

FLUORESCENT MINERALS

By HENRY W. NICHOLS
Chief Curator of Geology

A recent addition to Clarence Buckingham Hall (Hall 35) promises to be one of the most attractive displays in the Department of Geology. It is an exhibit illustrating the strange phenomenon of mineral fluorescence.

Fluorescence is a property whereby some substances transform any invisible ultra-violet light of short wave length which penetrates them into visible rays of longer wave length. Ordinary bodies are invisible when illuminated by ultra-violet light alone, but fluorescent bodies glow with colors which vary according to the character of the body illuminated and have no relation to the ordinary color of the object.

Although numerous minerals fluoresce, few do so strongly enough for effective display. Hundreds of minerals were tested before thirty specimens, representing twelve mineral species, were selected for this collection. As the fluorescent glow, brilliant when seen under proper conditions, is completely masked by the ordinary color of the minerals when they are exposed to more than the weakest daylight, it was necessary to design a special case so that the fluorescence could be seen under favorable conditions and in a dim light. The specimens are mounted on a vertical panel at the back of a case three feet deep. The panel and interior of the case are black. Access of daylight is further impeded by a screen in front, so placed that there is a passage three and a half feet wide between it and the case. From this passage the exhibit can be inspected. For forty-five seconds of each minute the specimens are exposed to ultra-violet light from a nico lamp above; this is followed by an illumination lasting fifteen seconds by ordinary artificial light.

During the period of exposure to ultra-violet the minerals glow, some with brilliant blues and greens and some with less brilliant yellows and reds. These colors are not like ordinary surface colors but are more a glow of pure spectral light which seems to come from inside the mineral. When the light changes from ultra-violet to ordinary the brilliant colors abruptly disappear, and the minerals resume their ordinary appearance with colors dull and commonplace after the fluorescent glow.

LARGEST AND SMALLEST FROGS

Specimens of the world's largest and smallest kinds of frogs, both of extremely rare species, are exhibited together in Albert W. Harris Hall (Hall 18). The big one is known as the giant bullfrog or *Rana Goliath*, and in life it weighs about ten pounds. It is found in southern Cameroon and French West Africa. The little one, called pygmy frog or *Phyllobates limbatus*, comes from Cuba, and when alive weighs only about one twenty-thousandth as much as the giant frog. It would take nearly 150 of the pygmy frogs to tip a scale to the one-ounce mark.

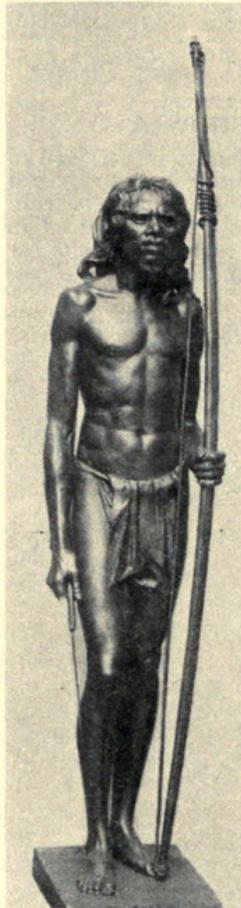
The Museum exhibits are reproductions from actual specimens, created by the special processes, developed by Staff Taxidermist Leon L. Walters, now being generally used for reptiles and amphibians, and many other kinds of animals which if mounted in the usual way do not make lifelike representations.

It is extremely difficult to obtain specimens of either of these frogs. The giant frogs are regarded as a rare delicacy by Negro tribes, and after they have eaten one they preserve its thigh bones for use in divination and religious ceremonies. As a result of this high regard, white explorers seeking specimens find that the natives hold

these frogs as almost priceless. They are represented in few museums of the world. The largest known North American bullfrog weighs but one and one-half pounds.

PRIMITIVE VEDDA OF CEYLON IN RACES OF MAN SERIES

Among the Asiatic types in the Races of Mankind series of sculptures by Malvina Hoffman in Chauncey Keep Memorial Hall (Hall 3) is a full length figure of a Vedda,



Photograph copyright Field Museum

Vedda
Sculpture by Malvina Hoffman of a primitive native of Ceylon.

with his characteristic hunting equipment of bow and arrow.

The Veddas are a primitive hunting people living in southeastern Ceylon. They are rather small, averaging about five feet in height, and are dark brown in color. Their hair is long, black, coarse, and wavy or slightly curly. The skull is long but quite small, with retreating forehead and often prominent brow ridges. The face is fairly broad; the nose rather flat with depressed root; lips thin, and chin pointed.

The few pure blooded Veddas now remaining live in bark huts, shallow caves, or rock shelters in the deep jungle, to which they have retreated before the invading Singhalese. They were formerly much more numerous, and represent the remnants of an earlier, pre-Dravidian population, possibly the aboriginal inhabitants of this

region. They have bows and arrows, and live chiefly by hunting and fishing, together with what jungle produce they can find. Honey is an important element in their food supply, and of value also in obtaining, by trade, iron for their arrows and axes, and often a little cloth and rice. The Veddas cultivate small patches of vegetation in the jungle to help out when game and honey are scarce. A hunting dog is their only domestic animal. Fish are caught by poisoning.

They speak a modified Singhalese in which are a few alien words, possibly all that remains of their original language. They are monogamous, and are divided into matrilineal exogamous clans. Their religion is essentially a cult of the dead.

Photographs of the figure of a Vedda, as of nearly all the sculptures in the racial series, may be purchased at the Museum; also, post cards and post card sets. In addition, special arrangements may be made whereby individuals or institutions so desiring may obtain reproductions in bronze, one-third the size of the original sculptures. Those interested should communicate with the Director of the Museum.

FEBRUARY GUIDE-LECTURE TOURS

Conducted tours of exhibits, under the guidance of staff lecturers, are made every afternoon at 3 P.M., except Saturdays, Sundays, and certain holidays. Following is the schedule of subjects and dates for February:

Week beginning February 1: Monday—Melanesia; Tuesday—Birds of Unusual Interest; Wednesday—Native Philippine Life; Thursday—General Tour; Friday—The Story of Coal.

Week beginning February 8: Monday—Field Museum Bronzes; Tuesday—Peoples of the Far North; Wednesday—Skeletons, Past and Present; Thursday—General Tour; Friday—The Cave Peoples.

Week beginning February 15: Monday—Masks of Many Lands; Tuesday—Our Native Trees; Wednesday—Gems and Semi-precious Stones; Thursday—General Tour; Friday—Amphibians and Reptiles.

Week beginning February 22: Monday—Animals at Home; Tuesday—Egyptian Hall; Wednesday—Prehistoric Life; Thursday—General Tour; Friday—The Hall of Plant Life.

Persons wishing to participate should apply at North Entrance. Tours are free and no gratuities are to be proffered. A new schedule will appear each month in FIELD MUSEUM NEWS. Guide-lecturer's 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 Howard Scott Gentry—420 herbarium specimens, Mexico; from Museo Nacional—1,102 herbarium specimens, Costa Rica; from Glidden Company—20 soy bean products; from Professor Grijalva Fernandes—10 herbarium specimens, Brazil; from Bailey Hortorum, Cornell University—328 herbarium specimens, Mexico; from Dan P. Mumbroe—a specimen of talc, Montana; from Chicago Historical Society—51 specimens of fossil insects, fish, and vertebrates, and 2 of copper bottoms; from Robert L. Fleming—52 beetles, scorpions, and other insects, India; from Lincoln Park Zoo—a lizard and 4 snakes; from Leon Mandel—a tree frog and a rhinoceros iguana, Haiti and Cuba; from D. Dwight Davis—149 insects.

NEW MEMBERS

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

Life Members

Walter J. Cummings

Associate Members

Mrs. Katharine W. Baldwin, John Clay, Jonathan Miller Cook, Dr. Gustav Egloff, Dr. Henry C. A. Mead, Dr. John R. Pontius, Miss Dorothy Sears, Oscar U. Zerk, Otto A. Zinke.

Annual Members

N. J. Bennett, Dwight S. Bobb, Samuel Cole, Joseph F. Darlington, Walter Daspit, Mrs. William J. Davies, Louis E. Diamond, Karl Eitel, Charles W. Fry, Arthur W. Fulton, Arnold Gingrich, Emil Graf, Mrs. Itha Griesemer, Mrs. Charles C. Haffner, Jr., Frank X. Henke, Hyman I. Henner, S. C. Jennings, Mrs. J. Sylvan Kaufman, Miss Hilda M. Kemper, Miss Marie Killelea, J. Andrews King, Mrs. Edward Landsberg, Mrs. E. Loewenstein, Emanuel Marks, Miss Bertie E. Miller, Joseph Callow Reynolds, Oron E. Richards, F. W. Schmidt, Elmer E. Schmus, John I. Shaw, William A. Sizer, N. C. Webster, Linn White, Howard L. Willett, George A. Works.

Memorial to Rev. J. A. Nieuwland

At memorial services held January 10 at the University of Notre Dame for the late Rev. Julius Arthur Nieuwland, Field Museum was represented by Curator Paul C. Standley. Father Nieuwland, celebrated for his contributions toward synthesization of rubber, was widely known also for his investigations of the flora of the Great Lakes region. He was the founder of a scientific journal, *The American Midland Naturalist*. To the *Flora of the Indiana Dunes*, published by Field Museum, he contributed an account of the genus *Persicaria*.



Nichols, Henry W. 1937. "Fluorescent Minerals." *Field Museum news* 8(2), 4-4.

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