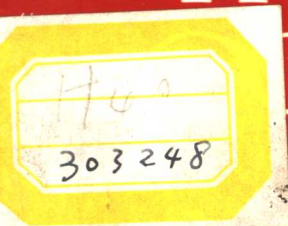


THE OXFORD
COMPANION
— TO —
MUSICAL
INSTRUMENTS



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ANTHONY BAINES

THE OXFORD
COMPANION TO
MUSICAL
INSTRUMENTS

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EDITED BY
Anthony Baines

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INTRODUCTION

This book has its origins in a suggestion from the publishers, made shortly after the appearance of the *New Oxford Companion to Music* (1983), that the material in that work bearing on musical instruments might form the basis for a compact reference work on the instruments themselves—that is, leaving aside electric and the vast field of electronic instruments, on which materials by Richard Dobson, originally intended to form part of the present work, have appeared as a separate volume.

Many of the original NOCM articles will be seen again, little changed save where fresh discoveries or viewpoints across the intervening years have called for a revision. A few have been substantially rewritten, however, while many articles that described several or many different instruments of a family or class have been split up into separate entries for direct consultation—though it has seemed preferable not to impose a rigorously consistent scheme throughout, and not a few of the original collective entries have been judged better left practically as they were.

Makers of instruments not being entered individually, an Index to those cited in the course of articles is included at the end of the book, showing the entries in which their names appear.

One would expect this book to be primarily concerned with instruments of our own ('Western') traditions. One would also certainly expect due attention to those of further afield ('non-Western'). Here the editor acknowledges great reliance on the right to draw freely—be it verbatim or not—on the expert contributions to the NOCM on the music of different major world regions or cultures. Some general observations on the instruments of each, along with a list of those which are entered individually, will be found under: AFRICA, AMERICAN INDIAN, CHINA AND KOREA, INDIA, JAPAN, MIDDLE EAST, PACIFIC ISLANDS, and SOUTH-EAST ASIA. Correct orthography in foreign instrument names is not always strictly followed, diacritics being omitted in many cases (e.g. *vina*) where the word is well known in English without them.

The contents of this one-volume Companion are necessarily selective, with entries of a controlled total number calculated to provide a guide to names and terms most likely to be met in literature, musical or general. As the offspring of a larger Companion the book in no way sets out to be compared with Sibyl Marcuse's comprehensive Dictionary of almost 30 years ago or the invaluable three-volumed *New Grove Dictionary of Musical Instruments*. Rather, the present work provides a run-down of the sort of things that a musical instrument can be—or better said (to follow Karl Izikowitz in the title of his work of 1934 on the Americas), 'musical and other sound instruments', subscribing to a long tradition in general

accounts of instruments to sidestep commitment as to what is indisputably 'musical' and what is, by intention and use, definitely not. A few of the present entries cover instruments made for producing sounds which, even if of a musical quality, may never yet have served music in any direct capacity whatsoever.

Musical technicalities are taken no further than should be easily understood by the general reader. A rather large quantity of musical notes (C D E, etc.) will, however, be found among the entries. It is of course perfectly possible to pursue a valid and creative interest in musical instruments without knowing a note of music; but a reader who has this knowledge may wish to know of an instrument 'how do you tune it?', 'how deep does it go?', and other such things so simply said in notes, until it may come to a question of distinguishing notes in different octaves: of the seven Cs on the piano, for instance, which C is meant? There are at present two competing systems, both with roots in the Middle Ages:

Ex. 1.

a) ...B"	C'... B'	C... B	c... b	c'... b'	c"	c'''	c''''	c'''''
b) BBB	CC BB	C	c	ċ	c̈	c̈́	c̈́́	c̈́́́
c) ...B0	C1	C2	C3	C4	C5	C6	C7	C8

1. Old German tradition, normal through the times of Praetorius (Ex. 1a; a German may still speak of 'the three-stroked D', i.e. *d'''*, and so on). It was later tidied up by Helmholtz (Ex. 1b), becoming standard also in Britain for works on instruments, including this one.

2. France, Italy: notes named *do* (in France originally *ut*), *ré*, *mi*, etc., formerly with cumbersome ancient octave designations derived from the Guidonian hexachords ('A la mi re', etc.) but early in the present century modernized with numbers, the tuning A (*a'* in Ex. 1a) becoming *la*⁴, and the bottom C of the piano *do*⁰. In 1960 the American Standards Institute adopted the same numbering system but affixed to the familiar note letters A B C, etc. (Ex. 1c). In Britain there has grown a strong movement to follow the same practice.

FURTHER READING

For author references in or appended to articles see Works Cited (at the end of the book), where full titles are given under authors' names. (NB: It has to be admitted that although new books are welcomed every year,

INTRODUCTION

there are still categories of instrument on which the literature is decidedly thin when it comes to the authoritatively informative kind of book that one is looking for.)

In the matter of articles in periodicals, the quantity now reached among those devoted to instruments, in English alone, is such that in order to guide non-specialist readers to a firm start without needing vast space, the course taken here is to allow three journals, each noted for wide subject coverage, to speak for the progress of instrument research over the recent years, namely *The Galpin Society Journal*, *Early Music*, and the *Journal of the American Musical Instrument Society*; for details see Works Cited.

A. B.

London, 1991

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The editor wishes to thank the following writers for articles taken over from the *New Oxford Companion to Music* or containing material adapted from sections of such articles for the purposes of the present Dictionary.

Pearle Christian, Michael Burnett (Steel Band)

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Helen Myers (African Music, Pacific Islands, South-East Asian Music)

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Alec Roth (Indonesia)

James Tyler (Cittern)

D. R. Widdess (Indian Music)

Rembrandt Wolpert (Chinese Music)

M. J. Wright (Bells, Handbells).

ABBREVIATIONS

Amer.	American
Arab.	Arabic
arr.	arranged by
b.	born
c.	<i>circa</i> (about)
cent.	century
d.	died
ed.	editor; edited by
edn.	edition
<i>EM</i>	<i>Early Music</i>
Eng.	English
esp.	especially
facs.	facsimile
<i>fl.</i>	<i>floruit</i> (flourished)
Fr.	French
Ger.	German
Gk.	Greek
<i>Grove</i>	<i>The New Grove Dictionary of Music and Musicians</i>
<i>GSJ</i>	<i>Galpin Society Journal</i>
Hung.	Hungarian
incl.	including
It.	Italian
K.	Köchel (catalogue of Mozart's works)
Lat.	Latin
L. H.	left hand
lit.	literally
MS(S)	manuscript(s)
n. d.	no date
<i>NOCM</i>	<i>The New Oxford Companion to Music</i>
orch.	orchestrated by
Port.	Portuguese
pron.	pronounced
publ.	published
repr.	reprint(ed)
rev.	revised
R. H.	right hand
Ru.	Russian
Sp.	Spanish
trans.	translation; translated by
Turk.	Turkish
*	cross-reference to another article, in which the reader will find more information

PICTURE CREDITS

Accademia Filarmonica, Verona: cornett, pl. 1a; Ashmolean Museum, Oxford: cittern, pl. 1, English guitar, pl. 1.

Barnes & Mullins Ltd., London: mandolin, pl. 2; Bate Collection, Oxford: basset horn, pl. 1, bassoon, pl. 2, clarinet, pl. 1f, clarinet, pl. 2, recorder, pl. 1, saz, pl. 1; B. T. Batsford, London: Japan, pls. 1 & 2 (from F. T. Piggott, *The Music and Musical Instruments of Japan*); Bayerische Staatsbibliothek, Munich: Renaissance instruments, pl. 1; Deben Bhattacharya, Paris: India, pl. 1; Biblioteca Nazionale Marciana, Venice: fiddle, pl. 1; Bibliothèque Nationale, Paris: trombone, pl. 2; Bodleian Library, Oxford: medieval instruments, pl. 1 (MS Bodley 264, fol. 188v); Boosey & Hawkes Ltd., London: glockenspiel, pl. 1, sousaphone, pl. 1, tuba, pl. 1, vibraphone, pl. 1; photo Max Yves Brandily, Paris: harp, pl. 3; John F. Brennan, Oxford: organ, pl. 1; British Library, London: fiddle, pl. 2, hurdy-gurdy, pl. 1; British Museum, London: aulos, pl. 1; Alexandr Buchner, Prague: bagpipe, pl. 1.

CECRI, Paris: accordion, pl. 1; Cliché des Musées Nationaux, Paris: serpent, pl. 1.

Deutsches Museum, Munich: clavichord, pls. 1 & 2.

Raymond Elgar, Bexhill: double bass, pl. 1.

Gemeentemuseum, The Hague: horn, pl. 2, lute, pl. 2; Germanisches Nationalmuseum, Nuremberg: lute, pl. 3, piano, pl. 1, viola d'amore, pl. 1.

Billy Reed Hampton: Appalachian dulcimer, pl. 1; Photo Ernst Heins, Amsterdam: gamelan, pl. 1; Hobgoblin Music, Crawley: rebec, pl. 1; T. W. Howarth & Co. Ltd., London: oboe, pl. 1.

Illustrated London News: friction drum, pl. 1.

Estate of Jean Jenkins: lute, pl. 4 (from J. Jenkins and Olsen, *Music and Musical Instruments of Islam*, 1976); Foto Jobst, Klingenthal: Wagner tuba, pl. 1.

Karl-Marx-Universität, Musikinstrumenten-Museum, Leipzig: cornett, pl. 1b, racket, pl. 1; Korean Overseas Information Service: Korea, pl. 2; Kunsthistorisches Museum, Vienna: recorder, pl. 2; Kunstsammlungen Veste Coburg: bandora, pl. 1.

LAVIGNAC—Editions DELAGRAVE—PARIS: fiddle, pl. 3, kemancha, pl. 1, mrdanga, pl. 1; Martin Lessen, Rochester, NY: keyed bugle, pl. 1 (photo Smithsonian Institution); Bill Lewington Ltd., London: clarinet, pl. 1a-e, flute, pl. 1; Lyon & Healy Harps, Inc., Chicago, Illinois: harp, pl. 1.

Metropolitan Museum of Art, New York: lyre, pl. 1 (Fletcher Fund, 1956), square piano, pl. 2 (Rogers Fund,

1975); Marian and Tony Morrison, South American Pictures, Woodbridge, Suffolk: panpipes, pl. 1; Museo del Prado, Madrid: shawm, pl. 1; Museum für Volkerkunde, Leipzig: South East Asia, pl. 1.

National Army Museum, London: military band, pl. 1; National Bank of Greece: Cretan lira, pl. 1 (from F. Anoyanakis, *Greek Popular Musical Instruments*, 1979); National Museum of Finland, Helsinki: kantele, pl. 1; *Nice Matin*: pipe and tabor, pl. 1 (photo Vincent Tivoli); Nordisk Rotogravyr Stockholm: Middle East, pl. 1 (from Tobias Norlind, *Musikinstrumentens Historia*, 1941).

Paxman Ltd., London: horn, pl. 1; Pitt Rivers Museum, Oxford: Northumbrian bagpipes, pl. 1, sheng, pl. 1, vina, pl. 1, zither, pl. 3; Popperfoto, London: saung, pl. 1, South East Asia, pl. 2; Premier Percussion Ltd., Leicester: drum set, pl. 1, timpani, pl. 1.

Alec Roth, Durham: bonang, pl. 1; Royal College of Music, London: cello, pl. 1, chitarrone, pl. 1, tromba marina, pl. 1; Royal Tropical Institute, Amsterdam: drum, pl. 1 (photo Felix van Lamsweerde); Russell Collection of Early Keyboard Instruments, Edinburgh University: virginal, pl. 1.

The Edward F. Searles Musical Instrument Collection; given by Edward S. Rowland, Benjamin A. Rowland, Jr., George B. Rowland, Daniel B. Rowland, Rodney D. Rowland, and M. A. Swedlund, in memory of their father, Benjamin Allen Rowland (courtesy, Museum of Fine Arts, Boston): regal, pl. 1; The Selmer Company, L.P.: trumpet, pl. 1; Shrine to Music Museum, University of South Dakota: trumpet, pl. 2; Smithsonian Institution, Washington: square piano, pl. 1; Society for Cultural Relations with the USSR: lute, pl. 5; Sotheby's: cornet, pl. 1, double flageolet, pl. 1, harpsichord, pl. 2, oboe, pl. 2, slide trumpet, pl. 1, spinet, pl. 1, zither, pl. 2; Steinway & Sons: piano, pl. 2; *The Straits Times*: nose flute, pl. 1.

Tameside Local Studies Library: brass band, pl. 1; *The Telegraph* Colour Library: sound sculpture, pl. 1; J. Thibouville-Lamy & Co., London: autoharp, pl. 1.

VAAP, Moscow: bandura, pl. 1; Victoria and Albert Museum, London: virginal, pl. 2; H. Roger Viollet, Paris: military band, pl. 2.

Warwickshire Museum: lute, pl. 1; Mrs Bliss Wiant: China and Korea, pl. 1, qin, pl. 1 (from Bliss Wiant, *The Music of China*, n.d.).

Zentralantiquariat der Deutschen Demokratischen Republik, Leipzig: pluriarc, pl. 1 (from B. Ankermann, *Die afrikanischen Musikinstrumente*, 1901, repr. 1976).

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A

Accordion (the smaller types better known as 'melodeon'; Fr.: *accordéon*; Ger.: *Akkordeon*, *Ziehharmonika*; It.: *fisarmonica*; Ru.: *garmonika*; Sp.: *acordeón*). *Free-reed instrument held between the hands, with finger buttons ('button keys') or piano-style keys for the melody played by the right hand, and for the left hand, buttons (or spoon-shaped keys) giving bass notes and chords. The left hand, which works the bellows, is passed through a strap to be able to draw them outwards, fanwise (Pl. 1), as well as press them inwards. The name, from Ger. *Akkord*, 'a chord', appears first in a Viennese patent by Cyril Demian and his sons in 1829, alluding to this provision of ready-made chords, then new, and a distinguishing mark of accordions of all types in contrast to *concertinas.

1. *Single or double action.* Each melody button controls, basically, two metal reeds, one speaking on the press, the other on the draw of the bellows. They are riveted on either side of a rectangular metal plate (A in Fig. 1) with a slot under each reed; the plates are glued over compartments in a long wooden reed-box projecting into the interior of the bellows. A reed vibrates only when air flows in the direction first on to the reed, then through the slot in the plate. Air flowing in the opposite direction would merely bend the reed away without vibration. A leather (or plastic) flap is therefore placed over each slot on the opposite side from the reed, to prevent wastage of wind in this way. The reed B (Fig. 1), attached on the outside of the plate, speaks on the press; C is the flap which prevents air then reaching the other reed (invisible, on the underside of the plate) which speaks on the draw,

when a similar flap (on the underside below B) prevents air flowing past reed B.

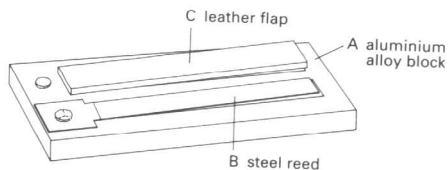


Fig. 1.

(a) *Single action.* The original action (Melodeon, British chromatic accordion, 2 and 3 below). The two reeds of a pair give different notes, in most cases adjacent notes of a major scale; an octave of the scale needs four buttons only—e.g. C, E, G on the press, D, F, A, B on the draw. Melodies therefore require short to-and-fro movements of the bellows, bringing a rhythmic briskness especially effective in dance music.

(b) *Double action.* (Piano accordion, Continental chromatic accordion, 4 and 5 below). Both reeds give the same note, which therefore sounds whichever way the bellows move, and favours music of more sweeping character.

With either action the pairs of reeds are often duplicated or further multiplied for various effects, e.g. slightly off-tuned to give a 'beat' tremolo, or to sound in octaves. Register knobs or tabs on the outside then move slides to bring in or shut off the additional ranks of reeds as desired, and may be marked by a code using two horizontal lines: a dot between them signifies normal pitch; above them,



Pl. 1. Melodeon accompanying violin for folk music, Ireland.

an octave higher; below, the octave lower. Dots above and between may stand for 'oboe' effect, and in all three positions for 'cello'. Two dots in the same space signifies 'tremolo'.

Every accordion has an air-release button for the left thumb, opened when filling or exhausting the bellows without playing a note or chord.

2. *Melodeon*. Very popular for folk music. The simplest form has a single row of melody buttons for the scale of C, or often G, D, or A. The low dominant is duplicated (as on a diatonic *harmonica) to give a complete dominant harmony on the draw. Two spoon-shaped keys for the left hand give the bass note and chord of the tonic on the press, the dominant on the draw. Older melodeons had brass reeds but now they are steel.

A common addition is another row of melody buttons, and corresponding left-hand keys, for playing in the key a fifth or fourth higher (Pl. 1), e.g. in G and D, popular in Britain, or on the Continent F and C, sometimes with in addition a half-row for accidentals ('club' model) or, rarer, four or five rows in keys a fifth apart ('helicon bass', popular in Yugoslavia for instance). Though one normally plays on one row at a time, extra rows offer useful alternative fingering, a 'press' note becoming available also on the 'draw'. Though very rhythmical in effect, the in-and-out action for the scale makes the simpler melodeons less suitable in 6/8 time, so that in Ireland, for jigs, and Italy, for the *Saltarello*, a chromatic instrument, or one with a half-row giving alternative fingerings, is most usual. A popular name in Italy is *organetto* (the instruments said to have been first made in that country by Paolo Soprani of Castelfidardo in Marche, c.1860).

3. *British chromatic accordion*. This corresponds to the chromatic harmonica in that it adds to the single-row melodeon a second row of buttons giving notes a semitone higher (or lower). Therefore, if

playing in other than the basic key, other fingering patterns have to be learnt; yet quick dances can be played with great speed and clarity. Players tend to ignore the bass on these instruments since makers' tradition is to supply this for the basic tonality only. There may also be *three* rows of buttons a semitone apart, in B, C, and C \sharp ; once the technique of playing across the rows has been mastered this instrument provides one of the finest accompaniments to country dancing, and is particularly popular in Scotland. Large and heavy 43 x 20 cm. (17" x 8"), it was developed around 1946; Jimmy Shand has been perhaps its best-known player. There is a row of tabs by the treble keyboard to bring into play extra reeds for 'sharp tremolo', 'flat tremolo', upper and lower octaves, and combinations of these. The bass side resembles that of the piano accordion (see 5, below) with 120 buttons and double action.

4. *Continental chromatic accordion*. A double-action instrument, held by many to provide an ideal fingering for an accordion. In France it is the accordion of the celebrated 'musette' school. The basses and chords are the same as on a piano accordion. The right hand has buttons, three rows being the essential, the buttons arranged on the system shown in Fig. 2. Those of each row are separated by a minor third, and those in a slanting line from left (top) to right by whole tones. All tonalities are covered by three fingering patterns: one being for the major keys of A, C, E \flat , F \sharp , the ascending scale in all four of these keys being fingered ('1' being the index): 1 2 3 2 3 4 3 4. Corresponding patterns cover the other two groups each of four major keys. Larger instruments add two more rows, duplicating the lower two of Fig. 1. With five rows one pattern suffices for every key. There is also a reversed scheme known as 'B fingering', much in favour in Germany.

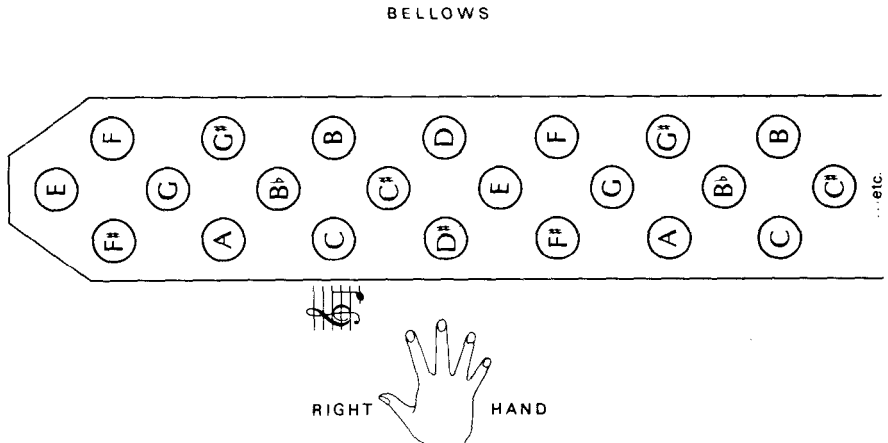


Fig. 2.

5. *Piano accordion*. Double action is here essential since each key of a piano-style keyboard must always sound its own note and no other. The chords and bass notes are however made with buttons, and the sizes of the instrument are customarily reckoned by the number of them—up to 120 (occasionally more), those with fewer than 32 being usually regarded as children's models. With 120 bass buttons, the keyboard will cover $3\frac{1}{2}$ octaves from *f*, with up to 11 tabs for different registers. Some of these registers are achieved by means of tone chambers giving the effect of bassoon, violin, bandoneon (see *CONCERTINA*, 4), etc., as well as the various tremolo and octave groupings. The bass buttons, for the left hand, are laid out in six rows, proceeding by fifths along each row. From the nearest to the bellows the rows are: 'counter-bass' (the sequence of fifths a third different from that of the fundamental bass); fundamental bass; its major chord; minor chord; dominant seventh; and diminished seventh. Each chord is basically (i.e. until octave coupling is brought in) of three notes, made from a set of reeds tuned to a chromatic series from *g* to *f#*'. The button for a given chord pushes a metal bar within the casing carrying three pins which move stiff wire rods which in turn rotate the required three out of a set of 12 long thin rods running longitudinally from one end of the case to the other, one for each chromatic note. Links from these then lift the pallets which allow air to pass through the required reeds (the system somewhat recalling the 'roller board' used in tracker-action organs; see *ORGAN*, Fig. 4).

A piano accordion of the present kind was advertised in the 1911 catalogue of Mariano Dallapé (founded c.1876), of Stradella, near Milan, though he made no claim to have invented it. Some of the larger models now have 'free bass' buttons, for playing melodies or counterpoints in the bass, these buttons following the arrangement of the right-hand buttons of the continental chromatic accordion (4, above). Such 'free bass accordions' greatly enlarge the scope for new compositions for accordion.

6. *Electronic piano accordions*. These are of two kinds. One has normal bellows and reeds, with a switch by which the keys will control an electronic tone generator (a single-oscillator divider, adjustable for tuning the reeds) plus effects and so on; the reeds and the electronics can be used separately or together, e.g. for the left hand to give a bass guitar sound with the chord buttons giving guitar sound. The other kind is fully electronic, with a similar electronic tone generator; the bellows do not pump air but serve to control loudness (with swell, etc.).

7. *Early accordions*. Examples from shortly after the 1829 Viennese patent are in narrow rectangular shape, very light to hold in the hand, with ten round pearl-covered right-hand keys and two simple push-valves for the left. Rather similar in shape is the French accordion made from the 1840s, once

much exported (and still advertised in France up to the First World War). This is often seen as an antique, called 'flutina', one of its old trade names. On it were laid the foundations of the 'musette' school. Delicately made, of inlaid mahogany with mother-of-pearl keys, it is often pitched in A with a second row of keys for the semitone below. The tonic is on the draw (not the press) and there are two left-hand buttons as on the simple melodeon.

8. *Repertory*. As with so many of the instruments newly invented in the 19th century, the solo and ensemble repertory is largely written by, or for, the leading artists themselves. Tchaikovsky, however, included the accordion in his *Orchestral Suite* of 1883; Berg, in *Wozzeck* (1921); Prokofiev, in his *Cantata* of 1936; Charles Ives, Virgil Thomson, and Roy Harris in various works; also Hindemith, Gerhard, and later composers such as Musgrave (in her *Clarinet Concerto*).

Acoustic. The rapid ascendancy of electric and electronic instruments in many fields has led to a frequent need to distinguish non-electric or non-electronic forms of an instrument—keyboard, percussion, etc., as well as guitar—as 'acoustic'.

Acoustics of musical instruments. The present book is mostly about instruments as one sees them, silent or being played. One would like to add 'and how one hears them', thus taking the matter straight into acoustics, as the science of musical instruments, a subject which however, over the years, has grown into a complex of physics, mathematics, and psychology, advanced to a degree that puts an up-to-date summary far beyond the present scope. There are, however, matters, often treated under elementary or basic acoustics, which enter repeatedly when describing instruments and can still be looked at usefully, though with due allowance for the considerable simplifications involved, as see the following entries: BEATS AND DIFFERENCE TONES; CAVITY RESONATOR; CENTS; FORMANT; HARMONIC SERIES; HERTZ: PARTIALS; PITCH; TEMPERAMENT. Also (percussion instruments): GLOCKENSPIEL, 5; PERCUSSION, 3; TIMPANI, 5; TUBULAR BELLS, 2; XYLOPHONE, 2; (stringed instruments): BOW, 1; HARMONICS; MONOCHORD; STRINGED INSTRUMENTS, 1; (wind instruments): CROSS-FINGERING; OVERBLOWING; STOPPED PIPE; WIND INSTRUMENTS, 1, 3.

Benade 1976; Campbell and Greated 1987; Hall 1980; Helmholtz 1875; Rayleigh 1877; Taylor 1976; Wood 1930; etc.

Aeolian harp (from the Greek god Aeolus, the Keeper of the Winds). Instrument with strings which, when the instrument is placed outside or in the opening of a window, are sounded by the wind, producing a vague, changing harmony. It has a soundbox up to one metre (3') long, placed vertically or horizontally and wide enough for a dozen or so gut or wire strings (not too thin) to be stretched along it over a low bridge near each end. The strings, of the same length, are all tuned to

the same fairly deep note, but are graded in thickness.

It is still not clear how it works, but it seems the air-stream, as it passes a string, sheds eddies which tend to shake the string from side to side, and when the eddy frequency comes near to a harmonic frequency of the string, this will vibrate at that harmonic. As the wind speed fluctuates, different harmonics will come to the fore, and with strings of different thicknesses, a different harmonic pitch from each. Since all are tuned to the same note, the sum result is a chord, rising and falling bodily up and down the harmonic series as the wind speed varies. With faster wind the thinner strings may vibrate in the region above the eighth harmonic, where harmonics lie a tone apart or less, adding a strange flavour to the sound. Some models have a second set of strings tuned an octave lower, to thicken the chord.

The Aeolian harp has been known from at least the 17th century, when Athanasius Kircher drew attention to it (1650) (it corresponds to 'aeolian bows' of the Far East, hung in trees). It became very fashionable in Europe in the first part of the 19th century, and is frequently mentioned in the poetry of Coleridge and Shelley. Georges Kastner, in Paris, wrote an extensive monograph on the instrument (1848).

Aeolsklavier. See CLASSIFICATION, I. Several other inventions, also of around the 1820s with names beginning 'aeol-', were *free-reed instruments with keyboard.

Aerophone. One of the main classes in modern *classification of instruments: almost entirely wind instruments but including such as *bull-roarer and *buzz-disc.

Africa. South of the Sahara, lands of bewitching music in which instruments play their due share: instruments many of which have continued to hold true to forms going back to the earliest traceable cultural strata; others developed from such forebears into complex forms found nowhere else, while yet others have sprung into existence as pure inventions no less uniquely African. Further are those, mostly with more limited distributions, that have entered the continent from outside, or so it is presumed in the absence of historical data from times perhaps as remote as Egyptian Antiquity; or of Arab or European origin, likewise to find a place beside those of the foundation cultures. Towering over all is the drum, or rather, the symphony of drums with other associated percussion, the voices, and the dance, in which the genius for rhythmic complexity is manifest as a foremost hallmark of African music, as well as the driving force behind its influence from the New World upon our lives in the West, even where here reduced to elementary patterns in plain common time.

1. *Types of instruments:* (a) *Idiophones.* Rattles: strung shells, nuts, etc., shaken or worn; gourd, basketry, often used in pairs of contrasting pitch (cf. *maracas), also types with external beads (in Ex. 1, *axatse*, and see CABAZA). Scrapers: notched stick etc., and notches cut in a *musical bow or a drum. *Slit drums, often as *talking drums. *Xylophone, with from two bars upwards. Bells: wood or metal, with clapper or struck on the outside, single or double bell (as in Ex. 1, *gankogui*, and see AGOGO BELL). Lamellaphones (**sansa*) of plucked tongues, usually iron, a uniquely African instrument. Also, and to a greater extent than is usual in the West, rhythmic employment of domestic and other objects that come ready to hand ('improvised instruments').

(b) *Drums.* From rudimentary, of gourds, clay pots, tin cans, with skin membrane drawn over the opening; to drums carved in wood in all shapes (see DRUM, 4), played with sticks or hands, with sounds of contrasting timbre and pitch (Ex. 1), and shells or jingles often attached, adding buzzing sounds.

(c) *Stringed.* *Musical bows (mouth bow, gourd bow): *Gora (bow with blown vibrating quill). *Pluriarc (bows combined in one instrument). Harp: arched harps (see HARP, IOA), mostly north of the Equator. *Lyre, mainly East Africa to Ethiopia. *Kora ('harp-lute') with perpendicular notched bridge, West Africa. *'Ground instruments', over a pit in the ground. *Idiochord zithers, for self-accompanying songs and sung poetry characteristically with short figures continually repeated; 'harp-zither', West Africa (see MVER). Stick-zither (see SESE). Fiddles, popular, with one to three strings.

(d) *Wind.* Flutes: chiefly end-blown, often notched, and with three to four holes (see FLUTE, 6); carved wood or horn whistles, often, like the flutes, played in ensembles (see NANGA). Horns: ivory, antelope horn, gourd, etc., side-blown, again often in ensemble; longer types (trumpets) of wood, cane, gourd. Reed instruments: fewer, some of Arab extraction, as Hausa *algaita* (see SURNA). Also an aerophone, *bull-roarer, still whirled in initiation rites in the Congo.

2. *Rhythms.* As one single illustration, Ex. 1 is adapted from a transcription of the *Nyayito* funeral dance of the Eve people of Ghana made by A. M. Jones (1959; see also NOCM, i. 30-4 by Helen Myers). The excerpt begins at the point where the drums (hand-beaten) enter. Shortly preceding this, the song and the hand-claps have already begun, and the iron double bell *gankogui* (played with a wooden beater) has set up the co-ordinating 'time-line' which continues throughout with metronomic regularity, along with a rhythm from the bead rattle *axatse*. The master drummer, on the large drum *atsiméuu*, enters with a standard pattern associated with this dance (the text underlays

Ex. 1. Ghana (Eve), Nyayito funeral dance, short extract from point where the drums enter (adapted from NOCM 32-3, transcription after. Jones 1959)

5

Ganko.

Axat.

Claps

Song
ma-ke ma-ke, ve dzia de dzade nyime ve-nu. Anyakoawo yi a-dzawu ge na akpa-

Atsi.
GA KREBE KREBE GA KREBE KREBE KI GA KREBE KREBE GA KREBE KREBE KI-

Sogo
KI-YA KI-YA KI-YA KI-

Kidi
KI-YA KI-YA KI-YA KI-

Kagang
KA-GAD KA GAD

7

Ganko.

Axat.

Claps

Song
- lu-ce, mado a-loewo gbe na mi dzro

Atsi.
- YA KI-YA KI-YA KI-YA KI-YA KI-YA KI-

Sogo
- YA WOYAKPEDA-GANA-A-BU-YA. --- Repeat ---

Kidi
- YA KI-YA KI-YA KI-YA, --- Repeat ---

Kagang
KA-GAD KA GAD

indicate the drummers' mnemonic syllables identifying different pitches and types of stroke); his first entry, a rhythmic phrase of 5 + 7, an 'additive' rhythm to which the smaller drums *sogo* and *kidi* give a standard reply. The smallest drum *kagang* starts a simple pattern in cross-rhythm to the iron bell and repeats it through the whole piece.

It would be easy enough in Western notation to transcribe all the parts in a matching 12/8; but such vertical arrangement would not reflect the perception of the African players, who hear each rhythmic part independently (e.g. 5/8 etc. of the master drum while others play a 6/8), and with the time-line as an unceasing reference point. The syncopation, the superimposition of additive rhythm, and the relentless time-line, all combine in the excitement and drive of African music, in a quality that West African musicians call 'hot'; the hotter the rhythm, the better the performance.

Ankermann 1901; Brandel 1961; Hyslop 1975; Jones 1959; Kirby 1934; Söderberg 1956; Tracey 1948; Wachsmann in Trowell 1953.

Afuche. See CABAZA.

Agogo bell. Afro-Brazilian and Afro-Cuban metal percussion instrument used in some Latin-American dance music and by school percussion groups. Two small conical bells of blackened thin metal, soldered down the sides, are joined by a metal loop for holding while striking on the outside with a metal rod. The larger bell, c. 15 cm. (6") long, stands a little beyond the other for convenience in striking them alternately, and may sound a fifth lower.

The parent instrument, the West African double iron bell (*agogo*, *ngongi*, etc.) is forged and soldered from a single length of iron sheet, then bent over for the two bells to stand level. It is often a leading rhythm instrument in dances, as see AFRICA, Ex. 1, here named *gankogui*. Another common type of African iron bell is the single bell with an iron-rod clapper like that of a European *cowbell.

Aïda trumpet. See TRUMPET, 3c.

Ajaeng. The long zither (c. 1 metre or 3') of Korea on which the strings are 'bowed' with a rosined stick of forsythia wood. The right-hand end, near which (as with other long zithers of the Far East) the player sits, is raised up (see CHINA AND KOREA, Pl. 2, centre front). The stick is held with the forefinger above (rather as one holds a dart) and produces deep, full 'rasping' sounds from the seven strings (silk, nylon) pentatonically tuned. Each string has a movable bridge of 'inverted Y' form (as on *zheng, *koto). Uses: court orchestra; folk ensembles.

There is a Chinese mention from about the 10th century AD of a zither, *yazheng*, sounded with a bamboo strip, the *ajaeng* being a surviving form. There are also modern Chinese versions (*mingzheng*,

etc.), but said to be better known abroad than in China itself.

Akkordzither. See AUTO-HARP.

Ala bohémica (or 'Bohemian wing'). Some strange stringed instruments known only by medieval Czech pictures (Buchner 1957) were apparently in Latin writings named *ala*: a long soundbox, held high against the left shoulder, with a set of long strings and (usually) a set of shorter strings fanning out near the top, both hands plucking.

Albisifono. See ALTO AND BASS FLUTE, 2.

Alboka. See HORNPIPE.

Alghaita. See SURNA.

Algoza (or *alghoza*). A duct flute or flageolet of northern India, of wood, or of cane often painted in bands of colour, and with a recorder-like beak at the blowing end. Around 35 cm. (14") long, it typically has five holes, and a narrow 'window' giving a reedy sound easily overblown to higher notes. Characteristically the player (commonly a shepherd) plays on two at once, holding them separately one in each hand (leaving the lowest holes open) whereupon they will beat together with a bright, almost fiddle-like sound.

Alphorn. Properly the long wooden horn of Switzerland, but the name usefully serves to embrace similar traditional instruments made by other European herdsmen for directing their animals—from Scandinavia across to parts of Russia, Romania, and Czechoslovakia, and also formerly the Black Forest and Thuringia in Germany and the Vosges in France, with their own name in each region (e.g. Romania, *bucium*). The horn is made by sawing or splitting in half the trunk of a young fir or other suitable tree, carving out each half and reuniting them under an airtight binding of bark or roots to form a long tube. The shape of the bore varies from conical to almost cylindrical. Often in the Alps and Carpathians a tree is chosen which curves at the base of the trunk for the horn to curve upwards at the wider end (Pl. 1). In many regions the instrument is also built in the folded shape of a trumpet. The mouthpiece may be simply a cavity carved in the narrow end (see CORNETT, 4) or it may be made separately; the player's lips vibrate as they do with brass instruments. The length of the tube, from 4' to 16' (c. 120 cm. to 5 m.) or more, allows a good number of natural harmonics to be sounded in calls and tunes—up to the sixth harmonic with a short alphorn, or to the twelfth or higher with the 12' horn well known in Switzerland (i.e. with the same tube-length as an orchestral F horn).

Ex. 1.



The antiquity of the instrument is not known, but alphorns 11' long (some 335 cm.) are mentioned by a 16th-century Swiss writer, and one of its calls is met in Rhau's *Bicina Gallica* of 1545; see Ex. 1. Familiar later borrowings include (for more, see Hyatt King 1945): Beethoven, finale of Sixth Symphony (the *Kuhreigen* or *ranz des vaches*, 'cattle call', here given to the clarinet); Rossini, *Guillaume Tell* Overture (first phrase of the cor anglais solo, also from a Swiss *ranz des vaches*); Brahms, finale of First Symphony (the horn tune, with an F# representing the 11th harmonic); and Wagner, *Tristan und Isolde*, the second shepherd's call in Act 3, sometimes performed on the *tarogato, though for this call Wagner had a straight wooden instrument made (*Holztrumpete*) of which at least one opera house has preserved an example: a brass section in the middle carries a whole-tone piston valve, making the fast notes of the call somewhat easier for an orchestral brass player.



Pl. 1. Shepherds with alphorns. Romania.

In other parts of the world may be found long trumpets of wood or giant grasses, the largest in South America (*clarin, *erke, *trutruca).

Althorn. See ALTO HORN, also CLAVICOR.

Alto. In France the viola, or in brass bands the alto saxhorn (TENOR HORN). For other 'alto' members of an instrument family, see entries under the main name except those below.

Historically 'alto' and 'bass' both derive from 15th-century Latin *contratenor altus* ('high contratenor') and *contratenor bassus* ('low'), 'contratenor' itself having arisen to name a third part

added to the 'superius' and 'tenor' parts, similar in range to the tenor and intertwining with it. Four-part polyphony then brought the distinction between high and low contratenors which has led to 'alto', 'bass', and other abbreviated forms like Italian *contralto*, the former French *haute-contre* ('high contra'), while Eng. 'countertenor' has dropped 'altus'. In designating instruments, 'alto' began to enter British usage (from It. or Fr.) only during the 19th century, in place of 'tenor' which is still often retained where 'alto' is used elsewhere (e.g. *recorder, *tenor horn).

Alto and bass flute. 1. *Alto flute* (Fr.: *flûte contralto en sol*). See FLUTE, Pl. 1d. Built in G, a fourth below the flute, the lowest note, written *c'*, sounds *g* (in unison with the violin G string). Length, 87 cm. (34"); bore, from 24 to 26 mm., i.e. wider than the 19 mm. of the flute by close to the ratio 4:3 of the interval of a perfect fourth. Tone, unmistakable, full, languidly haunting in all registers. In regular manufacture, it is needed in three famous orchestral works of the years 1911-16: Ravel (*Daphnis and Chloé*), Stravinsky (*Rite of Spring*), and Holst (*The Planets*, here named 'Bass flute' after British practice at the time). The alto flute has since been important again in many of Britten's works for the stage, and in compositions by Boulez and Stockhausen, and is frequently scored for in music for television.

It was invented by Boehm, and in his later years became his 'favourite' instrument, mainly for its distinctive tone, suited to music in what he called 'song style' (Boehm 1871; see FLUTE). He transcribed for the alto flute, with piano accompaniments, slow movements from Mozart's and Beethoven's piano works, Schubert *Lieder*, and so on, creating the interest which first led makers in London and Paris to list the instrument in their catalogues.

2. *Bass flute.* An octave below the flute, with lowest note *c*. Useful for flute societies (playing music entirely for flutes). The 130-cm. (c.52") tube is made manageable by a bend in the upper part (as FLUTE, Pl. 1e), bringing the player's left hand some 50 cm. (20") nearer to the lips than were the tube wholly straight (latterly the ordinary Boehm flute has been available with similar 'bent head' to suit small beginners). For other bass flutes see FLUTE BAND.

Boehm built a bass flute; but better known and more often mentioned in instrument history is the design of a Milan player, who named it after himself 'Albisifono' (c.1910); also of metal with