MARIANAS EXPEDITION EXCAVATES ANCIENT 'GHOST HOMES'

By ALEXANDER SPOEHR
CURATOR OF OCEANIC ETHNOLOGY

Its field work completed, the Museum's 1949–50 Anthropological Expedition to the Marianas Islands has returned to Chicago, where the bone and stone tools, pottery,

'THE HOUSE OF TAGA'

Massive stone columns on the island of Tinian. Part of the capstone on top of the column in the background has broken off. The one in the foreground has broken off, too, probably under the weight of its capstone. Column with capstone is more than 16 feet high.

ornaments, and all the other objects and artifacts excavated from the shores of those far-off Pacific islands await the patient study necessary to unravel the secrets of a past lived hundreds of years ago by men long since dead and forgotten. The Museum for many years has maintained an interest in the peoples and cultures of the Far East and the Pacific. A major objective of the Marianas expedition was to push forward the understanding of man's early history in that section of the Pacific called Micronesia, in which the Marianas lie. Most of Micronesia is administered today by the United States, as a United Nations trust territory, the islands having been captured from Japan in World War II.

A previous BULLETIN article described some of the earlier excavations conducted in 1950 by the Museum on Saipan, where the headquarters of the expedition were maintained. Although the final results of the work will not be known until the field collections have been studied thoroughly, in this article the remaining excavations of the Museum expedition will be briefly described.

GHOSTS AND STONE COLUMNS

The characteristic feature of most of the surviving prehistoric sites in the Marianas are groups of stone columns or pillars. Locally, these are called *latte*. Many of the Chamorros—the native people of the Marianas—believe that these *latte* mark ancient graveyards that still remain the homes of ghosts of the dead of olden times. These ghosts wander among the living today and can be seen as vague shapes and apparitions, particularly at night or just at dusk. They have the power to harm the living by causing illness, and so are feared and avoided. It took a great deal of diplomacy and tact to convince the native digging crew that if excavations at *latte* sites were carried on in a properly respectful manner the ghosts of the ancient dead would not harm those that had come to pry into the secrets of the past.

The *latte* sites are indeed burial places. They are for the simple reason that the stone pillars, or *latte*, were the foundation posts for houses, and the ancient dwellers of these houses had the custom of burying their dead under the house, or immediately to the seaward side of the house. The stone pillars are not gravemarkers, but merely the most solid type of house post available to the original builders.

LATTE SITES OF TINIAN

The previous BULLETIN article described the excavation of two *latte* sites on Saipan. Following the completion of the Saipan excavations, the expedition shifted its activities to the nearby island of Tinian—known to the modern world as the base from which the first atom bomb of World War II was flown to Japan to be dropped on hapless Hiroshima. On Tinian two major *latte* sites were dug. One of the expedition's objectives was to find a *latte* village site as undisturbed as possible—the Saipan sites had been considerably disturbed—and we were fortunate in locating a relatively intact village, which we called the Blue Site, as it lay directly back of a beach designated by invading American marines during the war as Blue Beach. A second objective of the expedition on Tinian was to investigate the largest *latte* house in the Marianas, known as the House of Taga. Taga is an old Chamorro culture hero, a man believed to have been of great size, who built his house of giant stone pillars on the shore at Tinian's harbor.

THE BLUE SITE

The Blue Site consisted of a dozen large, stone-pillared houses strung end-to-end back of, and paralleling, the beach. At one time there may well have been additional houses, whose pillars have since disintegrated. At the center of this string of houses was the largest structure, with pillars over 9 feet high and with an over-all length of 60 feet. Probably this center house belonged to the local chief, or served a communal purpose. Back of the houses, the earth was found to contain areas densely filled with charcoal and broken utilitarian pottery, indicating that this was the area where the cooking was done. To the seaward side, a number of small refuse mounds were found, where unwanted trash was dumped. As in the case at Saipan, burials were found under the houses and toward the seaward side. And fortunately, as was also the case on Saipan, the fears of the digging crew were allayed by the careful and respectful manner

SOUTH PACIFIC 'DIG'

Chamorro workmen commencing excavations on an ancient "latte" or stone-pillared house at the Blue Site, Tinian, for the Museum's Archaeological Expedition to the South Pacific.

in which the burials were unearthed. The men were further satisfied that the ghosts of these ancient dead would be honored to have their bones repose in the modern steel storage cases at the Museum, in company

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THIS MONTH'S COVER

The king of Arctic beasts is shown in our cover illustration. The polar bear, *Thalarctos maritimus*, is truly a "maritime sea-bear." It is a veritable symbol of the polar region. It is the only member of the bear group that swims boldly at sea, seeking its food on ice floes. Its long, yellowish-white fur blends in with its normal background of ice and snow, over which it hunts for seals. The polar bear adjusts itself so well to life in warmer climates that it is a familiar sight in zoos and is known to every school child in our larger cities. The cover picture shows part of a habitat group in Hall 16.

NEW FOSSIL REPTILE AND AMPHIBIAN EXHIBITS

By RAINER ZANGERL
CURATOR OF FOSSIL REPTILES

The Division of Vertebrate Paleontology has completed the first three exhibits in a program of remounting the superb skeletons of early reptiles and amphibians received from the University of Chicago as a gift. These exhibits may now be seen in Ernest R. Graham Hall (Hall 38).

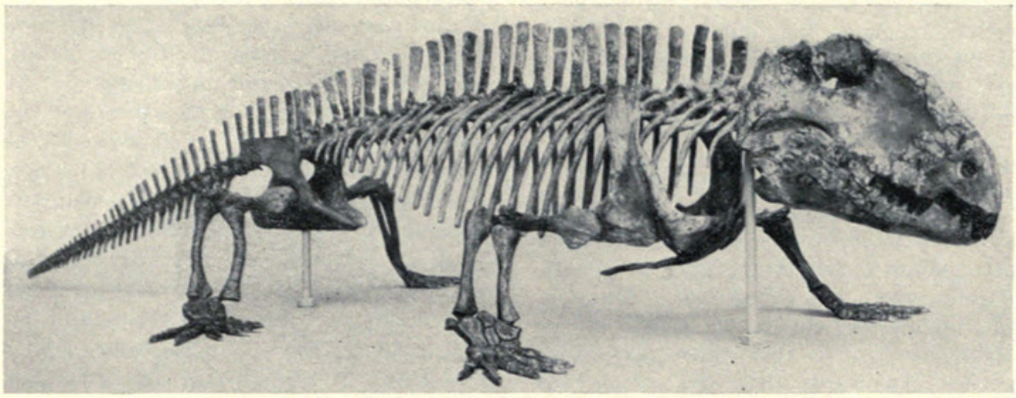
The amphibian and early reptile exhibits were designed to answer a number of questions pertinent to the current views about the origin of these animals, as well as to show them as free-mounted skeletons. There is little doubt in the minds of most paleontologists that the amphibians evolved from fishes, and among the latter from a group known as lobe-fin fishes, or crossopterygians.

We do not yet know a specific animal that is clearly intermediate in its bodily structure between the fishes and the amphibians. We are thus left to wonder how, for instance, the paired fins of the ancestral fish became walking limbs in the amphibian. The process must have involved not merely the appendages but also a large portion of the body. The fins of a fish suspended in water are not used, ordinarily, to support the weight of the body. They are attached to small girdle bones and muscle groups at the lower sides of the fish. The limbs of an animal walking on land, however, must support the entire weight of the animal. Thus the major difference does not lie in the actual shapes of the fins and the limbs but in their connections with the principal supporting structures of the body as a whole.

WIDE VARIATIONS

In speaking of early amphibians we are inclined to think of them only as a group of animals that arose from the fishes and in turn led to the origin of the reptiles. We should not forget, however, that the amphibians underwent adaptive radiation on their own. Many of them became specialized swimming predators, bottom-dwelling scavengers, mud-burrowers, and some were land-dwellers much as the early reptiles were.

It can be stated, as has been done in these exhibits, that the amphibians pioneered and the reptiles completed the conquest of the land. The most important step in this process was probably the evolution of a "land egg," an egg that is so constructed that it will not dry out readily, even though its shell must be porous, and will provide the developing embryo with enough food substances to complete its early stages of organ formation and growth inside the protected enclosure of the egg shell.



NEW ADDITION TO FOSSIL REPTILE EXHIBITS

Skeleton of Bradysaurus baini, a sizable pareiasaur reptile from the Karroo of South Africa. The specimen is displayed in Ernest R. Graham Hall (Paleontology—Hall 38).

All this, however, is not enough. The early development of the embryo itself had to be modified in accordance with the changed circumstances of development. The embryo had to be enclosed in a separate fluid-filled container, and a sack to receive the waste products had to be provided. Numerous embryonic blood vessels cover the latter and the food-containing yolk sac, and serve to carry oxygen to and carbon dioxide away from the embryo. Needless to say, the conquest of the land by the reptiles involved far more changes than one would be led to believe by comparing the rather similar construction of the skeletons of early amphibians and reptiles.

MANY RETURN TO WATER

Having once conquered the land, a great many reptiles returned to the water. Some of them became swamp dwellers, others went to sea. Among the latter are the well-known ichthyosaurs (fish-lizards) whose external appearance is that of a fast-swimming shark, the plesiosaurs whose body has been described as resembling a snake pulled through a turtle, and many other kinds that lived entirely in an aquatic environment.

The third exhibit houses the unbelievably bulky skeleton of the pareiasaur, *Bradysaurus*, a native of South Africa. The bones of this barrel-bellied vegetarian are so large with respect to the over-all size of the skeleton that few students can agree as to the probable posture the animal assumed when alive. It is reasonably safe to say, however, that *Bradysaurus* was a sluggish animal and spent most of its days in shallow lakes and swamps. There, the unquestionably great weight of its body would have been largely supported by the water.

MARIANA 'GHOST HOMES'—

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with distinguished skeletal friends from many other parts of the world.

THE HOUSE OF TAGA

The second *latte* site at Tinian—the House of Taga—is truly impressive, despite the fact that all the stone pillars except one have collapsed. Originally, there were twelve massive stone pillars, each surmounted by a capstone, the pillar and capstone rising to a height of 16 to 17 feet. Each pillar and capstone together weighed approximately 15 tons. The quarry from which these stones came is located about a mile south of the site. Although it is probable that the pillars at the House of Taga were erected through the use of an earth ramp, how they were transported from the quarry by a people who—so far as we can tell—had no knowledge of the wheel remains a mystery, if one does not accept the ancient Chamorro legend that for a being with the great strength of the giant Taga, the construction of such a house was no great feat.

The House of Taga represents a final flowering of the prehistoric Chamorro preoccupation with bigger and better house columns. At the House of Taga, the expedition sunk a series of test trenches into the subsoil, not so much to find artifacts contemporary with the Taga *latte* as to find out what lay beneath them. At the Blue Site the soil was so shallow that a previous occupation was precluded. The House of Taga, however, was literally built on sand—an old dune at least 20 feet in depth. In the test trenches, pottery was found underlying the Taga *latte* to a depth of some six feet, indicating that the site had been occupied by a people earlier than the builders of Taga's House.

LATTE CULTURE AND ANTECEDENTS

The many *latte* sites of the Marianas are sufficiently alike and the material recovered from them sufficiently similar so that we can allocate them all to a *latte culture*. This culture reached its climax with the House of Taga. In addition to *latte*-building, the culture is characterized by a distinctive set of pottery types, by a mixed fishing-agriculture economy, and by a characteristic set of shell, bone, and stone tools. From documentary and archaeological sources we know that the *latte culture* endured until the Spanish conquest of the Marianas in the 16th and 17th centuries, but how far back

in time the culture goes is still a matter of conjecture. However, on several sites on Saipan and Tinian, the Museum's excavations found evidence of a more ancient non-*latte*-building occupation. How old this earlier occupation is cannot yet be determined with any degree of exactness, but the geological evidence indicates a probable antiquity of some 750 to 1,000 years. Though man may have been in the Marianas at an even earlier time, at present our still tentative time scale cannot penetrate further back than this approximate date.

The story of those early wanderers who first voyaged into the expanses of the Pacific's blue waters is still largely unknown, but the Museum expedition was successful in pushing the anthropologist a step ahead in his task of reconstructing, on the sound basis of knowledge that only archaeology can provide, the culture history of the vast Oceanic area.

MUSEUM STAFF CHANGES

Two of the Museum's Curators were retired from active duty as of December 31, 1950. They are William J. Gerhard, Curator of Insects, and Paul C. Standley, Curator of the Herbarium. As both are desirous of continuing scientific research, they will retain connection with the Museum, each having been appointed Curator Emeritus in his division.

Mr. Gerhard is a veteran of nearly fifty years' service on the Museum staff—the longest service record of any staff member now living. He joined the staff in 1901 as Assistant Curator of Insects, became Associate Curator of Insects in 1921, and Curator of Insects in 1936. Born in 1873 near Reading, Pennsylvania, Mr. Gerhard was educated in the schools of that area and at Temple College in Philadelphia. He was Jessup Student on Insects at the Academy of Natural Sciences in Philadelphia from 1895 to 1898. Before coming to the Museum he collected butterflies in Bolivia. In the course of his duties here he engaged in local entomological field work. He is the author of various papers on entomological subjects. He is a member of several scientific societies, including the American Association for the Advancement of Science, the Entomological Society of America, the Illinois State Academy of Science, and the Chicago Entomological Society.

Mr. Standley, as Curator Emeritus, will reside permanently in Honduras and there will continue for the Museum his Central American plant studies that have been his principal activity for several years past. He joined the staff of the Museum in 1928 as Associate Curator of the Herbarium and became Curator of the Herbarium in 1937. Mr. Standley was born in Avalon, Missouri, in 1884. He completed his education at Drury College in Springfield, Missouri, and New Mexico State College, Mesilla Park, earning degrees of bachelor of science and master of science at the latter. From 1906 to 1909 he was a member of the faculty at New Mexico State College. In 1909 he was appointed to the botanical staff of the United States National Museum, Washington, D.C., where he served until 1928 and achieved a notable reputation, which was further enhanced by his work later at Chicago Natural History Museum. Mr. Standley is the author of many important botanical works. Among the most notable published by Chicago Natural History Museum are *Flora of Yucatan*, *Flora of the Lancetilla Valley, Honduras*, *Flora of Costa Rica*, *The Forests and Flora of British Honduras* (in collaboration with Samuel J. Record), *Common Weeds*, several families of plants for *Flora of Peru* (by J. Francis Macbride), and *Flora of Guatemala* (in collaboration with Dr. Julian A. Steyermark). Works published by the United States National Museum include *Flora of New Mexico* (in collaboration with E. O. Wooton), *Flora of the District of Columbia* (with A. S. Hitchcock), *Trees and Shrubs of Mexico*, and *Flora of Glacier National Park*. Other publications include monographs of the families Allioniaceae, Chenopodiaceae, Amaranthaceae, and Rubiaceae in *North American Flora*, published by the New York Botanical Garden; *The Flora of Barro Colorado Island*, published by the Arnold Arboretum; and *Lista Preliminar de las Plantas de El Salvador*, in collaboration with Dr. Salvador Caldéron, published privately in San Salvador. Mr. Standley conducted the following expeditions for Chicago Natural History Museum: Sewell Avery Botanical Expedition to Guatemala, 1938–39; Stanley Field Botanical Expedition to Guatemala, 1940–41; Chicago Natural History Museum Expedition to Middle Central America, 1946–47; and expeditions to El Salvador, Honduras, and Nicaragua in 1948, 1949, and 1950.

Promotions

The vacancy in the curatorship of the Division of Insects caused by the retirement of Mr. Gerhard has been filled by appointment of Rupert L. Wenzel as Curator of Insects. Mr. Wenzel first became associated with the Museum as a volunteer assistant in the Division of Insects in 1934 while still a student. After completing his professional preparation at Crane Junior College, Central Y.M.C.A. College, and the University of Chicago, he was appointed Assistant Curator of Insects in 1940.

Also effective January 1, Henry S. Dybas, Assistant Curator of Insects, was promoted to Associate Curator of Insects. Mr. Dybas has been associated with the Museum since 1941, beginning as Assistant in the Division of Insects. He completed his education at Wilson Junior College, Central Y.M.C.A. College, and the University of Chicago.

Dr. Julian A. Steyermark has been appointed Curator of the Herbarium to succeed Mr. Standley. Dr. Steyermark joined the Museum in 1937 as Assistant Curator of the Herbarium and was named Associate Curator in 1948. Dr. Steyermark was educated at Washington University, Henry Shaw School of Botany, and Harvard University and has earned degrees of bachelor of arts, master of science, master of arts, and doctor of philosophy. Before coming to the Museum he was on the staff of the Missouri Botanical Garden in St. Louis, biology instructor in a high school at University City, Missouri, and ecologist and taxonomist on a special survey of the Clark National Forest in the Ozark Mountains of Missouri.

SOCIAL SECURITY EXTENDED TO MUSEUM EMPLOYEES

Effective January 1, employees of the Museum were brought under the provisions of the social security law as recently amended by Congress to cover non-profit institutions of this type. To make this practicable, the Museum's own private pension plan was adjusted by action of the Board of Trustees. The private pension will continue on a modified basis in combination with the social security benefits. The combination of the two will give each employee a considerably larger pension than either plan would provide by itself.

Audubon Society Lecture Offered January 13

The second lecture in the current series of the Illinois Audubon Society will be given Saturday, January 13, at 2:30 P.M. in James Simpson Theatre of the Museum. The lecture is "Saguaroland," by Karl Maslowski of Cincinnati. Mr. Maslowski, distinguished naturalist-photographer, has appeared before audiences in the Museum several times. "Saguaroland," a color film made in Arizona, shows great canyons, desert scenes, birds, and the giant cactus.

Admission is free to the general public.

Potentiality of a Cell

If a single cell, under appropriate conditions, becomes a man in the space of a few years, there can surely be no difficulty in understanding how, under appropriate contions, a cell may, in the course of untold millions of years, give origin to the human race.

HERBERT SPENCER, in *Principles of Biology*

Of all the funny things that live, in
Woodland, marsh or bog
That creep the ground or fly the air, the
Funniest thing's a frog. —ANONYMOUS