



patterns in music

By JOSEPH A. BARONE

In the story of Man, music has often provided a key to his artistic growth. It has revealed striking similarities of expression during various stages of his intellectual development and it has served as a correlating chain between cultures of widely separated epochs and ethnic origins.

Scholarly musicological research has enabled us to conjecture reasonably accurately the musical customs of such diverse ancient civilizations as those of India, Sumeria, Greece, and Rome. In recent years, archaeological findings have provided tangible evidence to substantiate these theories. With the assistance of ancient musical instruments and documents unearthed from long-forgotten tombs, vaults, and sacred temples, it has become possible to calculate specifically the scale systems on which music of the most remote cultures was based.

Just such a collection of rare musical instruments is housed at The University Museum. Containing rare and unique items from Sumeria, Greece, Africa, Asia, and virtually every other primitive and civilized culture known to us, this collection has supplied invaluable source materials for significant musicological and ethnomusicological discoveries.

Formerly displayed in a single gallery, choice specimens from the collection have more recently been integrated into the various exhibits throughout the Museum. In the African section, for example, one can find a lute of the Bajokwe tribe of the Belgian Congo, a harp-guitar from West Upper Guinea, and an assortment of drums from the Kingdom of Benin in Nigeria. On the walls of other galleries are displayed a Burmese gold harp, a Chinese la-pa, a Javanese chalung, a Tibetan rag-dun and a Roman buccina.

Perhaps the most interesting specimen in the entire collection is the large lyre from the Biblical city of Ur, in Sumeria. Dating about 2,600 B.C., it is mounted with a gold and lapis lazuli bull's head and with a plaque of engraved pieces of shell set in bitumen and depicting various scenes. The topmost register shows Gilgamesh fighting with two bulls; the others show a dog carrying joints of meat, a bear dancing while a donkey plays a lyre, and a mythological creature and a gazelle holding fluted tumblers (see cover).

The lyre was discovered in 1927 by Sir Leonard Woolley, director of the Joint Expedition of the British Museum and the University Museum to Iraq, along with a silver harp and a

pair of cylindrical silver pipes (double-oboes). These treasured relics have aided such musicologists as Francis W. Galpin (*Music of the Sumerians, Babylonians and Assyrians*), Kathleen Schlesinger (*The Greek Aulos*), and Curt Sachs (*Archiv für Musikwissenschaft*, April, 1925), to arrive at important calculations regarding the musical system of the Sumerians.

Canon Galpin, for example, theorized that this system was based on a seven-tone diatonic scale with the fourth step augmented. This would relate it to our present-day diatonic scale of Do, Re, Mi, Fa, Sol, La, Si, and Do, excepting that the Fa would be sharpened (C, D, E, F#, G, A, B, and C).

Professor Sachs, in turn, believed that such a scale might have had a nonchromatic pentatonic basis, his findings being further developed by Dr. Schlesinger whose research on the silver pipes (with their equi-distanced four finger-holes) led her to arrive at a pentatonic scheme approximating C, D, E, F#, G#, and the octave C by overblowing.

This latter scale is related to our whole-tone scale, which uses the same notes with the addition of the A Sharp (i.e., C, D, E, F#, G#, A#, and C).

Instruments from other non-European cultures substantiate the theory that many if not most systems did not follow our diatonic scale pattern. It must be understood that this diatonic scale-scheme lends itself particularly well to our own musical concepts because of our highly complex cultivation of harmony. Risking oversimplification, it might be generally concluded that our development of harmony followed our aural acceptance and utilization of the higher components or overtones of musical sounds. If we examine the overtones of the note C, for example, we find in the first three octaves all the elements of basic classical harmony, with the interval of the octave, fifth, major third, minor third, seventh, etc., while in the fourth octave the melodic chain approximates our diatonic gamut of Do, Re, Mi, Fa, Sol, La, Si, and Do.

However, since non-European musical cultures are almost exclusively concerned with only melody and rhythm, their basic octave has been subdivided into an almost infinite variety of scale schemes. Arabia arrived at a 17-tone scale as far back as the 13th century, Java evolved its equi-distanced pentatonic and heptatonic scales in the 8th century, and India established its 22-intervalled *sruti* system during the 6th century. Further, Hindu music conforms to a rigid system

of scale-like melody patterns called *ragas*, of which there are no less than 72.

It must be understood that for many Asiatic cultures music has an essentially religious or metaphysical significance. For this reason, our Western system, which conforms to strict rules of harmony, is found not only constraining as to melodic invention but puerile in its academic restrictions.

Moreover, while the diatonic scheme of our Western music (C, D, E, F, G, A, B, and C) can be found in a number of other non-European musical systems, it is the pentatonic (five-note) scale of C, D, F, G, and A which seems to appear most frequently among such widely-separated musical cultures as those of the Chinese, Africans, Celts, Scots, and the American Indians.

As a matter of fact, since the late 19th century many of our own Western composers seem to have been drawn to exotic musical sources for fresh melodic inspiration. Thus we find Debussy employing the whole-tone scale, (C, D, E, F#, G#, and A#), a penta-scale consisting of C, D, F, G, and A (based on the Japanese Ritsusen scale), and the so-called "Aeolian" scale of C, D, Eb, F, G, Ab, B, and C (known in India as either Kyravâni or Pilu). Ravel used, among other scales, the "Phrygian" mode of C, Db, E, F, G, Ab, Bb and C (equivalent to the Indian Vakhulabharna).

In his opera, *Madame Butterfly*, Puccini evoked Oriental color by using the Japanese Zokugakusempo penta-scale of C, Db, F, G, Bb, and C ascending and C, Ab, G, F, Db, and C descending; the Ritsusen row of C, D, F, G, A, and C; and the Ryosen scale of C, D, E, G, A, and C.

In recent years, there has been a trend among some of our contemporary composers to shift to non-diatonic and serial writing, and to experiment with microtones (intervals smaller than our half-steps). Among these have been Alois Haba, Hans Barth, Ernest Bloch, and Bela Bartok. As a matter of fact, Julian Carillo has gone beyond the quarter-tone by using eighth-tone and sixteenth-tone intervals; and Harry Partch has based some of his compositions on a forty-three tone subdivision of the octave.

Thus, as the music of the West reverts more and more toward long-established concepts of the East, we find the universal language of music revealing an affinity of musical cultures spanning five thousand years, bringing each into a common orbit regardless of the remoteness of epochs and ethnic origins.

