

SPECIAL EXHIBIT SHOWS EXOTIC MUSICAL INSTRUMENTS

By PATRICIA McAFEE
ASSOCIATE EDITOR

MUSIC is often called the universal language. This is appropriate in the sense that all people participate or at least listen to some form of music. But in another respect music is no more communally universal than is speech. Man has the ability to speak and this has led to the de-



MUSEUM 'COMBO' IS BORN

E. John Piffner (left), known in jazz-music circles as well as for his work as Museum Staff Artist, and Allen S. Liss, Custodian of Collections—Anthropology, try a few "hot notes" on exotic instruments. Piffner is playing a nagasaram, a type of clarinet from India. Liss essays a wild beat on a saron, Javanese form of xylophone.

velopment of distinct languages which enable him to communicate with other human beings. But there still is no universal language with which all people can communicate—and just so, there is no music that is understandable, or melodious, to all ears.

We with our Western background would recognize music of many other cultures only as sounds or noises. But in the context of the society which engendered it, these other forms of music possess a definite communicative function—a function largely limited to one particular culture alone. For that matter, there are definite musical cleavages among groups within our own society. To the "long-hair music" group most jazz, and all rock-'n'-roll are as separate and uncommunicative as the music of the most primitive culture, while to some of the adherents of these varieties of American-European music, both the old masters and the modern classics are equally incomprehensible.

WIDE VARIETY IN EXHIBIT

"The Music Makers," as a current special exhibit of exotic musical instruments is called, exemplifies the great diversity in the "universal language" of music by presenting a wide variety of musical instruments from many parts of the world. Music-making de-

vices of North and South American Indians, and of peoples of Asia, Africa, and Oceania make up the exhibit, which is in Edward E.

THE MUSIC MAKERS, special exhibit described in the accompanying article, will continue on display through August 31, in Edward E. and Emma B. Ayer Hall (Hall 2). For music lovers attending the Grant Park Summer Concerts offered by the Chicago Park District, the Museum will extend its visiting hours to 8 p.m. on Wednesday and Friday evenings through August 12. Dinner will be served in the Cafeteria to 7:30 p.m.

and Emma B. Ayer Hall (Hall 2) and will remain on display until August 31. In one respect most of the exotic instruments are similar to those of our own civilization—most of them fall into the same three main divisions of strings, winds (including reeds), and percussion.

Museum visitors will find some of the music makers in the exhibit totally unfamiliar, while others will register as familiar because of their resemblance in form to Western instruments. This similarity in many cases may exist only in appearance, however; the sound produced is very apt to be foreign to our ears because we are accustomed to the fixed tonal values of Euro-American music. The function is likely to be equally alien to our conception of the use of musical instruments.

In Western societies music has taken on an importance in its own right—music for the sake of music. It is listened to chiefly for the purpose of deriving pleasure. Many of the music makers displayed in this exhibit were used to perform definitely less secular functions. Some were played in the theatre and as an accompaniment to the dance, but thespian and terpsichorean arts may have had religious or ceremonial overtones now rarely present on the stage or in Western music. Other instruments are known to have been used strictly in religious ceremonies. There is still considerable mystery about the use and method of playing many non-Western instruments, particularly those which are ancient.

SPECIFIC INSTRUMENTS

The use of a small double whistle, one of the archaeological pieces displayed, is unknown. It is the product of 15th century Aztec civilization in the Valley of Toluca. The whistle produces three tones and has a small hole in the back which probably enabled the owner to insert a string to carry

it around his neck. Little else is known about it.

Several Tibetan instruments are displayed. Tibetan civilization traditionally has been oriented to religion, and the musical instruments of this culture play a large part in rituals. A flute made from a human thigh bone, a conch-shell trumpet mounted with silver and turquoise, and a *lapa*—a 9-foot



CO-ED COMPLETES TRIO

Susanne Fried, Antioch College student-worker temporarily employed at the Museum, plays a sitar—a guitar from India.

long copper trumpet, were used in religious ceremonies and, as in the case of the conch-shell trumpet, were also part of the religious paraphernalia which resided on the altar.

Primitive societies are chiefly concerned with music as an important factor in religious ceremonies, suggesting that music may have originated from religious practices and later, in some cases, assumed a more secular function. In the exhibit is a friction drum from New Ireland that was used in rituals to honor the ancestral dead. It is reported that preceding the ceremony a number of men, forming a sort of orchestra, hid themselves in the second story of the house where representations of ancestors were displayed. At the proper time the men stroked the drum with their hands, heating it by friction, and producing a sound which gave the illusion of the presence of supernatural beings.

The use of the friction drum to produce noises suggesting the supernatural is similar in this respect to the use of the bull-roarer by Melanesian people of the Gulf of Papua in New Guinea. A bull-roarer is a long, narrow piece of wood attached to a string which makes a whirring or humming sound when it is whirled in the air. Bull-roarers are found in many areas of the world and are mainly ceremonial in use. The wide geographic range, and the diversity of peoples among whom bull-roarers are found, is illustrated

(Continued on page 6, column 3)

'FEAST OF DEAD' RELEASED HURONS' SOULS

By GEORGE I. QUIMBY

CURATOR OF NORTH AMERICAN ARCHAEOLOGY
AND ETHNOLOGY

THE HURON and their close relatives, the Tionontati or Tobacco Huron, lived in Ontario between Lake Simcoe and Georgian Bay and westward of Lake Simcoe to Lake Huron. The combined Huron and Tobacco Huron are estimated to have had a population of 45,000 to 60,000 persons at the beginning of the 17th century. However,

vested 390,000 bushels of corn annually and that they had 23,300 acres of corn under cultivation. There must have been miles of fields surrounding the Huron villages. So extensive were these fields that one French missionary got lost in them while walking from one village to another.

The Hurons had the most elaborate social and religious life of all the Indians living in the Upper Great Lakes region. They believed that the world was perched on the back of a giant turtle. The sun at night disappeared into a tunnel in the earth and came out at the opposite end each morning.

The supernatural creator of the world and of the Huron people was named Yoscaha. He was a benevolent spirit who lived in the sky. His grandmother, Ataensiq, seems to have been an evil spirit. There was also a class of numerous spirits called Oki who had power for both good and evil. The Oki were present in rivers, rocks, and other places, in animals, and in situations such as voyages, fishing trips, trade, war, and ceremonial feasts. The Oki seem to have been expressions of a power similar to the manitou of the Algonkian speaking peoples.

The power of the Oki was also present in amulets and charms of various kinds kept by the Hurons. The Oki manifested themselves to individual humans in dreams. The Hurons believed that dreams were the language of the soul.

The soul, according to the Huron, had five aspects or conditions of being. It animated the body and gave it life. It was possessed of reason. It enabled thinking and deliberation. It made possible affection for others. And it separated itself from the body after death.

VILLAGES OF SOULS

The Hurons believed that souls, after death, went to various villages of souls in the sky. These soul villages of the Huron afterworld were devoid of reward or punishment and supernatural life in them was essentially the same as natural life on earth.

Some souls after death followed the Milky Way, the road of souls, to a great soul village toward the setting sun. They journeyed to-

gether, dressed in fine robes and carrying their equipage, all taken with them in soul form from their common grave.

Other souls such as those of very old people and young children not capable of a long journey traveled to a different soul village less distant. Souls of Hurons killed in war also had a separate village.

Souls did not go to their respective soul villages until after an elaborate mass burial ceremony known as the Feast of the Dead.

Ordinarily when a Huron died his corpse was placed in a bark coffin raised on painted wooden posts nine or ten feet high, but those killed in war or drowned were buried in a flexed position in shallow graves. Souls of these Indians remained in the vicinity of the Huron villages. Infants were buried in the roads between villages so that their souls might enter passing women and be born again.

The Feast of the Dead was held at eight-, ten-, or twelve-year intervals. It was a national ceremony at which all of the dead from each Huron town were removed from their temporary graves and brought to a designated place for mass burial.

A SOLEMN SPECTACLE

In preparation for the Feast of the Dead the living Indians of each town and village removed the bodies from their temporary graves. The bones were lovingly stripped of remaining flesh and/or cleaned by relatives and mourners of the deceased. An eyewitness account from the missionary Jean de Brébeuf in 1636 follows:

"I was present at the spectacle, and willingly invited to it all our servants; for I do not think one could see in the world a more vivid picture or more perfect representation of what Man is. For, after having opened the graves, they display—all these corpses—long enough for the spectators to learn—what they will be some day. The flesh of some is quite gone, and there is only parchment on their bones; in other cases, the bodies look as if they had been dried and smoked, and show scarcely any signs of putrefaction; and in still other cases they are still swarming with worms. —finally, after some time they strip them of their flesh, taking off the skin and flesh (by handfuls) which they throw into the fire along with robes and mats in which the bodies were wrapped."

After being stripped of flesh the bones were placed in beaver skin bags or rearticulated and dressed in fine robes and adorned with bracelets and strings of beads. Some bags of bones were arranged to form human effigies that were ornamented with strings of beads and bands of long fur dyed red.

The bodies from each town and village having been prepared, they were then transported on the backs of the villagers to the spot designated for the mass burial. This

(Continued on page 6, column 2)



HURON BURIAL CEREMONY

An old print shows an artist's conception of a mass reinterment ritual that was believed by the Indians to release the souls of the dead.

by the middle of the 17th century their numbers had been reduced drastically by introduced diseases, war, and famine, and the tribal remnants had been driven from their homeland.

The Hurons lived in towns and villages some of which were protected by circular palisades. Within the towns and villages, houses were arranged in regular rows along streets and separated from one another for protection against fire. One of the largest of the Huron towns, Cahiagné, contained 200 large dwellings in which lived 4,000 to 6,000 persons.

The Hurons obtained their food by farming. In the cleared fields near their towns and villages they raised corn, beans, squashes, and sunflowers for sustenance and tobacco for smoking. The men cleared the land of trees and brush by cutting and burning, but the women planted the food crops, tended the fields and did the harvesting.

It has been estimated that the Huron har-

NAMING A ROCK

By BERTRAM G. WOODLAND
ASSOCIATE CURATOR OF PETROLOGY

EACH WEEK we receive rock specimens to be identified. Some come by mail and others are brought to us by visitors. Not infrequently we are asked what is the actual difference between various rocks and how do we know what names to give them.

First, what is a rock? A rock is an aggregate of one or more minerals, which are the naturally occurring chemical substances which make up the earth's crust. This geological definition of a rock includes not only



GRANITE SPECIMEN

It is composed of feldspar, quartz and biotite.

the solid and hard materials but also loose sands, clays, and volcanic ash. To the civil engineer concerned with constructional materials and foundations, however, a rock is something hard; the soft loose materials are referred to as earth or soil. The choice of name or names given to rocks has been much influenced by their use for certain purposes. For example in the building and monumental stone trade, "granite" is a name used for a wide variety of rock types many of which the geologist would not call granite.

The naming and classifying of rocks are rendered inherently difficult by the very great diversity of types and by the fact that few completely sharp distinctions can be made because of the many gradational varieties. However, a classification and an accepted system of naming of rocks are essential for purposes of comparison and descriptions of occurrences throughout the world. Such a system should, apart from just providing a name, ideally provide as much information as possible about the composition, nature, origin and relationships of a rock.

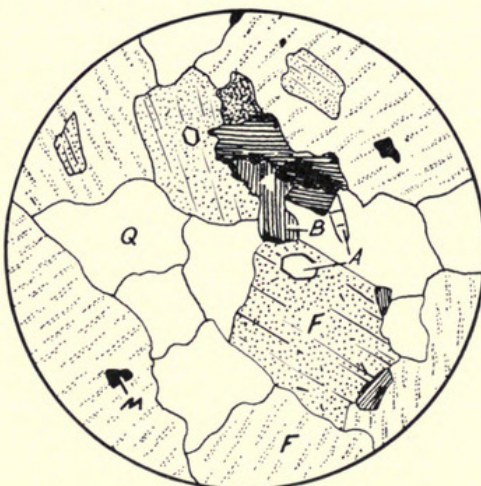
IMPROVEMENT IN CRITERIA

A major difficulty arises when the criteria for separating and naming the rock types are considered. Originally rocks were named

and described solely from their appearance to the naked eye or with a simple hand lens, and many of the names are still applied today, although often not in just the same way, as more detailed criteria are now used. About the middle of the last century a great impetus to the systematic detailed description, naming and classification of rocks was provided by the use of the polarizing microscope to examine very thin slices of rock (i.e., thin enough to transmit light). This enabled more accurate determination of the actual mineral species and their relative quantities in a rock to be determined. During the last one hundred years many rocks have been so examined and named and a number of complex scientific classification systems proposed.

At the present time rocks are named and classified on the basis of a number of criteria. Although in part these have a genetic significance, it still has not proved possible to erect an entirely genetic classification, and many of the criteria, for practical reasons, are thus of an arbitrary nature.

As an example of the difficulties involved mention might be made of the three main classes of rocks which are generally accepted and are based on origin. These are: (1) igneous—rocks formed from the cooling of hot molten material (magma) an example of which is volcanic lava; (2) sedimentary—rocks formed from material accumulated by the action of water, wind, glaciers, and gravity, the majority deposited in the sea forming such rocks as limestone and sandstone; (3) metamorphic—rocks which have been produced from pre-existing rocks by the action of heat and/or pressure, usually deep in the earth's crust, an example of which is marble. Now, while it is generally possible to classify



THIN SECTION OF GRANITE

The components are indicated as follows: F—feldspar; Q—quartz; B—biotite; M—magnetite; and A—apatite.

a rock as belonging to one of these classes, by applying certain simple criteria—e.g., sedimentary rocks usually possess well developed and characteristic stratification—it is by no means always so easy, particularly for small specimens brought into the laboratory by a

SPECIAL EXHIBITS

The following special exhibits are scheduled for the summer months:

Panorama of the Pacific, through July 15, Stanley Field Hall. This exhibit, which was the feature of Members' Night, May 8, displays selected material from the Fuller Collection of South Seas artifacts.

The Music Makers—Exotic Musical Instruments of the World. Through August 31, Edward E. and Emma B. Ayer Hall (Hall 2).

Indian Art of the Americas, August 1–September 28, Stanley Field Hall. Selected *objets d'art* from the North, Central, and South American collections of this and other leading museums. The exhibit coordinates with Chicago's Festival of the Americas in connection with the Pan American Games.

visitor and for which there is no field data, or which may be pebbles found in gravel or the soil. Some metamorphic rocks may have many of the criteria of igneous rocks, particularly if they were derived from the latter or if under ultra-metamorphism the rock mass was so changed as to appear like an igneous rock. Volcanic ash, the product of explosive volcanic eruptions, may be deposited in the sea and be mixed with varying quantities of other sediments so that there may be a complete gradation from a pure volcanic ash to a sedimentary rock.

Geological classifications do not, of course, satisfy the civil engineer, who would wish to see a rock classification using criteria of engineering importance. So far this also has not been possible, but perhaps in time a way may be evolved to relate the purely geological system to one of value to engineers, miners and others concerned with working in or exploiting rocks.

CLASSIFICATION BY GEOLOGISTS

The criteria utilized by geologists are: (1) field occurrence, that is, the way in which the rock occurs in nature; (2) mineralogical composition; (3) the structure and texture of the rock—the way in which the mineral grains are aggregated together, and (4) chemical composition. Of these the most important criteria are texture, structure, and mineralogical composition. Sometimes these can be sufficiently ascertained with a hand lens to give a name to a specimen in the field. However, this is not always possible and the geologist has to be satisfied to use accepted and well understood field names of a broad nature, leaving until later the necessary detailed laboratory work. In the laboratory a binocular microscope, with magnifications up to 40 times, is of great value for determining the grain size, shape and the mineralogical composition of hand specimens. For further

details recourse must be made to microscopic examination of thin sections.

Thin sections of rocks are prepared by cutting a thin wafer of the sample, usually about one inch square, with a diamond saw. One side of this slice is then ground smooth with abrasive on a rotating lap wheel and the smooth surface is cemented to a glass slide (usually $1\frac{3}{4}'' \times 1''$) with a medium such as Canada balsam, which is liquid when hot, and hard and strongly adhesive when cold. The wafer is then ground thin on lap wheels using successively finer abrasive, and is finished off by rubbing on a glass plate with very fine abrasive until the standard thickness of 3/100 of a millimeter is attained. This thickness is determined by observing the optical properties of some known mineral under the microscope, e.g., quartz. The thin section is then covered with a thin glass cover slip which is also cemented to the slice with Canada balsam. The section is then ready for examination with the petrographic microscope, which is equipped with special apparatus for the observation of the optical properties of minerals. In particular, it has attachments for polarizing the light which passes through the thin section. In this way the optical properties of the mineral composing the rock are determined, and from them the kinds of minerals present, their quantities and arrangement and other data can be obtained. These are then used in the classification of the rock and in determining its origin and history. The polarizing microscope can also be used to examine crushed grains extracted from a rock to determine the identity of a mineral if the preparation of a thin section is not required, or to determine some of the optical data best obtained in this way even if a thin section is available. Most minerals are transparent in thin section but there are many which remain quite opaque, particularly the ore minerals, such as the ores of copper, lead and iron. These are microscopically examined by preparing highly polished surfaces and observing them in reflected light.

CHEMICAL TESTS USED

Chemical methods are often important aids in determining rock composition. Qualitative tests for minerals or elements help in determining mineral species while bulk quantitative analyses are important in comparing the chemical composition of rocks and understanding their modes of origin. It should be emphasized that rocks which have had widely different histories and have different mineralogic composition and different textures may have very similar chemical compositions, so that a chemical analysis alone is insufficient to determine a rock. For some rocks a chemical analysis is necessary to accurately identify and classify it, e.g., volcanic glasses which are devoid of minerals. In addition, other techniques may be brought into service to aid in determining the com-

position of rocks, e.g., X-ray methods to identify minerals, particularly very fine-grained aggregates such as clays.

However, the polarizing microscope remains the most useful, and essential instrument for the description, naming and classifying and elucidation of the origins of rock types.

There are a number of exhibits in the Museum illustrating the criteria used in the classification of rocks together with examples of some of the types. At the west end of Hall 34 (Physical Geology and Rocks) there are a number of cases concerned with the study of rocks, the common minerals which compose at least 99 per cent of the rocks of the earth's crust, and the classification and naming of the igneous, sedimentary and metamorphic rocks. In Clarence Buckingham Hall (Mineralogy and Meteorites—Hall 35) there is one exhibit showing how physical properties may be used to identify the minerals of a hand specimen.

FEAST OF DEAD—

(Continued from page 4)

was a ceremonial journey purposely drawn out over two or three days.

At the place selected for burial there was a large pit 30 to 60 feet square and up to 10 feet deep. At the edge of the pit was a high scaffold or platform. Bodies were hung from poles on this scaffold and bundles of bones were placed on the platform. After lengthy ceremonies and rituals in which the whole Huron nation participated, the bodies were placed in the pit along with beautiful fur robes, pottery, weapons, tools, ornaments, food, and utensils.

Hundreds of people were thus buried and thousands of useful articles were lavished upon the dead. At the end of the Feast of the Dead the souls of the Hurons buried in this way departed from Huronia and went to the various soul villages in the sky.

An appraisal of the Huron feast of the dead is available in the journal of the missionary, Théodat Gabriel Sagard, who witnessed it in 1623 or 1624. He wrote, "Christians, let us reflect a little and see if our fervors for the souls of our relatives—are as great as those of the poor Indians toward the souls of their fellow deceased, and we shall find that their fervors surpass ours, and that they have more love for one another in this life and after death than we, who say we are wiser and are less so in fact—."

Parking Space Expanded

Additional parking space has been made available to Museum visitors. When the free parking facilities at the north end of the building are filled to capacity, cars may be left in the lot at the southeast corner of the building where the Chicago Park District charges a flat fee of 25 cents between 10:30 A.M. and 6 P.M.

MUSIC MAKERS—

(Continued from page 3)

by the presence in the exhibit of one, similar in form and use, from the Hopi Indians of Arizona. On the Gulf of Papua a ceremony is performed in which the men of the village mass together and run, shouting, blowing shell trumpets, and whirling bull-roarers. The loud and weird noises they make are intended to indicate to the remainder of the village population, especially the women, that a great and monstrous creature has risen from the sea and has entered the men's clubhouse. Later masked figures emerge from the lodge, giving the impression that a supernatural event has occurred.

The Javanese have developed quite an elaborate type of orchestra to accompany their dances and theatricals. Our exhibit includes a number of the instruments used. One is a type of xylophone played on the same principles as our own similar instrument. It is fancifully carved and has painted animal heads as end decorations. It consists of a set of gongs increasing in size, and in depth of tone, hung in a frame.

In most primitive societies, important events of human life over which the individual has no control—especially birth, puberty, death (all of which are awesome even in a complex civilized society)—are celebrated by religious ceremonies aimed at providing an explanation of the mysteries of life. The most important function of music in these cultures is the observance of these ceremonies. In our society, too, birth and death are still basic themes in music, but our music generally has changed to strictly listening functions rather than the expression of the human experiences to which it relates.

"Fishing" Trips for Children

"Goin' Fishin'" continues as the theme of the Museum Journey for children through July and August. The Journey may be made any day. Children receive instructions at either entrance to the Museum. Those successfully completing this plus three journeys on other topics receive awards as Museum Travelers. After eight Journeys they become qualified for designation as Museum Adventurers, and after twelve as Museum Explorers. After sixteen Journeys a child becomes eligible for a final project and admission to a Museum Club.

Come and See Us Now

A Museum Member recently sent the following note along with a check for membership renewal:

"When I was 10 years old, I took my first visit with our school class. I have never forgotten that memorable trip. All children should make that trip. That first visit is still a wonderful memory of the Museum. I am 70 years old now. Best wishes. . . ."



Quimby, George Irving. 1959. ""Feast of Dead" Released Hurons' Souls."
Bulletin 30(7), 3–6.

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