The Metropolitan Museum of Art

Bulletin
Winter 1977/1978

DIRECTOR'S NOTE

Imagine a splendid array of fine musical instruments—whole orchestras—lying unseen and mute, awaiting only caressing hands and sensitive breath to quicken with sound. Except for minimal exposure, such was the state of the Museum's magnificent instrument collection for many years, until Mrs. André Mertens provided the means for permanent galleries in which to display some 800 of our most precious examples. Named in honor of her late husband, the renowned music impresario, the André Mertens Galleries for Musical Instruments opened in 1971 with a flurry of activities and much excitement. Considerable credit for organizing this grand exhibition is due Dr. Emanuel Winternitz, who was first keeper and later curator of the collection from 1942 until his retirement in 1973. He must be thanked as well for maintaining its integrity through some difficult years of administrative indifference. This comprehensive collection is indeed unsurpassed; unique in its potential within the Museum, and famous since its inception among students of mankind's musical heritage.

The Department of Musical Instruments' 4000 treasures—two-thirds of them of non-Western origin—are awesome in their chronological and geographic scope. From prehistory to the mid-1970s, from urban centers to the most remote habitations, this assemblage reflects an incredible range of achievement, both technological and artistic. That many of these instruments are very beautiful is apparent on these pages. That their tones are no less elegant you may grasp from the record accompanying this publication. Its selections were drawn from the Department's innovative radio series "Lend Us Your Ears," recently produced for international distribution with support from the National Endowment for the Arts and the Ampex Corporation. Important grants from other sources, notably the National Endowment for the Humanities, make possible some of the Department's other varied and stimulating activities.

The qualities of musical instruments can be fully understood only when the objects are played and heard. This condition places an unusual responsibility on the Department to restore, tune, record, and in every practical way make its collection accessible to qualified performers and instrument makers. Music historians, ethnomusicologists, record producers, and scholars of many disciplines are among those who literally come to grips with this wealth of primary source material. Alone among our curatorial departments, this collection, because of its nature, daily serves the purpose for which its elements were created. In a real sense these speak, or rather sing, for themselves, and with compelling harmony.

Shortly after our first instrument, a church bell, entered the Museum in 1884, Mary Crosby Brown began an unparalleled series of donations extending over a quarter-century and forming the nucleus of today's collection. A knowledgeable and enthusiastic amateur, Mrs. Brown sought a representative assemblage from the most primitive types to the most modern; to her, the educational value of an instrument was the chief criterion for its inclusion. That so many of her important gifts are truly striking landmarks of music history testifies to the strength of her conception. Generations of other donors, scores of purchases over the years, and now renewed interest—spurred by the Department's present curator and author of this publication, Laurence Libin—in research, restoration, cataloguing, and performance have amplified the collection's purpose, so that visitors to the André Mertens Galleries will truly enjoy a musical banquet of rare variety and excellence.

Philippe de Montebello
Acting Director

Cover: This pottery hunting horn with its blue-painted white glaze was decorative rather than functional. Possibly made to commemorate a special event, it certainly represents a great technical expertise on the part of the manufacturer. Germany, 18th-19th century. 89.4.1115. Photographed by Rudy Muller in the Museum's room from the Palais Paar. Vienna, 1769-1771. Purchase, Mr. and Mrs. Charles Wrightsman Gift, 63.229.1,2 A-H. Armchair: France, about 1730. Gift of Mr. and Mrs. Charles Wrightsman, 1971. 206.11

Frontispiece: Police informants disguised as basket-hatted musicians once gathered evidence while playing the shakuhachi (bamboo flute) in Tokyo's streets. Late 19th-century photograph

Unless otherwise credited, all instruments are from The Crosby Brown Collection of Musical Instruments, 1889

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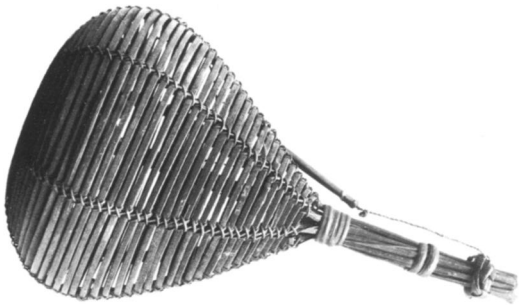
MUSICAL INSTRUMENTS
IN THE METROPOLITAN MUSEUM



SONOROUS MATERIALS

Sound arises from the vibration of some substance: a tightly stretched string, for example, or a taut membrane, an enclosed column of air, or a naturally sonorous material such as crystal or nephrite (see back cover). Solid materials that are resonant by nature are mankind's earliest and most widespread instruments, extensions of clapping hands and stamping feet. The rare piece of stone or metal that mysteriously rings when struck exerts a magical appeal; used as an amulet or ritual implement, it wards off evil by virtue of its beneficent tone. Clangorous bells sanctified places of worship and tinkling jingles protected wearers (including domestic animals) long before music rose to an art. Many idiophones, as these intrinsically sonorous objects are called, have a clearly defined pitch. A set of tuned idiophones, such as the wood bars of a xylophone, can produce a pleasing melody. Others of indeterminate pitch—rattles, cymbals, castanets, and the like—are useful for rhythmic effects, especially when accompanying dancing. Not all idiophones are struck or shaken; some are scraped, rubbed, or even plucked. Idiophones are heard everywhere, from the rattle in an infant's crib to the massive, awesome bells of a cathedral tower.

Opposite, above:

RATTLE. The blackened basketry globe encloses many large dried seed pods that, when shaken, produce a crisp, rustling sound. A smaller noise-maker of stiff grass is tied to the handle. Possibly Angola. H. 28 cm. 11.2.2

Opposite, below:

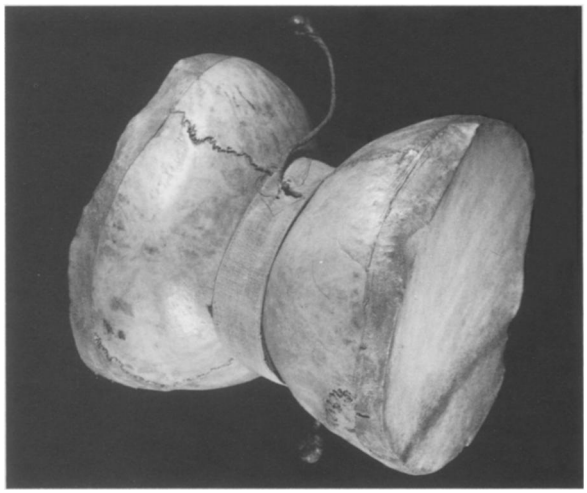
GLASSICHORD. Like many other instruments intended for music-making in the home, this invention enjoyed only brief popularity. Placed in a Regency table, graduated glass rods, sounded by a three-octave hammer mechanism, produce a ringing tone. Chappell & Co. London, about 1815. H. 74 cm. Gift of Richard S. Perkins, 1971.188

Below:

BRONZE GONG. Ferocious horned demons with lifelike glass eyes carry this gong, which might have been played in a theater orchestra or intended simply as a bizarre ornament. Japan. H. 162 cm. 89.4.2016

SKINS

A skin or parchment membrane held taut around its edges forms a vibrating surface when struck or rubbed. Instruments based on this principle are called membranophones. Drums are the most familiar of this widespread but little-diversified instrument type. Drums have one or two flexible heads fastened over a tone-modifying vessel, tube, or frame. Altering the tension of the head by shrinking the membrane with heat, applying tuning paste, or adjusting the fastening mechanism changes the pitch; adding snares and jingles enriches the tone. Methods of sounding—with bare hands and fingers, sticks, or other means—and body shapes are important distinguishing features of drums in many cultures: drums often symbolize the female body, while drumsticks and drumming gestures may have phallic implications. In some cultures drums are sacred: they may be sequestered from view, fetishes might be enclosed within their bodies, and occasionally their heads are ceremonially attached with glue bound with human blood. Elaborate surface decoration reflects the elevated status of many drums. In India, western Asia, and Africa especially, the art of drumming attains a musical complexity and social significance unknown in Europe.



Clockwise:

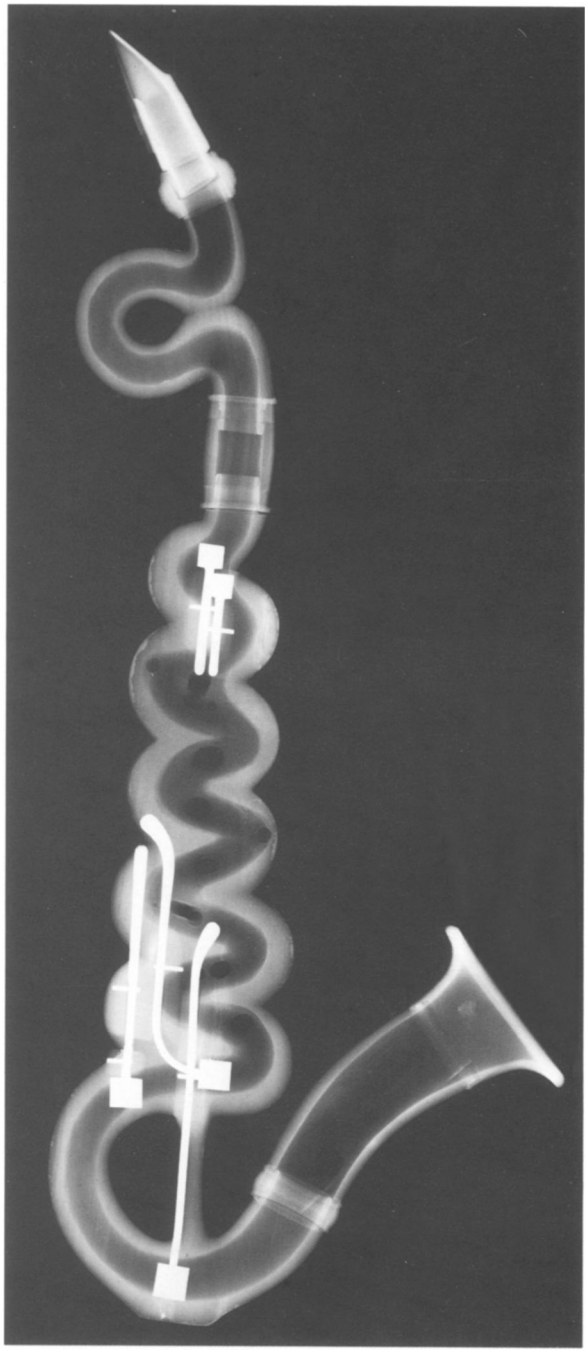
TOMBAK. A single-head drum in goblet form, this one is inlaid with geometric designs in ebony, bone, and mother-of-pearl. The tombak is struck by the fingers and tuned by heating the head. Syria. H. 40.5 cm. 89.4.1247

RNGA-CH'UN. This drum consists of two adolescent boys' crania joined at the domes; the cavities are skin-covered. When it is shaken, the heads are struck by wax pellets tied to the waist. Tibet or India. W. 18.2 cm. 89.4.213

FRAME DRUM. Made of skin tacked over a shallow wood rim, it has a black totemic raven painted inside the head; the outside is stained yellow. Chilkat tribe of Tlingit Indians. Near Nushagak Bay, Alaska. Diam. 29.5 cm. 89.4.595

WINDS

Wind instruments, or aerophones, fall into three main classes distinguished by the ways their air columns are set into vibration. Lip-vibrated types employ a cupped mouthpiece that supports the player's buzzing lips as air is forced between them. In reed instruments the player blows through a thin single or double reed attached over the end of the tube; the reed's elasticity allows it to open and close rapidly, sending wind pulsating into the tube. Flutes are sounded by a wind stream directly from the player's lips or from an intermediate duct impinging on a sharp edge, setting up waves in the air current as it flutters past the edge. An air column's shape affects tonal quality: cylindrical and conical enclosures, for example, have distinctly different acoustical properties. Pitch is controlled by varying the wind pressure or by changing the tube's effective length, in many cases by closing and opening finger holes or valves. European "brasses" are historically associated with ceremonial and signal functions, and in many areas other winds still have a distinctly erotic significance. Such extra-musical associations, often expressed in decoration and choice of materials, tie instruments closely to traditional folklore and religious practices.



Left to right:

BUGLE. "Major Drummond 104th Regt." is engraved on this silver-gilt bugle with a hallmarked tube and mouthpiece. Thomas Key and William Trayls. London, 1811. L. 38.1 cm. Rogers Fund, 1975.270

BASS CLARINET. Of olive and cocus, it is carved in a serpentine shape to bring finger holes within reach. The x-ray reveals a gouged bore and five brass keys. Nicola Papalini. Chiaravalle, Italy, about 1810. L. 68.5 cm. 89.4.2545

FLAGEOLET. Tiny high-pitched flageolets were used to teach tunes to songbirds. This ivory one has four finger holes and two thumbholes. De Haze. Possibly Belgium, late 17th century. L. 11.4 cm. Gift of William Loring Andrews, 06.194

KEYBOARDS

Of all ingenious mechanisms employed to simplify or expand playing technique, none has affected the course of music history so much as the keyboard. Keyboards allow performers to control many notes at once; the playing of full chords or of several simultaneous melodies, difficult or impossible on most other instruments, is easy on a keyboard. It is no coincidence that this mechanism, known in principle since the third century B.C., developed rapidly during the late Middle Ages when chordal and polyphonic composition began to dominate Western art music. Since keyboard instruments are products of urban technology, they are not traditionally employed in rural folk music. Size, complexity, and cost limited their distribution until the advent of industrialism. Keyboards are most commonly applied to strings and winds—pipe organs, for example—but some sets of idiophones are also equipped with keys, such as those that enable one person to ring a carillon's many bells. Since there is a limit to the number of keys with which fingers and feet can cope, keyboards are not so useful in non-Western music, where an octave may be divided into a multitude of pitch intervals smaller than those of the Western scale. Generally larger than unmechanized instruments, those with keyboards offer a generous surface for decoration and may be stunning simply as furniture.

CHAMBER ORGAN. Three ranks of pipes are mounted behind the keyboard. The bellows are concealed by a painted panel of Saint Cecilia signed "Franz Casppar Hofer, 1758." Castle Stein, Taunus, Germany. H. 217 cm. 89.4.3516

Above:

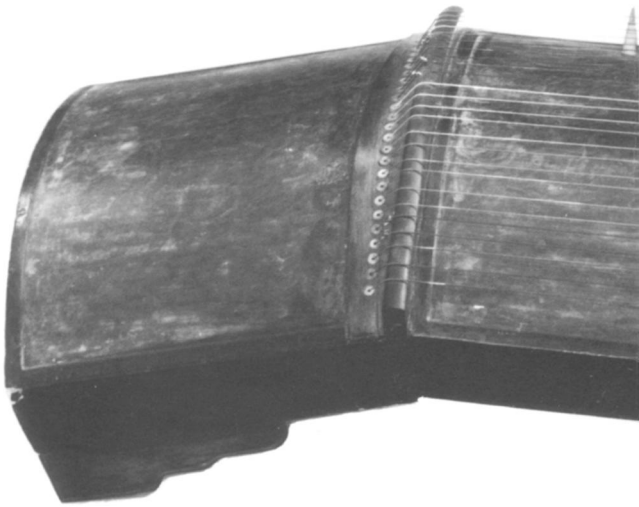
PIANOFORTE. Bartolommeo Cristofori invented the pianoforte around 1700 while employed at the court of Ferdinand de' Medici. This warm-toned instrument is his earliest surviving piano. Modeled after Italian harpsichords of the period, and called by Cristofori "harpsichord with soft and loud," it grows gradually louder or softer in response to the player's touch. The keyboard covers 54 notes, compared with the modern piano's 88. Florence, 1720. L. 228.6 cm. 89.4.1219

Below:

DOUBLE VIRGINAL. This sumptuously painted virginal is the oldest extant work by Hans Ruckers the Elder, head of a renowned family of Flemish harpsichord builders. Brought to Peru, it was discovered around 1915 in a hacienda chapel near Cuzco. Philip II of Spain and his wife Anne appear on gilt medallions over one keyboard. When the high-pitched "child" at the left is placed above its "mother," both can be played by one person. Antwerp, 1581. W. 190 cm. Gift of B.H. Homan, 29.90

HARP. A gaily costumed flautist surmounts this harp. Pitches outside its diatonic scale are obtained by turning metal hooks to shorten the vibrating length of certain strings. Austria, 18th century. H. 160 cm. Rogers Fund, 58.150

SAW SAM SAI. This fiddle has a heart-shaped body, covered with buffalo parchment, and a turned ivory neck and spike. The neck is inlaid with mother-of-pearl. Three silk strings cross the movable bridge. Thailand. L. 107 cm. 89.4.300

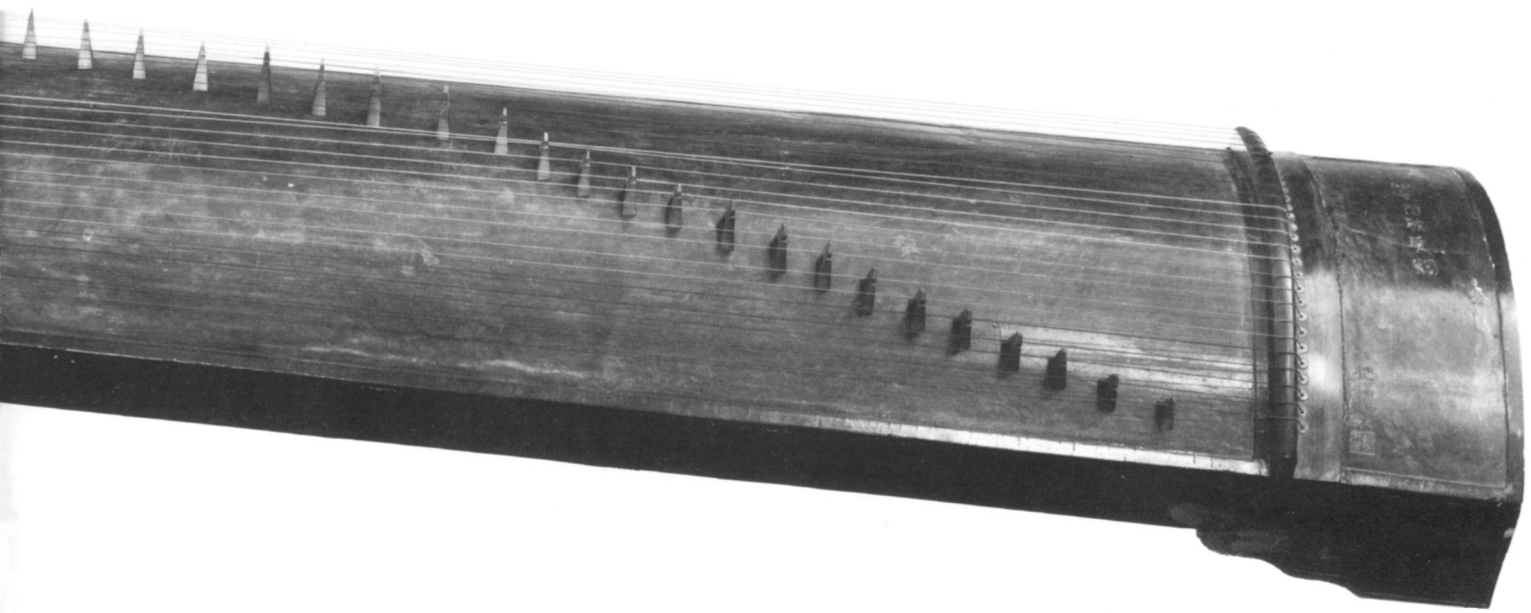


KISSAR. Still played in parts of Africa, the kissar *descends from the ancient Greek lyre. This one has an incised gourd body and antelope horns supporting a wood crossbar with eight gut strings. Possibly Ethiopia. H. 72 cm. 89.4.1361*

STRINGS

Silk, wire, hair, and gut provide strings for chordophones. Those of the zither family have strings lying stretched in a frame, usually over an amplifying or resonating chamber that receives their vibrations indirectly. Strings in harp-type instruments fasten directly to the amplifier at one end and are tuned at the other end, where they attach to an arm above the amplifier. Lutes, a category that includes the violin and guitar, have a narrow neck protruding from the resonating body, with strings coupled by a bridge to the body and running along the neck to tuning pegs. The neck may support a fingerboard against which strings are pressed to shorten their vibrating length; many pitches can be elicited from each string. Lyres have no neck, but rather two arms reaching out from the body and connected by a crossbar to which the strings are fastened for tuning. Strings can be sounded by plucking, striking, bowing, or even by a passing breeze as in the aeolian harp, the inspiration of many poets during the romantic period. "Sympathetic" strings that add soft overtones are not touched by the performer, but sound when activated by vibration transmitted from neighboring plucked or bowed strings. Chordophones are subtle, complicated instruments, which are geographically somewhat limited and probably of more recent origin than drums and idiophones. Western legends attribute them to wise, benevolent personalities; we are reminded of Apollo's lyre and the harps traditionally played by angels and King David. Today an elite status is still accorded the violin (a bowed lute) and piano (a mechanized zither). In many cultures the gentle chordophones connote femininity.

SE. This large, exceptionally rare zither has movable bridges and 25 silk strings plucked by the fingers. The se was played at imperial services and Confucian temples. China, early Ch'ing dynasty (1644-1912). L. 194 cm. 89.4.2163



MATERIALS, ACOUSTICS

Experiments have shown that the material of which a flute is made has practically no effect on timbre (tone quality); rather, internal geometry is all-important. In the violin, however, the choice of woods, even of varnish, is critical for obtaining the best sound. Materials are selected for instruments on the bases of tonal properties, durability, appearance, cost, and other characteristics including supposedly magical ones. Some materials, especially wood and metal, are readily shaped to conform to the maker's requirements; others, like shell and bone, impose their natural forms. Instruments in which refined tone, rather than appearance, is paramount are usually made of substances that can be conveniently shaped; this is true of most Western instruments. Elsewhere, when particular timbres are less crucial, there may be more tolerance for inherent forms, particularly those deriving from animal materials. Western instruments employ few undisguised animal substances except for strings, membranes, and decorations, and nonrepresentational shapes predominate. Certainly, the more music becomes a fine art, confined to conservatories and concert halls, the more "artificial" its instruments become.

Although the science of acoustics matured in the last century, makers still build instruments empirically, judging their success by ear and touch. It is astonishing how esoteric their creations sometimes look, as though computer-designed. In fact, while physics and mathematics can explain the acoustical properties of different shapes and substances, modern science has led to few fundamental improvements in instruments and leaves many mysteries of their operation unresolved. A Stradivari is still as unduplicable and irreplaceable as a Rembrandt. No matter how imperfectly understood, the same basic conditions of sound production, modification, amplification, and transmission govern all instrument makers. Their intriguingly attractive solutions to these universal problems, using whatever materials and technologies may be at hand in different cultures, illuminate not only various aspects of musical aesthetics but also the larger issue of human creativity.

At the right:

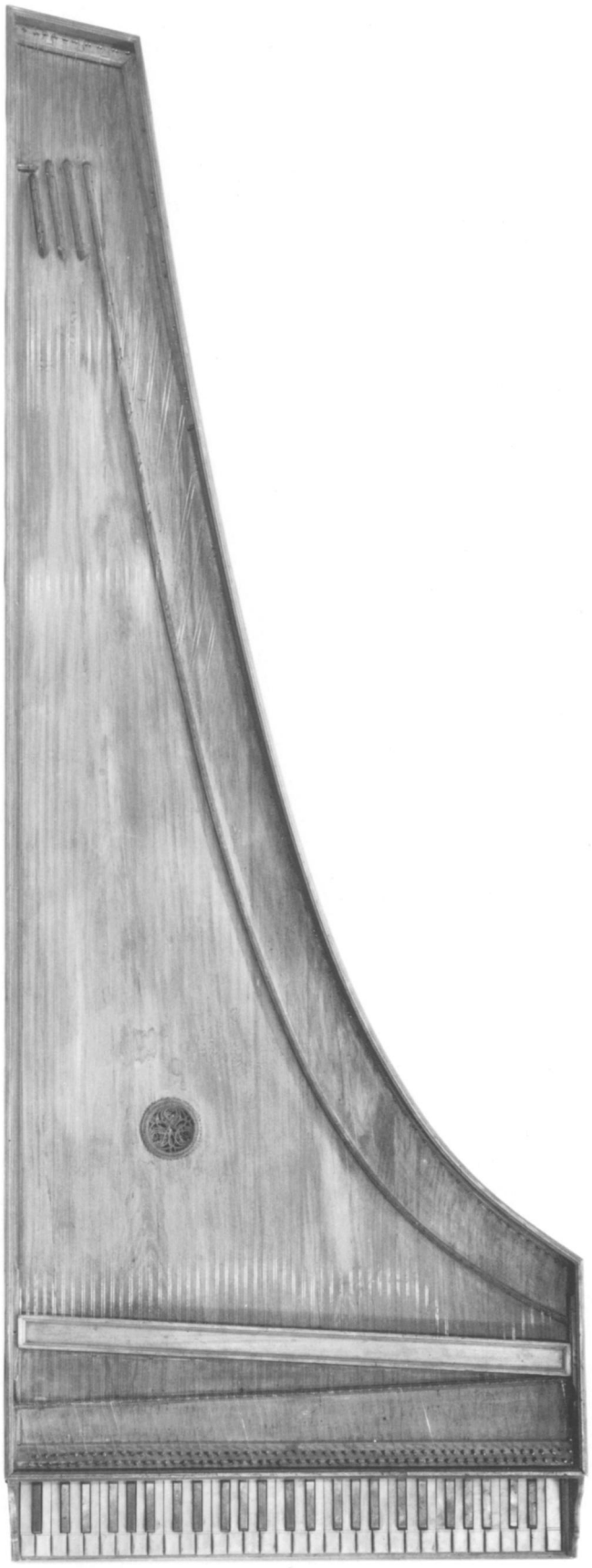
HARPSICHORD. Vibration from plucked strings is transmitted to the amplifying soundboard through a slender curved bridge, shown in this view from above. The wing-like exterior's graceful proportions reflect the graduated lengths of the strings. A Gothic rosette fills the sound hole. Girolamo Zenti. Rome, 1666. L. 236 cm. 89.4.1220

Opposite, above:

SESANDO. This elegant but fragile zither is made of readily available materials. It has a central bamboo tube bearing 20 wire strings, surrounded by a delicate palm-leaf resonator. Island of Timor, Indonesia. H. 60 cm. 89.4.1489

Opposite, below:

SARINDA. Though carefully designed for efficient sound projection and elaborately inlaid, this complex fiddle with many sympathetic strings is a low-caste folk instrument. India. L. 61.5 cm. Gift of Miss Alice Getty, 46.34.42



Photographs by Rudy Muller

GEOMETRY

Instruments often show geometric designs applied to surfaces for decoration or incorporated into the actual tone-producing structure. Designs such as astronomical signs may convey esoteric messages to the instruments' users. Fretwork panels allow sound to pass while maintaining the wood's strength. Whether ornamental or structural, geometric elements reflect the intimate connection between instrument making and mathematics.

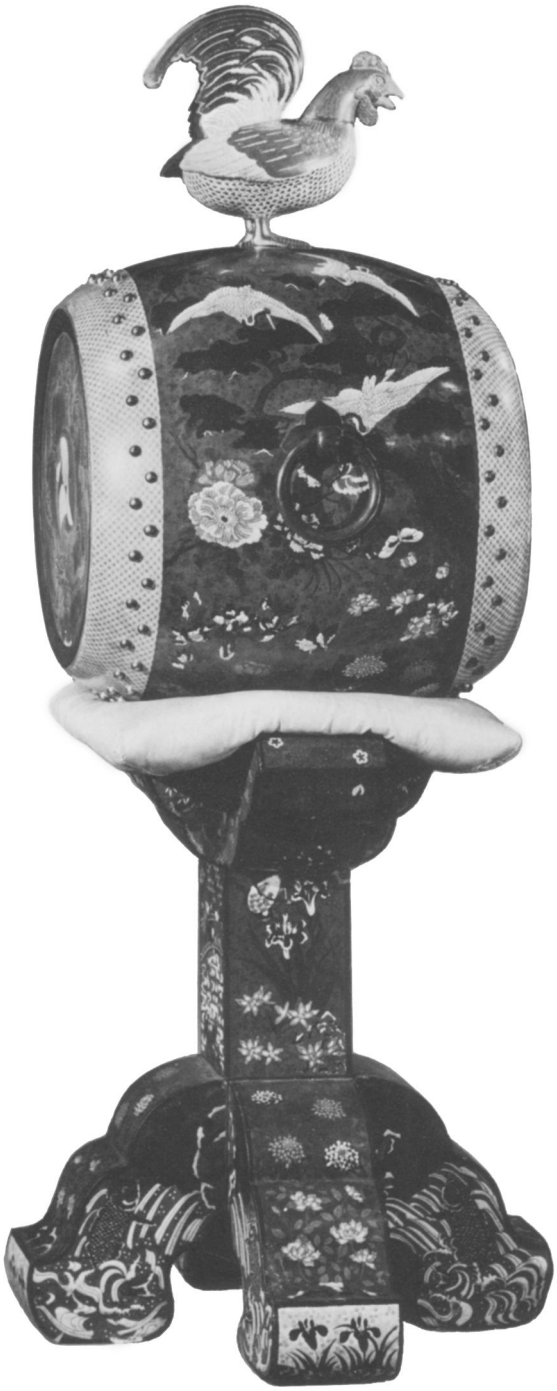
Shown clockwise below are details from four instruments:

The incised stars on the thick wood body of a folk lute, a gunibri, recall ancient Mediterranean sun symbols. Instruments often retain such symbols long after their meaning has faded. North Africa. Radius 2.8 cm. 89.4.419

Bands of zodiacal images surround a central star on a kasi, a cast bronze idiophone. Although its name means "frog drum," it is actually a gong, often associated with death cults and rainmaking. Thailand. Radius 33 cm. 89.4.1234

Derived from Arabic models, the delicate geometry of a fretwork rosette crisscrosses a lute's sound hole, focal point of the spruce soundboard. Augsburg, 1596. Radius 4.9 cm. Gift of Joseph W. Drexel, 89.2.157

Clothed in lacy parchment, a little virginal's sound hole harkens back to the stone traceries of Gothic rose windows. Virginals, a type of harpsichord, were usually depicted being played by young women. Possibly Augsburg, about 1600. Radius 1.6 cm. 89.4.1778



O-DAIKO. In Japanese folklore a fowl perched on a drum symbolizes peace. Japan sent this cloisonné drum to the 1873 Vienna Exposition as a pacific gesture; it was never intended to be played. Japan, 1873. H. 159 cm. 89.4.1236

SYMBOLISM

The significance of instruments lies not only in how they sound but in the meaning of their shapes and decoration. Modern Western ideals of tonal aesthetics are no more universal than Western musical styles, and for some peoples even the concept of beautiful timbre is unfamiliar. In rough instruments made of uncrafted natural materials, such as sea shells, bones, or gourds, precise control of timbre is impossible. Instead of aiming for uniquely pleasing timbres, instrument makers, especially in nonliterate societies, may create sounding, three-dimensional images of revered beings or myths; the tone quality and tuning of these potent objects may be of secondary concern. However, conventions of biomorphic decoration, choice of material, and circumstances of performance are more or less rigidly observed lest the deity represented or invoked by an instrument be offended. Not subject to whims of fashion, such efficacious instruments have kept the same forms for centuries. Even in the literate "high culture" zone across Asia and Europe, certain folk and ceremonial instruments retain vestiges of ancient mythic associations. Their sounds are voices from the past, transmitting unwritten messages about a culture's history.

Western urban civilization is unusual in emphasizing novelty and creative originality. As one result, European popular music, unlike, say, Native American song, undergoes periodic style shifts, its instruments accommodating themselves to these trends. During the Renaissance, Western instruments began to shed their extra-musical associations, inherited from the Greeks, Orientals, and barbarian invaders who provided prototypes for many medieval instruments. In place of these associations came greater attention to intrinsically musical qualities. Encouraged by technological advances and by the liberation of instrumental music—which had been modeled after vocal composition until the baroque era—later professional makers refined instruments in accordance with acoustical laws. Stripped of overt symbolism, Western instruments assumed their elegant modern forms dictated by musical requirements. Decoration became a matter of fashion, free of taboos. Still, the nomenclature of a violin's parts—head, neck, back, belly, ribs, tailpiece, saddle—points directly back to ancient zoomorphic chordophones of central Asian horse cults, whose horsehair-strung fiddles survive today in Bulgaria's equine *gusla*.

GUSLA. Associated with pre-Christian horse cults, this bowed chordophone traditionally bears one horsehair string and a steed atop its neck. It is carved from a maple block. Bulgaria, 19th century. L. 63.7 cm. 89.4.340

Rudy Muller

MOKUGYO. Having no eyelids, the fish symbolizes wakefulness. A sphere in its mouth represents the universe. This hollow wooden idiophone is struck during Buddhist services to attract the deity's attention. It also reminds the pious worshiper to keep his soul alert and, like the fish, his body energetic. Japan. L. 59 cm. 89.4.1711

MAYURI. A type of bowed sitar, the mayuri *is one of many Indian instruments incorporating animal forms. Its Sanskrit name means "peacock." When played, the bird's feet stand on the ground, and the pegbox rests over the player's shoulder. Adjustable frets and wire strings lie along the fingerboard, above a tail of vivid feathers. Other kinds of sitars also employ avian materials, including eggshells, in their construction. India. L. 112 cm. 89.4.163*

GYO. This smiling tiger (gyo), emblem of faith, courage, and strength, purrs when his ridged backbone is scratched with a bamboo switch during Confucian rituals. On his forehead stands the Japanese character for "merry" and "music." The animal crouches on a boxlike amplifier. These scraped instruments originated in China, where the tiger (yü) was king of beasts and personified the wind. Zoomorphic instruments often express the real or imagined strengths of animals while mimicking their sounds. Japan. L. 87 cm. 89.4.2272

IVORY INSTRUMENTS

Counterclockwise:

HORN. Simple horns, conical by definition, can be conveniently made from hollow, tapering elephant tusks. Ivory readily lends itself to deep, rich carving, exemplified by the spirited people, vigorous animals, and twining foliage that embellish this horn. Burma. L. 43 cm. 89.4.1752

OLIPHANT. Numerous elephant-ivory horns, called "oliphants," were produced by Islamic craftsmen in Italy for medieval noblemen and churches. Seldom played, they were often reliquaries or symbols of land tenure. Southern Italy, about 1050-1100. L. 56 cm. Rogers Fund, 04.3.177

HORN. Portuguese colonists probably supplied models for the baroque carving on this tusk. Its decoration includes coats of arms and a Latin inscription as well as a fawn. The horn is blown through an opening in its side. Africa, possibly 17th century. L. 76.5 cm. 89.4.1257

CORNETTO. Combining a woodwind's finger holes with a brass instrument's mouthpiece, this ivory cornetto is a hybrid. Its clear, gentle tone was favored for virtuoso solos and for accompanying voices. Germany, 17th century. L. 58 cm. Funds from Various Donors, 52.96.1

HUNTING HORN. Blown to signal hunters in the field, this short horn was slung from a cord when not played. A grotesque animal holds the large mouthpiece between its teeth. Like other ivory horns, this one was an instrument of elite society. France, about 1700. L. 35 cm. 89.4.1485

NATIVE AMERICA

Chordophones, or stringed instruments, were unknown in the Western hemisphere before its conquest by Europeans. Instead, over tens of thousands of years Native Americans developed an astonishing variety of idiophones, drums, and winds. Crisp-sounding rattles of imaginative shape and non-pitched single-head drums beaten with sticks accompanied dance, song, and ritual on both continents. Among the rich, literate civilizations of South and Central America ceramic trumpets and figural flutes and whistles had an important ceremonial role, but little is known of their music. In North America flutes followed no fixed tuning standard; they were made only by men who played love songs on them while courting. Winds were also sounded as animal decoys. Particularly along the Northwest Coast, instruments bore dynamic, colorful designs full of symbolic meanings now in part forgotten. Each instrument's decoration, shape, and materials paid homage to the spirit world. Performance skills and instrument lore have been transmitted through oral tradition to the present day.

Counterclockwise:

SHAMAN RATTLES. Characteristic of Northwest Coast carvings, these vivid bird-form rattles embody totemic emblems and depict animals conveying magical power to the shaman through their tongues. Particular colors from natural pigments are essential to the rattles' efficacy. The hollowed cedar bodies contain pebbles or other small objects. Tsimshian Indians. Around Queen Charlotte Islands, British Columbia. L. 30.5 cm., 35.5 cm. 89.4. 611,615

TZIT-IDOATL. Foreign models apparently inspired the so-called "Apache fiddle," a single-string bowed zither. Native and white man's designs decorate this one's agave-stalk body, most likely made at a reservation school in the late 19th century. Apache Indians. Probably New Mexico. L. 39 cm. 89.4.600

WHISTLING JAR. A shrill whistle sounds inside this bird-shaped vessel's head when air is blown through the body. The function of such zoomorphic clay jars is unknown, but recent research indicates that the whistles were actually tuned. Moche style. Peru, 200 B.C.-A.D. 600. L. 17.6 cm. 89.4.1718

Rudy Muller

OCEANIA

Among the culturally diverse islands of the south central Pacific, music is perhaps the most ubiquitous social activity. Where materials are scarce, as in Australia's deserts and Micronesia, simple noisemakers predominate. New Guinea and Polynesia, having a greater variety of natural resources, enjoy more advanced instruments often made by honored artisans. Since they incorporate organic substances prone to decay, most Oceanic instruments do not last long. Nevertheless, great attention is lavished on the construction and incised decoration of instruments considered sacred to cult spirits. New Guinean ancestral flutes and cult drums are hidden from the uninitiated, and solemn rituals surround their care and use. Long hourglass-shaped drums, often carved to represent crocodiles, express the strength of the male dancers who beat them. Quiet bamboo jew's-harps and flutes blown through the nostril are played for personal amusement throughout the islands.

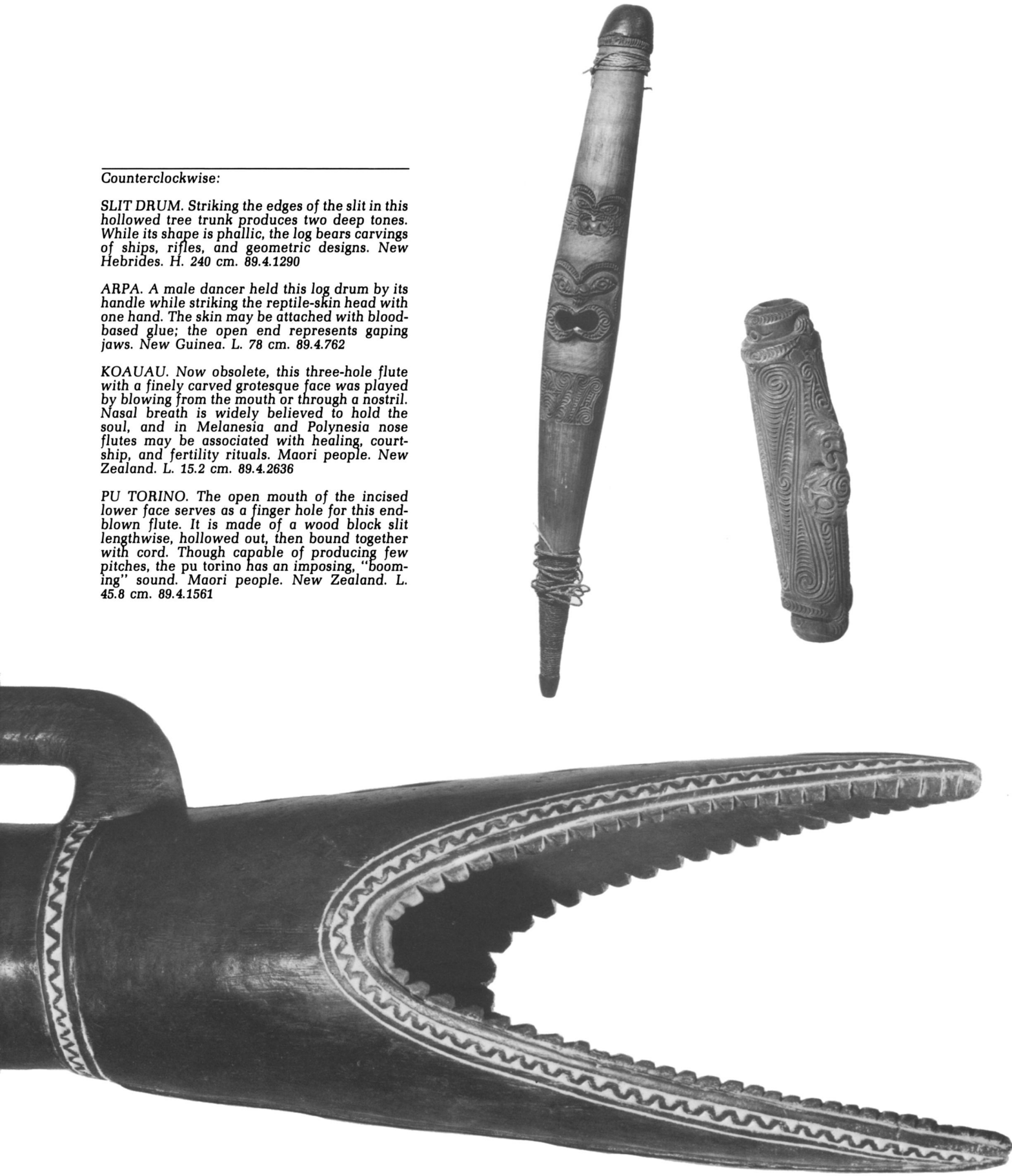
Counterclockwise:

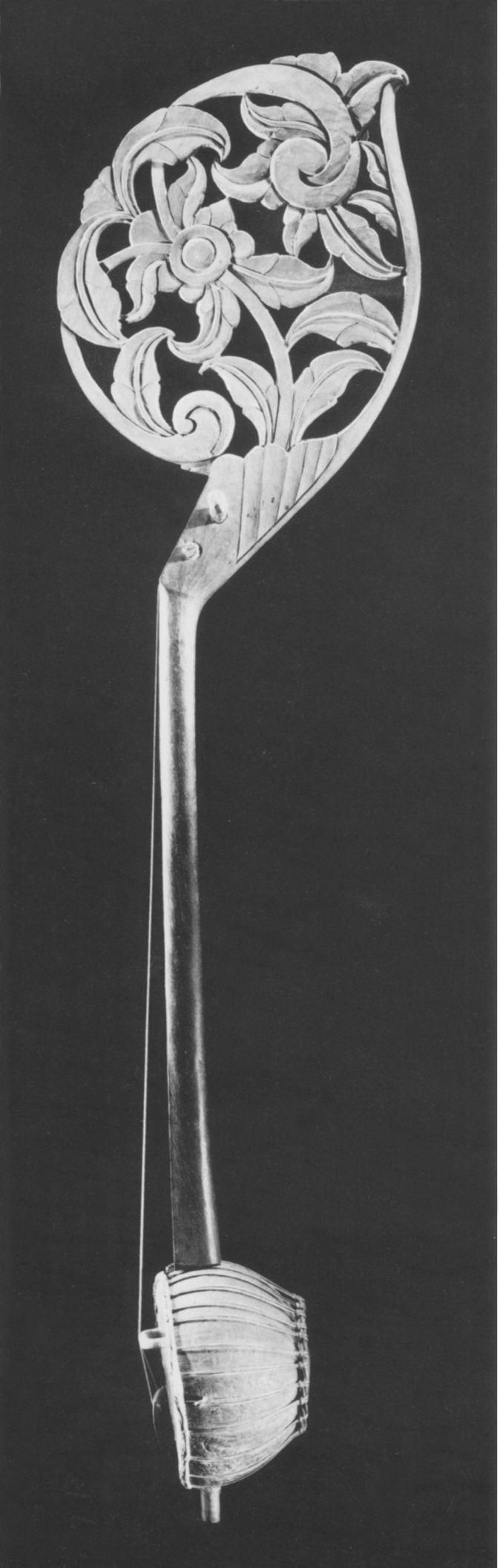
SLIT DRUM. Striking the edges of the slit in this hollowed tree trunk produces two deep tones. While its shape is phallic, the log bears carvings of ships, rifles, and geometric designs. New Hebrides. H. 240 cm. 89.4.1290

ARPA. A male dancer held this log drum by its handle while striking the reptile-skin head with one hand. The skin may be attached with blood-based glue; the open end represents gaping jaws. New Guinea. L. 78 cm. 89.4.762

KOAUAU. Now obsolete, this three-hole flute with a finely carved grotesque face was played by blowing from the mouth or through a nostril. Nasal breath is widely believed to hold the soul, and in Melanesia and Polynesia nose flutes may be associated with healing, courtship, and fertility rituals. Maori people. New Zealand. L. 15.2 cm. 89.4.2636

PU TORINO. The open mouth of the incised lower face serves as a finger hole for this end-blown flute. It is made of a wood block slit lengthwise, hollowed out, then bound together with cord. Though capable of producing few pitches, the pu torino *has an imposing, "booming" sound. Maori people. New Zealand. L. 45.8 cm. 89.4.1561*





KASAPI. The body of this long-necked fiddle is half a coconut covered with reptile skin. Atop the slender neck, above two tuning pegs, the floral-patterned disk serves as a counterpoise. The name kasapi *or* kachapi *is applied to several different chordophones found from India to Java. It seems to derive from the Sanskrit name of a certain tree,* kachapa cedrela. *Sarawak, Borneo. L. 104 cm. 89.4.2365*

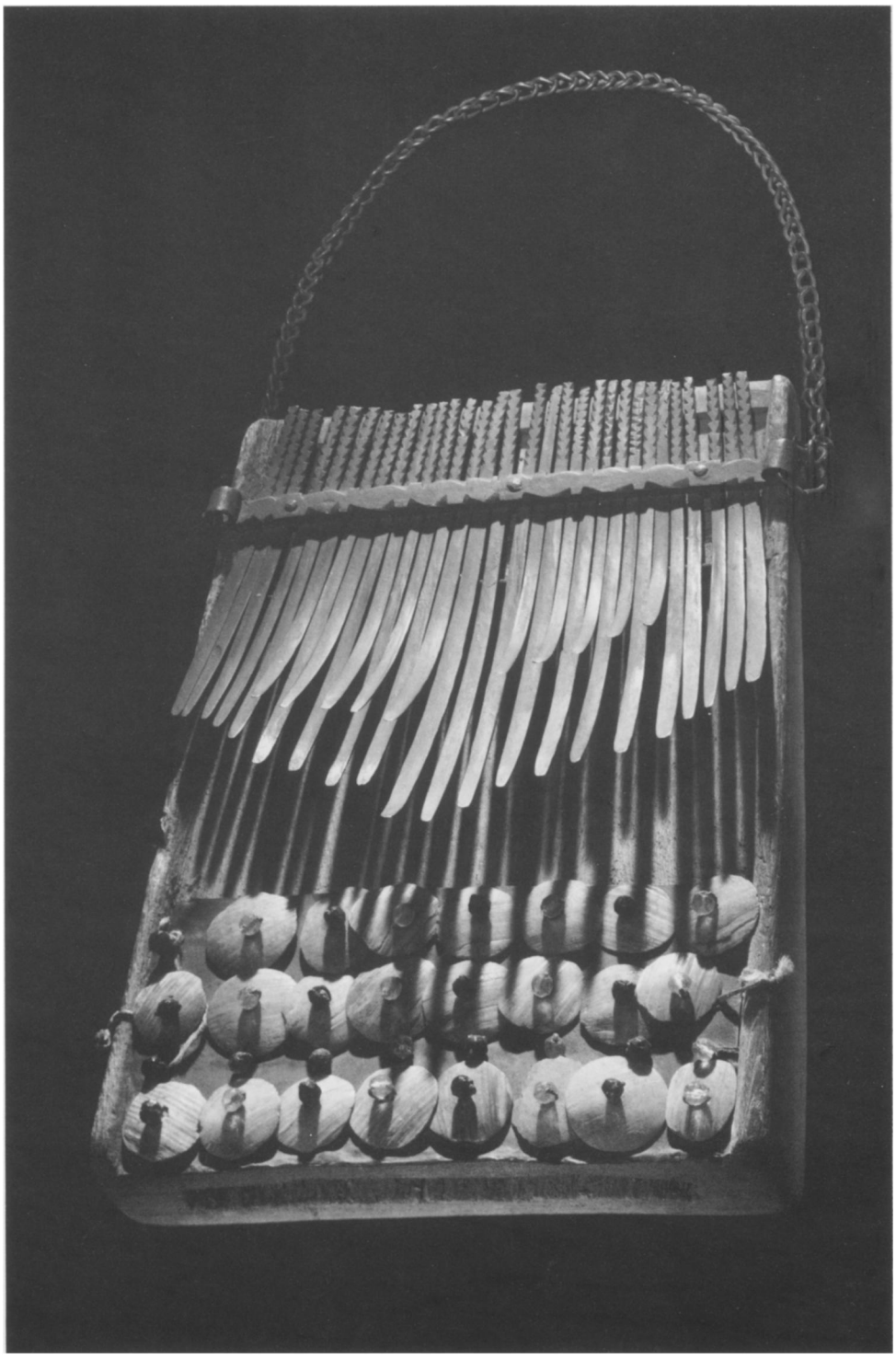
BULL-ROARER. Weird faces, highlighted with lime, peer from an incised wood blade. When whirled from a cord, the spinning blade emits a powerful rumble—the uncanny voice of a spirit. Bull-roarers are of prehistoric origin, and frequently have a place in fertility or initiation rites. In some areas women are forbidden to see these instruments. New Guinea. L. 63.5 cm. 09.163.3

AFRICA

In most of Africa south of the Sahara indigenous instruments are abundant. Since Black African music is intimately connected with dance, rhythmic percussion instruments predominate, and music's overall phrasing is vigorous and detached. Africa's drums, played like many other instruments in groups of two to twenty, are among the world's most varied in form. Besides accompanying other performers they convey messages in "tone language," represent deities, and express the majesty of kings. While xylophone orchestras reflect an early Indonesian influence, the thumb-plucked *mbira* (illustrated on following page), an idiophone set played by one person, is uniquely African. Now commercially mass-produced, it gave rise to Europe's metal-toothed music box in the eighteenth century. At the same time the popular banjo began to evolve from Africa's skin-covered lutes. Side-blown ivory horns typify those winds that produce only a few notes, useful for signaling and ceremonies. One-note horns and whistles are common in ensembles, but reed instruments, curiously, seldom appear.

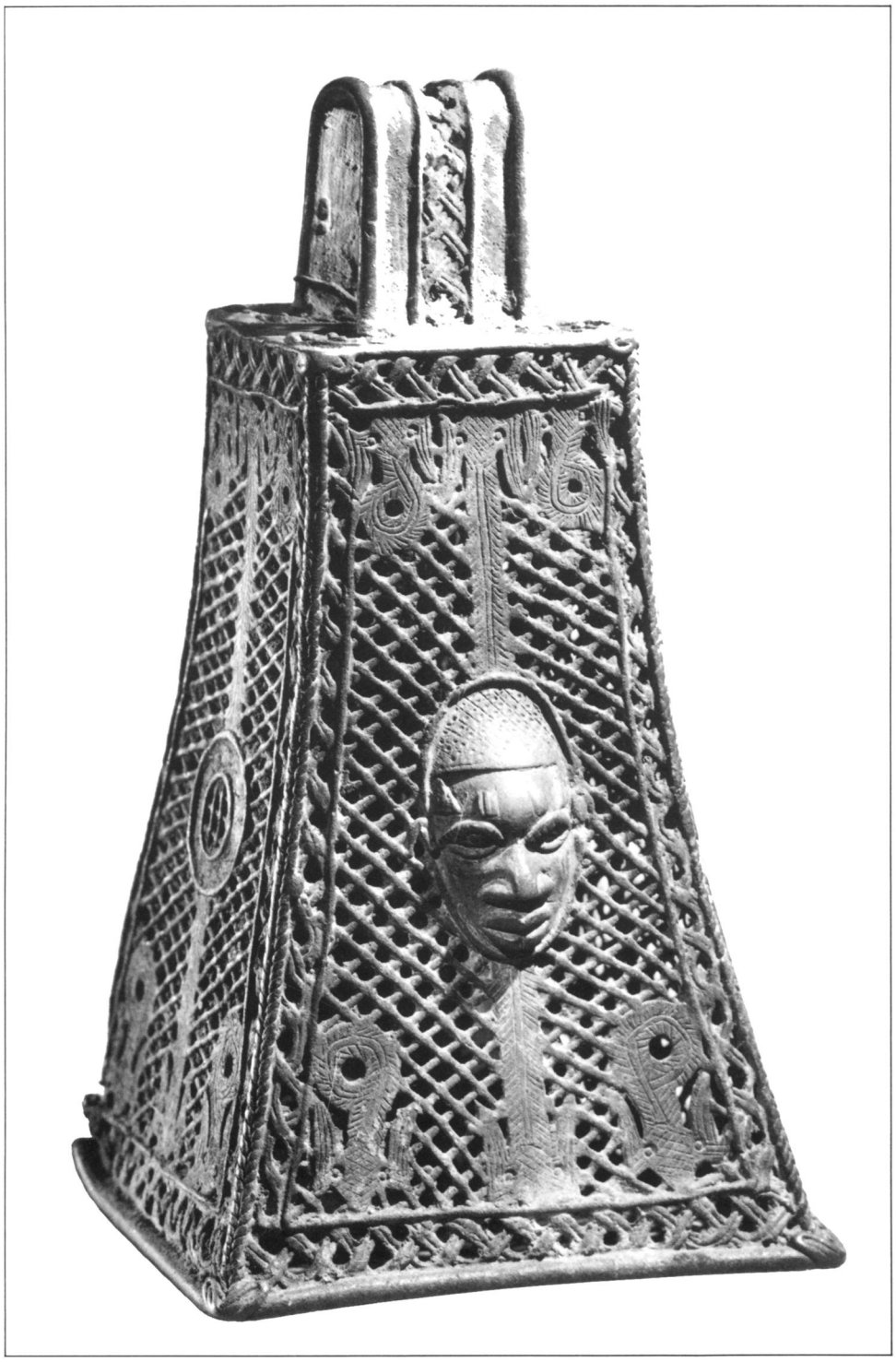
DRUM. Soberly seated on a leopard, the man with a child on his lap bears the potlike drum on his head. Product of a complex culture, the carving's full meaning is unknown. Vili people. Loandjili, People's Republic of Congo. H. 80 cm. 89.4.1743

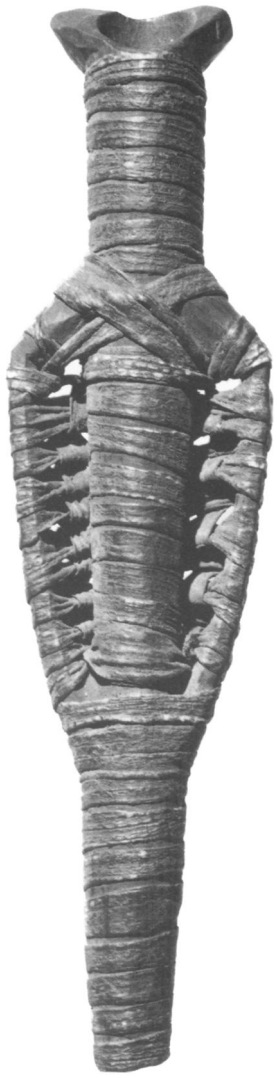
MBIRA. Elaborate melodies are produced when the 31 tunable metal tongues are plucked. Jingling shell disks mounted on the resonator enrich the tone. Although mbira *is a Bantu word, these idiophones have many other names throughout Africa. The ingenious instrument was mentioned in Europe as early as 1586, but only recently has it gained much popularity outside its native areas. Easy to make and play, this "thumb piano" is now used in elementary music education. Probably Mozambique. L. 24 cm. 09.163.6*



BELL. Reflecting sophisticated technology, this bronze bell was worn from the neck as a badge of high rank and rung to communicate with ancestors. A clapper hangs in its pierced body. Court of Benin. Nigeria. H. 18 cm. 89.4.2604

WHISTLE. End-blown whistles, often played in groups, have important musical and ritual roles. This abstract figural body is wrapped in reptile skin. Bobo Fing or Samo people. Upper Volta. L. 28 cm. Funds from Various Donors, 1976.10.6





Rudy Muller

ISLAM

Muslim cultures of western Asia and North Africa preserve instruments that were known in ancient Mesopotamia and Egypt. Islamic music reached a high point of sophistication in the ninth and tenth centuries A.D.; soon thereafter its theoretical concepts and instruments spread to Europe, introducing medieval musicians to the lute (Arabic, *al-'ūd*), rebec (*rabāb*), shawm, and other basic types. Today Persian, Arabic, and Turkish styles exemplify Islam's far-flung music. Bowed and plucked lutes, end-blown flutes, and shrill reeds join in small ensembles to improvise florid melodies over the supple rhythm of small single-head drums. As in most Asian music, harmony is ignored as a structural element. The resulting lacy texture of Islamic music recalls Near Eastern architectural ornament and calligraphy; its instruments, too, display intricate geometric decoration, and they sound bright rather than deeply resonant: the tambourines, goblet drums, and miniature kettledrums, for example, go "tap" rather than "boom." Such clear, somewhat nasal timbres perfectly convey the fast, profusely embellished outspinning of melody.

Left to right:

KAMANJA. The fiddle's domed body is spitted by a thin neck and iron spike. This spike supports the kamanja *while its player sits on the ground. The movable bridge's placement produces the best tone. Iran or Caucasus. L. 93.5 cm. 89.4.325*

DIVAN SAZ. Six pairs of plucked wire strings run along the fretted neck of this richly inlaid saz. Its graceful body is composed of separate ribs like a mandolin's. Turkey or Azerbaijan. L. 116 cm. Gift of Miss Alice Getty, 46.34.69

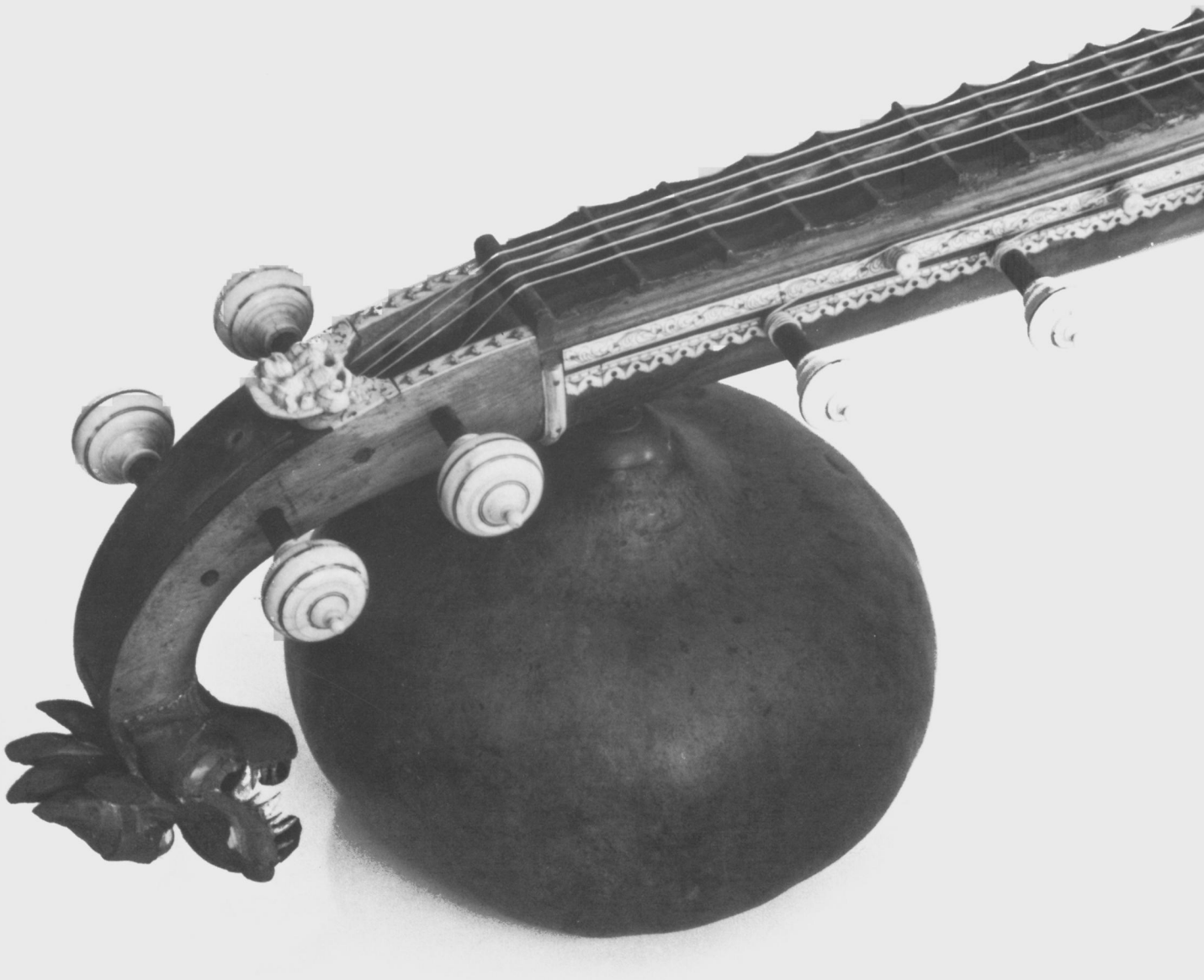
RABAB. Akin to the rebec, medieval ancestor of the violin, the rabāb *is played in classical-music ensembles. When seen from the back, its rounded body, wide neck, and raised pegbox suggest a dolphin's form. Algeria. L. 59.5 cm. Gift of Joseph W. Drexel, 89.2.186*

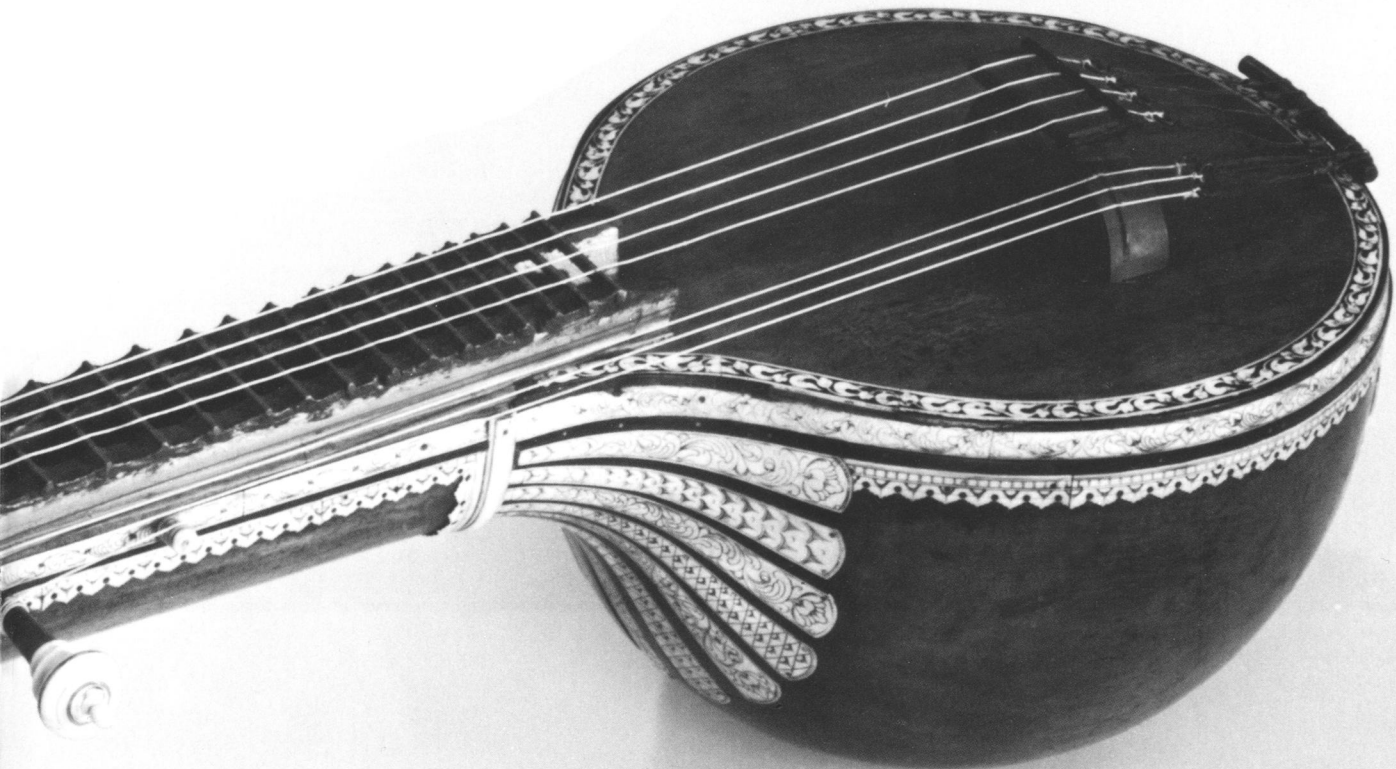
TOMBAK. A Persian poetic inscription forms part of the inlaid ornamentation of this goblet-shaped drum. The drum's elaborate rhythms are as intricately varied as its decoration. Iran. H. 45 cm. 89.4.1310

Photographed in the Museum's Nur ad-Din room. Damascus, dated 1707. Gift of The Hagop Kevorkian Fund, 1970.170. Ushak carpet: Turkey, 1600. Gift of Joseph V. McMullan, 1972.80.10

CENTRAL ASIA

India's most sophisticated instruments are lutes and zithers, capable of producing all shades of pitch as well as constant drones. Bridges that make the wire strings buzz and other untouched strings that vibrate sympathetically color the basic timbres, while gourds and membrane-covered wood resonators amplify the tone. Movable frets make it possible to play the variable pitch intervals of numerous *rāgs* (modes). Indian drums are sensitively tuned, with virtuoso control of fingers and palms giving an almost melodic life to their ornate rhythmic patterns. The Hindu god Krishna's simple side-blown flute is only one example of many Hindustani and Carnatic (from southern India) instruments that are attributes of deities; instrument shapes and decoration vividly express these sacred connections. Isolated peoples of central Asia preserve less elaborate types of instruments. Tibetan shamans play eerie trumpets and drums made of human bone. Buddhist monasteries in central Asian mountains resound with low-pitched chanting accompanied by long, telescoping copper horns, handbells, and cymbals.





VINA. Four plucked melody strings and three drones are amplified by the mahogany body and calabash resonator. An unusual flat ivory bridge causes the strings to buzz, creating a characteristic nasal tone. Vinas *are attributes of Sarasvati, Hindu goddess of wisdom. Southern India. L. 105 cm. Gift of Miss Alice Getty, 46.34.44*

RKAN-DUNG. A hollow section of femur, ending in a fierce animal's head, provides this trumpet's tube. Made from thigh bones of priests and executed criminals, these instruments call forth awesome magical powers when played during incantations. Tibet. L. 31.2 cm. 89.4.1695

Rudy Muller

EASTERN ASIA

Eastern Asia's venerable history of court and theatrical music spans thousands of years. Legend places the origins of Chinese classical music in the third millennium B.C., and literary and archaeological evidence suggests that many Chinese instruments have changed little since ancient times, despite strong foreign influences. Traditionally Chinese instruments are classified according to their chief materials: earth (clay), bamboo, and gourd for winds; stone, metal, and wood for idiophones; skin for drums; silk for strings. These materials and the instruments associated with them correspond to the seasons, points of the compass, certain natural phenomena, and other manifestations of a complex yet unified cosmos. Imperial pitch standards, coordinated with colors and tastes as well as weights and measures, were calculated to put each emperor's reign "in tune" with all nature. Thus Chinese music expressed universal harmony, a concept familiar also to the Greeks. Japan and Korea inherited aspects of this musical cosmology along with many Chinese instruments.

Left to right:

DEN SHO. Cast with utmost delicacy, the bronze temple bell embodies mystical female characteristics in its material, tone, and womb-like shape. The fierce, wise dragon and majestic phoenix are powerful symbols. Japan. H. 62 cm. 89.4.1803

SHO. A row of bamboo pipes enclosing metal reeds recalls the legendary phoenix who flew from heaven to hear the sho's soft chords. Insects, a frog, and a snail decorate the lacquered wind chamber. Japan. H. 49 cm. 89.4.2957

TI TSE. Masterfully crafted in costly jade, this side-blown flute is visually and aurally perfect. No doubt it was played by a musician of exalted rank. China or Korea, probably 18th century. L. 54.5 cm. Gift of Rolf Jacoby, 65.149

P'I P'A. This four-string lute once accompanied ballad singers. Its back of 120 ivory plaques is a montage of people, animals, insects, fruit, and flowers. China, 17th century. H. 94 cm. Bequest of Mary Stillman Harkness, 50.145.74

Photographed in the Oriental Stroll Garden of the Hammond Museum, North Salem, New York

SOUTHEAST ASIA

Reverberant bronze idiophones have been among the most highly sophisticated objects made in Southeast Asia since metallurgy developed there around 3000 B.C. Significantly, the word "gong" is of Malay or Javanese origin. The classic Javanese court *gamelan*, a vibrant percussion orchestra heard at many communal events, includes dozens of bronze instruments, each having a specific melodic or rhythmic role—higher-pitched instruments embellishing an underlying, slower-moving melodic framework punctuated by deep gong strokes. In villages smaller ensembles accompany every social activity. Some Southeast Asian instruments, like the quadruple-reed Thai oboe, are unique and of unknown origin, but Burma's lovely arched harp closely resembles ancient Babylonian and Egyptian harps. Certain newer stringed and wind instruments were imported from China and India along with religious and theatrical traditions that generally involve musical performance. Centuries ago the practice of making sets of fixed-pitch idiophones traveled from Indonesia to Africa and then across the Atlantic to the Caribbean, where related "steel-drum" bands evolved in the mid-twentieth century.

SARON. Like a xylophone but having bronze bars, the saron is a basic instrument of Javanese and Balinese orchestras. Resonating chambers are chiseled into the wood trough below the bars. Probably Java. W. 67.3 cm. 89.4.759

SAUNG GAUK. Burma's ancient arched harp is believed sacred. Spirits inhabit its gold-leafed body, called the "bowl" or "house." Doeskin forms its soundboard, and the neck is a naturally curved hardwood root. Musicians study for eight years to master this harp, most revered of Burmese instruments. H. 89.5 cm. 89.4.1465

MIDDLE AGES AND RENAISSANCE

During Europe's turbulent Middle Ages professional instrument makers were rare; only bell founders and organ builders obtained much institutional support, primarily from the church. Among the church-educated elite, instrumental music was held inferior to singing: winds traditionally had pagan associations, and drums and idiophones were considered only noisemakers. Vagabond entertainers carved their own simple flutes and fiddles. Occasionally, however, an elaborately decorated instrument, perhaps an expensive ivory horn, would be commissioned as a noble gift or commemorative. A very few of these, preserved for the sake of their beauty, avoided destruction often caused by neglect or constant use. In the Renaissance, which dawned for music around 1450, advancement of the makers' crafts paralleled the rising status of instrumental music. Beginning in Italy, humanistic music centers supported the manufacture of instruments designed to please the eye and delight the ear. Performers and collectors flourished, with music-loving noble families encouraging makers to vie for splendor of tone and appearance. No less a genius than Leonardo turned his attention to instrument design.

Left to right:

CRECELLE. This ratchet sounded in church during Holy Week when bells fell silent. Enclosed by an architectural cage, its tongue rasps against a cog. France, 15th or 16th century. H. 23.5 cm. Gift of Blumka Gallery, 54.160

MANDORA. Emblems of loyalty and love, delightfully carved on this mandora's back, suggest that the plucked instrument was a girl's betrothal gift. Northern Italy, about 1420. L. 36 cm. Gift of Irwin Untermyer, 64.101.1409

VIRGINAL. Decorated with imagination and sensitivity, this wonderfully preserved virginal made for the Duchess of Urbino sounds as fresh today as when it was new. Venice, 1540. W. 138 cm. Purchase, Joseph Pulitzer Bequest, 53.6

BAROQUE ERA

Between the birth of opera and the death of Bach, during the baroque era (roughly 1600-1750), instrumental music pulled free of vocal models. The choice of orchestration, previously left to performers, was taken over by composers who reveled in the wealth of their new tonal palette. Instruments with an assertive tone quality emphasized music's chordal organization, which in this period was governed by goal-directed harmonies and strong soprano and bass lines. The violin family, rustic stepchildren of the Renaissance, superseded the sedate viols; large harpsichords eclipsed the gentle lute; brilliant organs outshone their modest ancestors; woodwinds gained subtleties of expression; while horns and trumpets came indoors to join the ensemble from which the modern orchestra evolved. To convey the intricacies of counterpoint, instrumentalists strove for clarity rather than for dynamic nuance. The supreme Italian luthiers valued warmth of tone above all, and their durable masterworks retain this quality after three centuries or more of constant use.

VIOLIN. Finest of all baroque violins, this unique Stradivari was recently restored to its original appearance and tone. All other violins by this great master show later modifications aimed at exaggerating their loudness and brilliance, qualities remote from the maker's intent. This violin is robust but not shrill, its gut strings producing a sound ideal for chamber music. Antonio Stradivari. Cremona, 1691. L. 60.1 cm. Gift of George Gould, 55.86

HARPSICHORD. A second keyboard was added when this harpsichord was enlarged in the 18th century. Four rows of jacks pluck three sets of strings, offering tonal flexibility. Jan Couchet. Antwerp, about 1650. L. 229 cm. 89.4.2363

CLASSICAL PERIOD

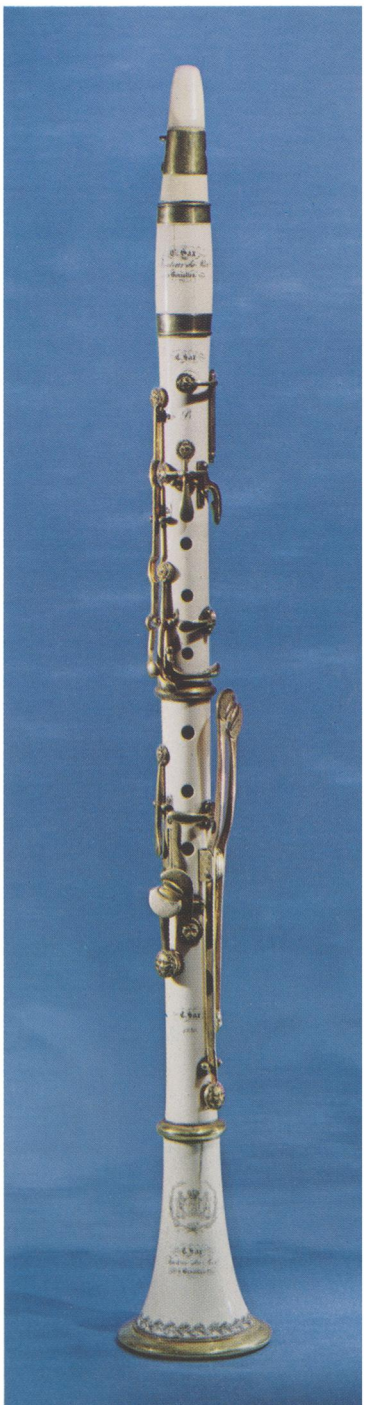
While rejecting excessive baroque counterpoint and chromatic harmony, symphonic composers of the classical period (mid-eighteenth through early nineteenth century) compensated for the thinning of music's texture by calling for an expanded range of instrumental timbres and dynamics. Championed by Mozart, the pianoforte (literally "soft-loud"), invented but ignored in the baroque era, soon overtook the harpsichord in popularity. Unlike the harpsichord's plucked strings, the piano's hammered strings offered infinitely graduated control over volume. Expressive clarinets joined the orchestra's woodwinds; all of which gained additional keys to simplify fingering and improve intonation. Since no single pitch level was accepted everywhere as standard, many woodwinds came with interchangeable sections of slightly different length, giving combinations to suit higher or lower pitch. Trumpets and horns were still "natural"—unvalved—and therefore were restricted to notes of one scale; to allow for modulation (changing of key), "crooks," or short bent pipes, had to be inserted along their tubes during brief pauses in the music.

FLUTE. Astonishing craftsmanship gives this porcelain flute a haunting tone. Interchangeable sections alter the pitch. Germany, late 18th century. L. 62.6 cm. Gift of R. Thornton Wilson in memory of Florence E. Wilson, 43.34

GRAND PIANO. Equipped with a pedalboard for the convenience of practicing organists, this piano was built by a friend of Leopold Mozart. Its gentle sound is crystal clear. Johann Schmidt. Salzburg, about 1790. L. 212 cm. 89.4.3182

ROMANTIC PERIOD

During Beethoven's lifetime (1770-1827) music took a romantic turn characterized by extremes of emotional expression. Beethoven himself was notoriously demanding, pushing instruments to the limits of their capability. Berlioz, Wagner, and Liszt made even greater demands, and instruments sprouted keys and valves in profusion as performers and makers struggled with extraordinary technical problems. The romantic era extended to the twentieth century, by which time the popular cult of the virtuoso had been firmly established. Orchestras grew in size, and instruments grew in power and complexity in order to fill new large auditoriums with overwhelming sound. Violins lost their gut strings in favor of metal ones whose greater tension gave brilliance at the expense of intimate sweetness. Valves for brasses facilitated modulation from one key to another, but the additional weight had a deadening effect on timbre. Pianos with heavy iron interior frames were mass-produced in models fitting every decor and budget; signs of affluence achieved, pianos assumed the function of "miniature orchestras" in the parlor.



GRAND PIANO. George Henry Blake's extraordinary marquetry bears the arms of Thomas, third baron Foley, and his ancestors. Scarcely played, this piano stood for aristocratic wealth and taste. Erard & Co. London, about 1840. L. 247 cm. Gift of Mrs. Henry McSweeney, 59.76

CLARINET. Belgium's court instrument maker engraved his ivory clarinet with royal arms. The 13 lion's-head keys facilitate playing of intricate passages. Charles Joseph Sax. Brussels, 1830. L. 68 cm. Funds from Various Donors, 53.223

COR OMNITONIQUE. An imaginative solution to the problem of shifting key, a series of sliding tubes allows quick change of this experimental orchestral horn's length and pitch. Charles Joseph Sax. Brussels, 1833. L. 42.3 cm. 89.4.2418

NUREMBERG

Opposite page, left to right:

ALTO RECORDER. In the Renaissance and baroque eras Nuremberg manufactured most of Europe's wind instruments. This boxwood recorder typifies a professional performer's unpretentious woodwind. J.W. Oberlender. Nuremberg, mid-18th century. L. 44.1 cm. 89.4.2208

OBOE. Pastoral in tone, the plainly made baroque oboes equal their modern descendants in refinement. Duplicate lower keys serve right- or left-handed players. Jacob Denner. Nuremberg, before 1735. L. 57.4 cm. 89.4.893

ALTO RECORDER. Few professionals could have afforded an ivory recorder so fancifully carved. This one was perhaps played by a wealthy amateur or at court. Johann Benedikt Gahn. Nuremberg, about 1700. L. 48.6 cm. 89.4.909

OBOE. More elegant and possibly later than its companion by the same eminent maker, this boxwood and ivory oboe, though warped, retains its characteristic timbre. Jacob Denner. Nuremberg, before 1735. L. 57 cm. 89.4.1566

This page, top to bottom:

TRUMPET. Attribute of nobility, this silver trumpet enjoyed an elite status among winds. It bears the arms of the king of Saxony. Johann Wilhelm Haas. Nuremberg, before 1723. L. 71.1 cm. Funds from Various Donors, 54.32.1

REGAL. One person pumps both bellows while another operates the keyboard of this portable reed organ. Its nasal snarl, though hard to keep in tune, rejoiced Renaissance ears. Georg Vell. Nuremberg, 1575. L. 70.5 cm. 89.4.2883

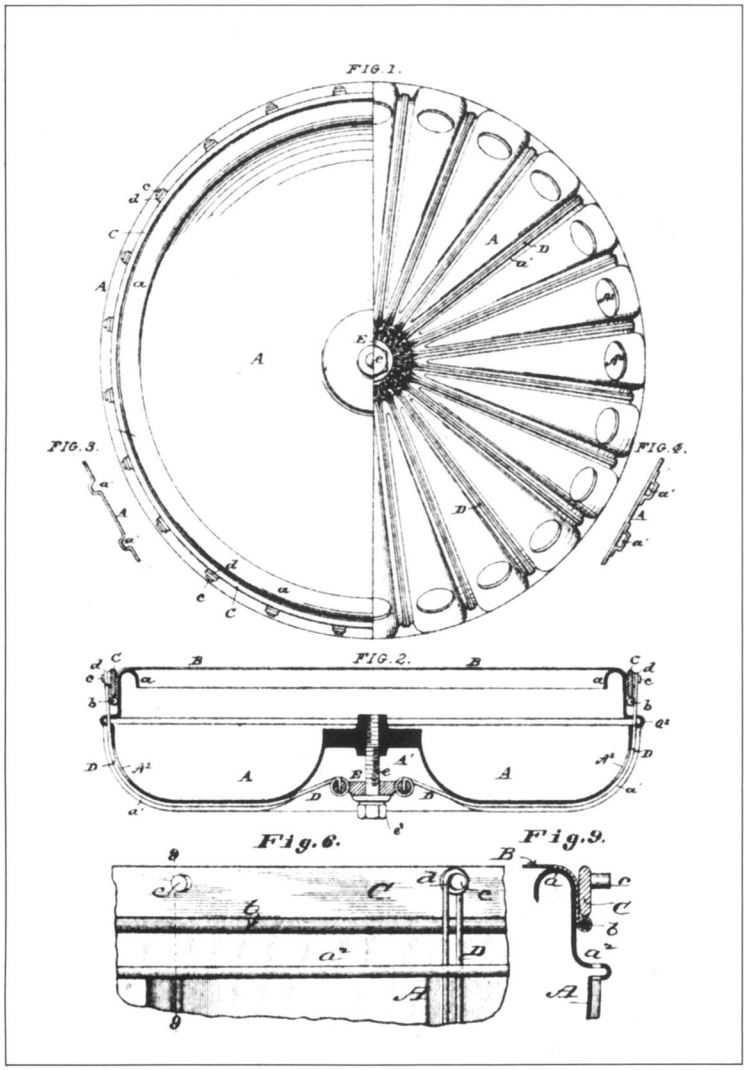
CLAVIORGANUM. A removable, high-pitched virginal fits above the small organ's keyboard. Organ bellows lie across the top of the chest. Laurentius Hauslaib. Nuremberg, 1598. H. 61 cm. 89.4.1191

THE UNITED STATES

"SQUARE" PIANO. Intended mainly for home entertainment, American "squares" enjoyed long popularity and grew to mammoth proportions. This opulent piano of rosewood, sporting mother-of-pearl and tortoiseshell keys, borders on ostentation. Renaissance and baroque motifs, freely intermixed, are carved in high relief. The legs, pedal support, and strapwork music rack are especially vigorous. Inside, the massive iron frame is delicately painted with birds, insects, and floral designs, thus reviving the spirit of Renaissance harpsichord decoration. Robert Nunns & John Clark. New York, 1853. W. 223 cm. Gift of George Lowther, 06.1312

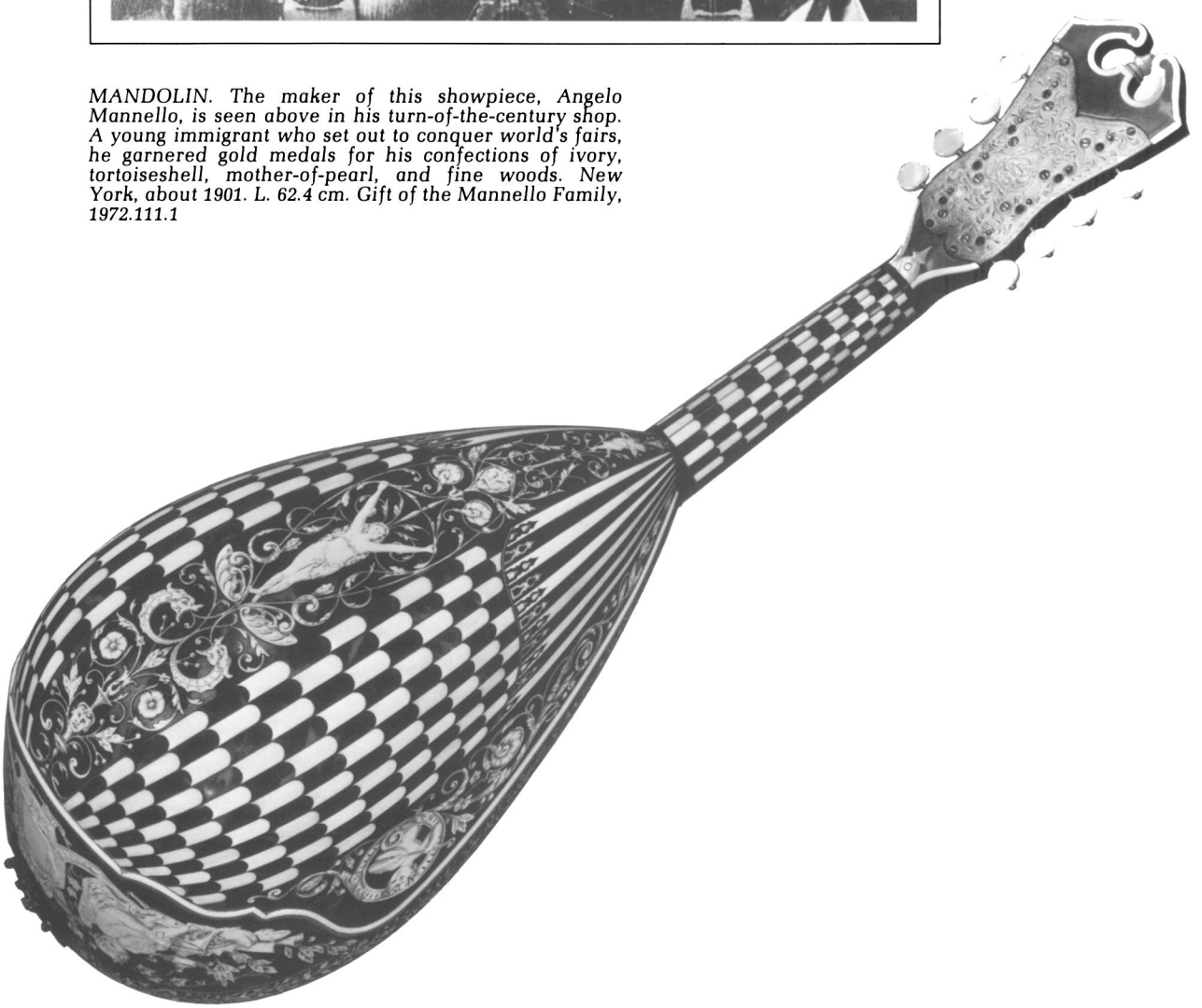
THE UNITED STATES

In the nineteenth century, when musicians trained in the United States still yearned for European recognition, the East Coast piano industry won international fame. American makers were responsible for tonal and mechanical innovations that gave the piano its modern form. British and German immigrants, familiar with factory methods and merchandising, shared with native builders the burgeoning market for Victorian pianos, organs, and other mechanized instruments. Later waves of immigrants, especially Italians, introduced less industrialized skills, working by hand in small neighborhood shops. School and municipal bands purchased quantities of well made winds, but violin making was carried on only in limited fashion, the best instruments being imported. Mail-order retailers opened a vast, homogeneous market, and rural makers of dulcimers, banjos, and the like plied their craft without regard to patents or protective import quotas. Instruments of all kinds were and continue to be heard in the United States, giving listeners, players, and makers the widest choice of timbres and types ever found in one nation.

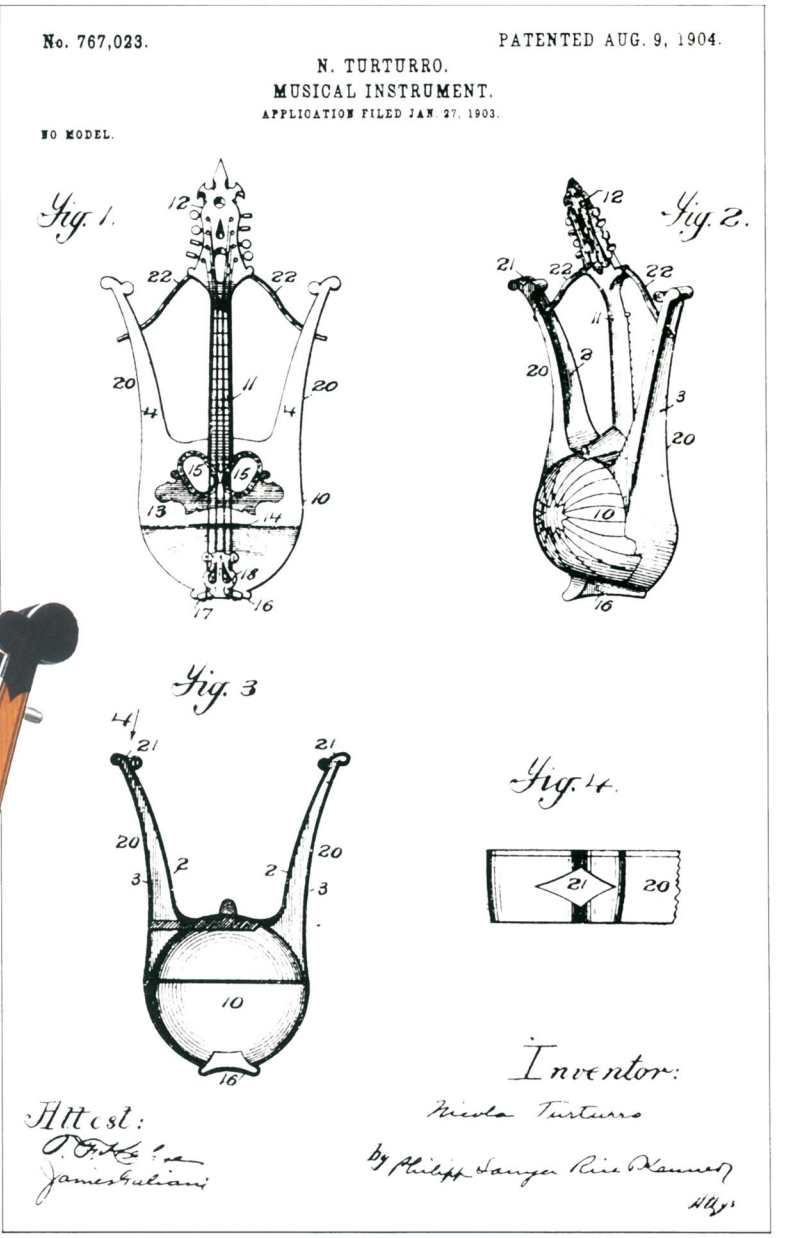


BANJO. Tension of the parchment head is regulated by a patent mechanism, one of many devices applied to banjos as they entered the urban market. The patent drawings show details of the 28 cables and central screw. Hercules McCord. St. Louis, about 1885. L. 91.5 cm. Gift of Hercules McCord, 89.4.2677. Patent drawing: Patents Collection, The New York Public Library, Astor, Lenox and Tilden Foundations

MANDOLIN. The maker of this showpiece, Angelo Mannello, is seen above in his turn-of-the-century shop. A young immigrant who set out to conquer world's fairs, he garnered gold medals for his confections of ivory, tortoiseshell, mother-of-pearl, and fine woods. New York, about 1901. L. 62.4 cm. Gift of the Mannello Family, 1972.111.1



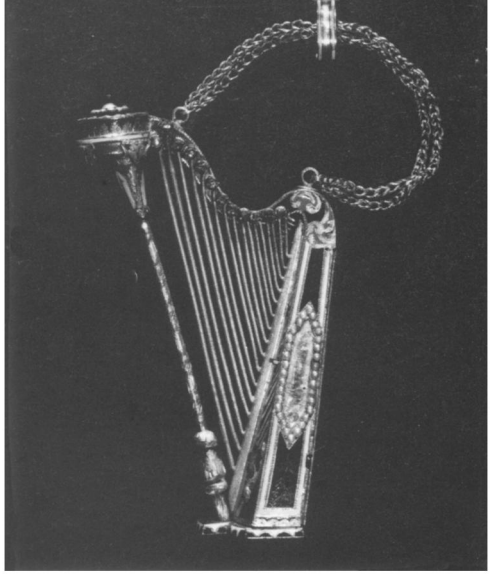

PIANO. SALLE POUR.



NEW YORK

UPRIGHT PIANO. Musical and commercial hub of America, New York has led the nation in instrument building since the early 19th century. Typical of a metropolitan dealer's wares, this imposing piano helped establish the city's primacy in keyboard manufacture. Firth, Hall & Pond. New York, 1835. H. 215 cm. Gift of Justine Watson, 44.57

LYRE-MANDOLIN. Hollow arms increase the resonance of this mandolin, inspired by the Greek lyre. This is one of many instruments patented by the immigrant maker Nicola Turturro, who died here in 1953. New York, about 1905. H. 63.8 cm. Rogers Fund, 1975.357.1. Patent drawing: Patents Collection, The New York Public Library, Astor, Lenox and Tilden Foundations



AUTOMATA

BARREL PIANO. Musical automata offer a living record of once popular music, programmed indelibly on rotating disks or barrels. Animated figures, standing on the little stage of an automatic piano, dance when a crank activates the piano's mechanism. Carried on an itinerant musician's back, this instrument enlivened a neighborhood as it called forth a shower of small change. George Hicks. Brooklyn, mid-19th century. H. 93 cm. 89.4.2048

MUSICAL PENDANT. Exquisite plaything of gold and enamel set with pearls and rose diamonds, this miniature harp contains a tiny clockwork automaton, audible only when held to the ear. Switzerland, about 1800. H. 7.1 cm. Gift of Murtogh D. Guinness, 1976.285.6

Opposite:

A dignified Indian musician plucks a drone on the tambura, which is normally held this way when played. Late 19th-century photograph

Back cover:

CH'ING. A suspended slab of sonorous nephrite, it was gently struck to punctuate ritual music. The forcefully carved branching veins express patterns of energy inherent in the stone. Amoy district, China. H. 46 cm. 89.4.64. Photographed by Rudy Muller