white, and in a manner tame; and so be all other fowles as having not been troubled nor feared with shot."

Of the Rodriguez solitaire, F. Legaut wrote in 1708: "They are taller than turkeys, the eye black and lively and the head without comb on cop (*sic*). They never fly, their wings are too little to support their bodies, they serve only to beat themselves and flutter when they call on one another. From March to September they are very fat and taste admirably well, especially while they are young; some of the males weigh 45 pounds. The females are wonderfully beautiful and no one feather is straggling from the other all over their bodies. The feathers on their craws are whiter there than the rest, which livelily represents the fine neck of a beautiful woman."

Distinguished Visitors

Among distinguished visitors recently welcomed at Field Museum are the Countess Gisèle de Diesbach, Attachée to the Louvre, Paris, as head of the lecture department; Mr. A. S. Arguelles, Director, Bureau of Science, Manila, Philippine Islands; Dr. Alexander Wetmore, Director, United States National Museum and Assistant Secretary of the Smithsonian Institution, Washington, D.C.; Dr. C. L. Lundell, of the Herbarium of the University of Michigan, Ann Arbor; Dr. Leon J. Cole, Professor of Zoology, University of Wisconsin, Madison; Mr. Stewart H. Perry, of Adrian, Michigan, an authority on meteorites; Mr. Bertrand Schultz, Assistant Director, Nebraska State Museum, Lincoln, and Dr. Gerald W. Prescott, Associate Professor in the department of botany, Albion College, Albion, Michigan, who is a well-known student of algae.

Economic Importance of Palms

In tropical countries, palms furnish many of the necessities of life—food, clothing, construction material for dwellings, home furnishings, etc. An extensive display of palms and their economic products is to be seen in Hall 25.

George M. Pullman Hall (Hall 13) is entirely devoted to horned and hoofed animals from all parts of the world.

FIELD MUSEUM NEWS IN "NEW DRESS"

To provide better legibility, and to increase and improve its service to Members of the Museum, FIELD MUSEUM NEWS inaugurates with this issue a more easily read style of typographical "dress," and an increase in size to eight pages.

It is believed that all readers will welcome the increase by two "points," as printers' terminology expresses it, of the white space between the lines of type. This brings the NEWS into conformity with the typographical practice of most modern periodicals and newspapers.

The increase in the size of this monthly bulletin will make possible a more complete coverage of the activities of the Museum.

CLIFFORD C. GREGG, *Director*

RAINSTORM 250,000,000 YEARS AGO RECORDED IN FOSSIL IMPRINTS

By SHARAT K. ROY
Curator of Geology

Fossil imprints of rain drops in sedimentary rocks (shale or sandstone) made by ordinary brief showers are not of uncommon occurrence, but such imprints resulting from rain accompanied by winds of high velocity are rare. A specimen believed to be of the latter type was found by the writer last summer while conducting the Sewell L. Avery Geological Expedition, and is now on exhibition among the physical geology collections in Clarence Buckingham Hall (Hall 35). It was found, about four and one-half miles northwest of Boulder, Colorado, in a fine-grained sandstone (Lyon's sandstone) of the Pennsylvanian age, estimated to be 250,000,000 years old.

Rain drops not accompanied by high winds produce circular pits margined by elevated rings, whereas, when driven by strong winds, they make elliptical pits with greater depths and higher margins on the sides toward which the rain drops and wind are directed. This is because the velocity of the wind drives the rain drops at a slant and with greater force. The Field Museum specimen shows these characteristic elliptical pits and rims elevated toward the

direction of the wind, but the pits are not as deep nor are the rims as high as they might have been had they fallen on muddy sediments instead of on sands. Mud, due to its greater cohesiveness and because it can be more easily squeezed, retains the impressions formed on it better than sand, which tends to roll and spread.

Another interesting but somewhat perplexing feature of the Field Museum specimen is that it does not contain as numerous imprints as might be expected, indicating that the wind either blew hard and that the rainfall was light, or that the impressions were caused by hail stones, which are usually fewer numerically than rain drops, and which, when accompanied by high winds, also descend at a slant and produce similar elliptical pits and elevated rims. No convincing proof that the impressions were made by hail stones has yet been found, but the specimen is still being studied. If conclusive evidence that the impressions are hail imprints is found, they will be, to the knowledge of the writer, the first of their kind ever brought to light.

Preservation or "fossilization" of rain drop or hail imprints, like those of mud cracks and foot prints of animals, is simple in its nature if conditions are favorable. Rain drops falling on soft, but not fluid muddy or sandy flats, left exposed after the recession of floodwaters, leave their imprints. Exposure for a time to sun and air desiccates and hardens the flats and with them the imprints. These may later be covered with wind-blown sand or silt and once thus covered they are protected from destruction by further inundation of the mud flats. By continued deposition on the top, the imprints are buried deeper and deeper. Later, after the sediments have become hardened by pressure and cementation into rock, the beds of shale or sandstone, depending on the nature of the deposits, may be exposed by erosion, revealing a secret of the past as in this case.

Birds of Yucatan Presented by Melvin A. Traylor, Jr.

Representatives of more than eighty species of birds, native to the Yucatan peninsula of Mexico, have been presented to Field Museum by Mr. Melvin A. Traylor, Jr., of Chicago, who collected them last summer during a sojourn of several weeks in that region.

Mr. Traylor at present is also contributing his services to the Museum, as a volunteer worker in the Division of Birds, where he is engaged in classifying and studying the specimens in collaboration with Mr. Rudyerd Boulton, Curator of Birds. Included in the collection, which is notable for the varieties represented, are a number of important species of hawks which will make a valuable addition to the extensive series of birds of prey inaugurated by the late Mr. Leslie Wheeler, former Trustee of the Museum.



Roy, Sharat Kumar. 1939. "Rainstorm 250,000,000 Years Ago Recorded in Fossil Imprints." *Field Museum news* 10(1), 2-2.

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