



LAURENCE PICKEN
Playing the *qin* in Jesus College, 1969

Laurence Ernest Rowland Picken 1909–2007

IN JANUARY 2009, the University of Cambridge inaugurated its eight-hundredth anniversary celebrations with a spectacular light show, in which images depicting the university's finest achievements in science and the arts were projected in vibrant colours and at immense size onto the façade of its central buildings. Beside the scientific discoveries of Newton, Harvey, Darwin, Hawking and others were images reflecting some of the university's contributions to the arts and humanities, including music. As the Fitzwilliam Virginal Book scrolled soundlessly up the Senate House wall, a page from a sixteenth-century Japanese lute manuscript filled the façade of the Old Schools. This image, from a manuscript in the Laurence Picken collection of *gagaku* manuscripts in the University Library, was a fitting acknowledgement of the work of a Cambridge scholar who had contributed to both the sciences and the humanities, and had in particular pioneered a radical transformation in musical perspectives. It was his own centenary year.

Early years

Laurence Ernest Rowland Picken was born in Nottingham on 16 July 1909. His father, Ernest Frederick Picken, was a skilled sheet-metal worker and garage manager; his mother, Rosa Louisa Bevan, a teacher. Laurence attributed his musical interests to his mother's family, of Welsh origin and many of them musical: his aunt, Alice Matilda Bevan, taught him piano from the age of four. This was presumably the origin of his later life-long

passion for the music of J. S. Bach; he also played Mozart Piano Concertos and the Liszt Sonata. Similarly his later interest in Chinese and Japanese culture started at home, in his mother's renditions of songs from the *Mikado*, and in the current fashion for Chinoiserie, of which the family owned many samples owing to an uncle's naval service on the 'China station'.¹

Although music was not thought a suitable career for a boy, Laurence was evidently expected to pursue the humanities, until serendipity—on the first of many such occasions in his life—intervened. He and the biology teacher at his secondary school—Waverley Road School, Birmingham—travelled to school each morning on the same tram. The result was a fascination for biology that led, in 1928, to an Open Major Scholarship to Trinity College, Cambridge, in Natural Sciences, the first such scholarship ever won by a pupil of the school. He read Zoology, Chemistry and Botany for Part I of the Natural Sciences Tripos, and specialised in Zoology for Part II, obtaining a First in both parts and winning the Frank Smart Prize for Biology.

Picken was clearly poised for a brilliant career as a zoologist, but he had not neglected his other interests. The musician in him had found expression in college Musical Society concerts, and in his first term, on a visit to Heffers Bookshop, he had found and bought a Chinese grammar and a parallel text. By 1930 he was reading the *Shi Jing (Book of Songs)* in Chinese, but he had never heard Chinese spoken until he met a Chinese research student, Feng Depei (later Professor T. P. Feng, one of China's most eminent physiologists), who read to him from the *Shi Jing*. Picken asked if there were any books on music in Chinese, and Feng obtained

¹I have derived much information for this memoir from two extended published interviews. (1) *Half a Life: a Zoologist's Quest for Music. The Life and Work of Dr Laurence Picken*, Video film, 50 mins., colour, produced and presented by Dr Carole Pegg (Cambridge: Cambridge University Audio Visual Aids Unit and Museum of Archaeology and Anthropology); hereafter *Half a Life*. (2) Frank Kouwenhoven, 'An interview with Laurence Picken: bringing to life tunes of Ancient China', *CHIME* 4 (1991), 40–65; hereafter Kouwenhoven, *Interview*. I have also benefited from a number of memoirs published at the time of Picken's death, especially: (1) an address given by Professor Stephen Heath at a memorial service held in Jesus College Chapel on 9 June 2007, reprinted in the *Jesus College Annual Report* (2007), pp. 104–7, hereafter Heath, *Address*; (2) R. J. Skaer, 'Laurence Picken: Cambridge biologist who applied his enormous erudition to the study of Oriental music', *The Independent*, 31 March 2007, hereafter Skaer, 'Laurence Picken'; (3) Michael Good, 'Laurence Picken: scholar of catholic pursuits who was equally at home with invertebrate excretory systems and 8th-century Chinese music', *The Times*, 24 March 2007, p. 77 (unattributed), hereafter Good, 'Laurence Picken'. I also thank Dr Frances Willmoth for assistance in accessing papers in the Jesus College archive, and Professor Allan Maret, Mr Michael Good, Dr Carole Pegg, and Professor Stephen Heath for their comments on a draft of this memoir.

for him, from China, a copy of *Zhongyue xunyuanyuan*, which Picken found 'immensely valuable'. Evidently the musical character of the *Shi Jing* texts, and of the language itself, had impressed Picken from the start, before hearing a note of Chinese music; he returned to the *Shi Jing* in several of his later musicological writings, even though the original melodies of the songs do not survive.

The 1930s, however, offered little opportunity for Picken to further his interest in Chinese music. His main musical activity seems to have been composition: he wrote piano pieces that were forward-looking in idiom, and songs dedicated to his aunt, Alice Bevan; the discovery of Walt Whitman's poetry resulted in five Whitman songs composed in 1934.

Meanwhile he embarked on Ph.D. research in the Zoology Laboratory at Cambridge; the thesis, completed in 1935, on urine production in invertebrates, took him to the structures and chemical processes of life at the microscopic and molecular levels. Aquatic species provided valuable material for his research, and that same year he was awarded a grant 'towards the expenses of an expedition to investigate the freshwater ecology of the southwest Balkans'. He returned each Long Vacation until 1939 to Lake Ohrid in Yugoslavia, where he may have encountered local folk-music for the first time, as well as the freshwater *Ciliata*.²

Picken's scientific interest focused on the relationship between the properties of living materials and their molecular structure, and in particular the role of high polymers in this relationship. Although unsuccessful in obtaining a research fellowship at his Cambridge college, he was enabled by a Rockefeller Fellowship (1936–7) to work for two years at the École de Chimie, Geneva, with Professor Kurt Meyer, using state-of-the-art X-ray crystallography techniques to investigate the thermoelastic properties of living muscle, and of natural and synthetic long-chain polymers. A Francis Maitland Balfour Studentship at the Department of Zoology, Cambridge (1936; renewed 1939) supported further research on the structure and orientation of long-chain molecules as determinants of cell shapes. He travelled not only to Lake Ohrid but also to research stations in Ambleside and Hamburg, and to the Friesian Islands; he became fluent in the German language, and started to develop a theory of 'the fine structure of biological systems'.³ But political events, which he must have witnessed on a visit to Germany in 1939, were about to interrupt the

²Heath, *Address*.

³'The fine structure of biological systems', *Biological Reviews of the Cambridge Philosophical Society* 15 (1940), 133–67.

smooth course of his scientific career. The outbreak of war found him delayed by influenza at Lake Ohrid. He returned to Geneva in time to escape home to England on the last sealed train to Calais.

The war years 1939–1945

Back in Cambridge, Picken was put in charge of the Eastern Region Blood Transfusion Laboratory, entrusted with preparing filtered, sterile, human serum for transfusions for war casualties. The work was ‘not intellectually demanding’, although he improved its procedures; and it evidently left him with energy to pursue his zoological, musical and Sinological interests.

Despite the war conditions, his translation of Kurt Meyer’s *Der Aufbau der hochpolymeren organischen Naturstoffe*, a 700-page survey of a rapidly changing field, appeared in 1942 under the title *Natural and Synthetic High Polymers*.⁴ This publication—which had to be completely revised for the second edition in 1950, so rapidly did the subject develop during the 1940s—epitomised Picken’s overriding interest in structure, and his belief that biological structures were to be understood at the molecular level. The preface to the 1942 edition (signed by both Meyer and Picken) explains this view:

The common meeting-ground of chemists and biologists in high polymer chemistry is that of morphology. Since the day when, as a result of development of x-ray analysis, chemical formulas ceased to be symbols on paper and became models in three dimensions, the chemist has become more and more accustomed to think in terms of what may be called morphologic chemistry. To the biologist, who observes that both shapes and properties of cells and cell components reflect their molecular organization, it seems likely that morphologic chemistry may prove to be the chemistry of morphology. It is for him now to consider biological structure and organization in their high polymer guise and to formulate for himself the questions which high polymer chemistry will go far toward answering.

Picken’s work at the frontiers of chemistry and biology was ambitious: ‘He was before his time here,’ wrote a later collaborator, ‘and it is only in recent years that it has proved possible to achieve the insights he aimed at.’⁵ But with the biographer’s luxury of hindsight, it is possible to note

⁴Kurt H. Meyer, *Natural and Synthetic High Polymers: a Textbook and Reference Book for Chemists and Biologists*, trans. L. E. R. Picken (New York, 1942).

⁵Skaer, ‘Laurence Picken’.

here many of the hallmarks of Picken's later work in both science and musicology. There is the focus on the morphology, structure, properties and organisation of materials, and the interconnectedness of fine structure with large systems, that later characterised his organological and historical musicological work; the perception that phenomena in one scientific domain could be explained in terms of another, provided the scientist was prepared to cross disciplinary boundaries, as he himself did with such distinction; an appreciation of the implications of current developments for the future direction of research, and a willingness to venture predictions as to what might be discovered; the assumption that research is a discovery process arising from the pursuit of appropriately formulated questions susceptible of being answered; and a view of the purpose of scholarship on the grand scale as the synthesis of existing knowledge, as a service to the scientific community, and as a foundation for future research and discovery.⁶

This broad, cross-disciplinary vision of research would inform his later major works, but meanwhile expressed itself in smaller publications. In 1944 there appeared Picken's first contribution to musicology, entitled 'Bach quotations from the eighteenth century'.⁷ A survey of over one hundred printed books on music published in Germany in the eighteenth century had yielded twenty that contained quotations of the music of J. S. Bach, with or without attribution; but these had been overlooked by current, mostly German-language, Bach scholarship. Picken offers a service to musicological scholarship by meticulously indexing and identifying these quotations; but the intention is not merely to add in a minor way to the documentation of Bach's music, but also to draw the larger conclusion that the composer's works, even unpublished ones, must have been more widely known in the eighteenth century than was commonly supposed. As always with Picken, the focus on minutiae is at the service of broad questions.

The article is remarkable for the confidence and maturity of its musical scholarship: Picken later described himself as a 'reasonably well-trained biologist' but 'an *Autodidakt*' in musicology. His interest in Bach scholarship was fuelled by his habit of playing the keyboard works daily. Events in Germany in the 1930s had brought to British shores refugee German-Jewish booksellers from whom Picken had obtained many of the eighteenth-century volumes, by Mattheson, Kirnberger, Marpurg and

⁶ Many of the same ideas can be traced in his 1940 article 'Fine structure in biological systems'.

⁷ *Music Review*, v (1944), 83–95.

others, on which the article is based;⁸ and the article acknowledges a deep debt to an outstanding German–Jewish collector of eighteenth century musical documents, Paul Hirsch, who had escaped with his collection to Cambridge before the war, and made it available there to interested scholars.⁹

A second musicological article, published in 1950, which also acknowledges Hirsch's help, extended Picken's researches into the relationship between C. P. E. Bach's music and that of his father, and is a piece of detective work that rests not only on archival research but also, crucially, on a comprehensive knowledge of the music of J. S. Bach, and a keen aesthetic appreciation of its style and artistic qualities.¹⁰ The article originated as a lecture to the Royal Musical Association that was illustrated with performances at the keyboard by Picken himself. It was, however, to be his last publication in the field of Western art-music. The skills that he had developed in the analysis of musical documents were to be deployed in another direction.

That direction had begun to emerge in 1944, in a sequence of formative events that, in combination, marked a crucial turning point. Picken had revived his interest in China by attending the lectures of the Sinologist and linguist Gustav Haloun, another of the many refugees from Europe brought to Cambridge by the fortunes of war. This course went far beyond the elementary grammar that it was supposed to cover, with Haloun lecturing (to Picken and one other student) on epigraphy, classical Chinese, ancient phonetics, and national minorities and their languages; Picken later said that it was his first encounter with a great scholar of the humanities.¹¹ Picken's interest in China led unexpectedly to an invitation to join the British Council Scientific Mission to China, as Biological Assistant, under the leadership of another Cambridge scientist with China interests, Joseph Needham. This invitation in turn precipitated Picken's election to a Fellowship in Natural Sciences at Jesus College, Cambridge. Though he could not formally take it up until his return to Cambridge, he was inducted in time to arrive in China as a Fellow of the college. His sole previous encounter with that college had been to give a keyboard recital there, during which the Fellows had taken the opportunity of observing him.

⁸This collection was later presented to Cambridge University, and is held in the Pendlebury Library in the Faculty of Music.

⁹Information from Michael Loewe.

¹⁰'A fugue by "Bach"', *Proceedings of the Royal Musical Association*, 76 (1949–50), 47–57.

¹¹Kouwenhoven, *Interview*; Heath, *Address*. Picken also studied vernacular Chinese at SOAS in 1944.

Travelling to China in September 1944 was no easy matter: it involved a flight from Calcutta to Kunming, where he was met by Needham and his wife, and a hazardous road journey to Chongqing, in the course of which their RAF lorry, driven by Needham, fell into a ditch and had to be abandoned overnight. Picken's role in Chongqing was that of general biologist, visiting institutions and giving talks on such subjects as 'twinning in domestic animals'. Picken later recalled his admiration for the Chinese scientists who, having fled the Japanese forces over immense distances, had set up makeshift laboratories and equipment with great resourcefulness, even converting windowpanes, broken by air raids, into microscope slides. He also appreciated the warm collegiality among Chinese and British staff of the Mission.¹² He was less impressed by Needham's style of leadership. As a recent biography of Needham has revealed,¹³ Picken's letter to a friend in the British Council, expressing distaste at Needham's high-handed and nepotistic behaviour, was intercepted by Needham and caused a serious rift. But this was to heal, a decade later, when Picken wrote a generous review of the first volume of Needham's *Science and Civilization in China* (Cambridge, 1954) and advised on the music section of a subsequent volume. Picken frequently corresponded with Needham thereafter, and Needham later praised his contribution to the Scientific Mission: 'He was a great success . . . one of the best of our group.'¹⁴

Picken lost no time in immersing himself in the local musical culture. On his first evening he and the Needhams attended a concert arranged by the Dutch Sinologist Robert van Gulik, which may have been the first opportunity he had had to hear Chinese music at first hand. He was especially captivated by the music of the long zither *qin*, with its resonant tone and subtle ornamentations. This response was to lead to many encounters. The next day Needham accompanied him to a bookshop in which he found and purchased a *qin* manual, *Qinxue Rumen* (1864). An instrument was made for him, and he began to take lessons, practising every day. The *qin* repertoire gradually unfolded to him, as Bach's '48' had done earlier, and gave him equal satisfaction: 'Playing [*qin*] improved my sense of pitch and extended greatly my conception of music—of sound, form and structure'¹⁵ (note the emphasis on morphology, in music as in zoology). He took weekly *qin* lessons throughout 1945, became the first non-Chinese

¹² Kouwenhoven, *Interview*.

¹³ Simon Winchester, *Bomb, Book and Compass: Joseph Needham and the Great Secrets of China* (London, 2008), pp. 166–8.

¹⁴ A short interview with Needham is included in *Half a Life*.

¹⁵ Kouwenhoven, *Interview*.

member of the Chongqing *qin* society, and, with Van Gulik's help, visited a famous *qin* scholar Pei Tiexia, to hear him play on two, thousand-year-old instruments: 'At times I wish I had been able to stay with him, as his pupil, but I had to go back to Cambridge.'¹⁶ This was a decade before Mantle Hood advocated learning to perform as a research method in ethnomusicology. Later he would tell of playing *qin* in mountain-top temples, of playing gramophone records of Western music to his Chinese hosts, and of being presented with a gift of two Tang-dynasty ocarinas by a private collector he had not previously met.¹⁷ The transformation from zoologist to musicologist would take a further two decades, but these vivid experiences must have set him irrevocably on that road.

Return to Cambridge

Picken returned to Cambridge in 1945 to take up his college Fellowship and, the following year, the post of Assistant Director of Research in the Faculty of Zoology. From this point onwards he remained in Cambridge, living in rooms in Jesus College until his retirement thirty years later, with no more than short visits abroad to collect musical materials or lecture. He threw himself into college life, directing studies in biology and acting as personal tutor to many undergraduates. Those who were musical found themselves encouraged to take part in the college Musical Society concerts, operas and mystery plays which he organised, or invited to play two-piano duets with him. His dinner parties, for which he cooked himself, were legendary for their combination of gourmet food, fine wine, live music performed by himself or his students, and genial, learned conversation about almost any topic.

Picken developed many friendships in Cambridge in this period of his life. Two who were particularly influential on his musical career were the composer Roberto Gerhard and the musicologist Thurston Dart. Gerhard was another refugee from strife-torn Europe who had arrived in Cambridge in 1940. While Picken as a composer had never embraced the atonality and serialism that Gerhard had learned from his teacher Schoenberg, what drew them together was Gerhard's interest in folk music, especially but not exclusively that of his native Catalonia. Picken, in a warm tribute to the composer, confessed to having 'experimented' on his friend by play-

¹⁶ Kouwenhoven, *Interview*.

¹⁷ See *Ibid.*; *Half a Life*

ing to him recordings of music from all over the world, to see how he would respond as a composer with a vivid sonic imagination but no background in ethnomusicology; and he concluded that such a person could empathise deeply with the sounds of music without knowing anything about the social context of their production.¹⁸ The ostinato-coda of *Libra*, one of Gerhard's best-known works, of which it has been written that it 'seems to symbolize a universal folklore, the essential contact with the earth and land that nourishes the creative imagination',¹⁹ was inspired by a recording of an Amerindian ritual that Picken had played to him on one of their many musical evenings together.²⁰

Thurston Dart arrived in Cambridge as a lecturer in music in 1952 and was appointed Fellow of Jesus College in 1953. He and Picken had much in common. They were both harpsichordists. They both collected musical instruments. They both used historical documents as sources of previously unknown music and new insights into musical performance. Their friendship was close, and when Dart was appointed Professor of Music at Cambridge in 1962 it must have seemed that a way had opened for Picken's contributions to musicology to be recognised in the Music Faculty. But Dart's tenure of the Chair was brief, and the friendship was ruptured for a time, though it was restored before Dart's death in 1971. Picken would later publish one of his most important articles on Tang music in a memorial volume for Dart, whose encouragement is warmly acknowledged.²¹

The zoologist, 1945–1966

The zoological and musical strands of Picken's work continued in parallel, and it may be convenient from this point to consider them separately, since they seem to occupy almost independent compartments of his life. Picken's duties as Assistant Director of Research in the Zoology Laboratory at Cambridge included both research and teaching. He was responsible for development of new courses in zoology, including a course in the biology of cells (1965), and an intensive training course in microscopy for first year

¹⁸L. E. R. Picken, 'Roberto Gerhard intermittently observed', *The Score and I.M.A. magazine* (Sept. 1956), 50–3.

¹⁹Malcolm MacDonald, 'Gerhard, Roberto', in *The New Grove Dictionary of Music and Musicians* 2nd edn., ed. S. Sadie and J. Tyrrell (London, 2001), pp. 691–7.

²⁰This was told to me by Dr Picken himself.

²¹'Tang music' and its fate in Japan', in I. Bent (ed.), *Source Materials and the Interpretation of Music: a Memorial Volume to Thurston Dart* (London, 1981), pp. 191–206.

undergraduates. Research students coming to him for supervision could be confident that 'he would not hand out topics on which it would be rewarding to work, or on which he wanted to find out the answer for his own career', but would encourage the students to spend time on research training, whether in Cambridge or at research institutes elsewhere, before identifying a thesis topic of their own choice.²²

Picken's zoological research over the next twenty years continued to focus on fine structure of living materials, but he seems to have drawn back from the molecular to the cellular level, using the new technology of electron microscopy to produce definitive analyses of complex cellular structures. This work culminated in a series of studies with R. J. Skaer on the stinging cells of anemones, hydra and similar creatures, still considered classic. 'Although nematocysts, like horns and feathers, are merely the inanimate secretions of living cells,' a recent commentator writes, 'the complexity and ingenuity of their design, upon which their functioning depends, astonish. The best and most detailed analysis of how their architecture develops has been given in a series of penetrating studies on siphonophores by Picken and Skaer.'²³ Note that the dependence of function on structure is here acknowledged.

Alongside this groundbreaking research, Picken embarked on a survey of the whole field of cytology, the study of cells; a survey that would benefit the scientific community in the same way as Meyer's magnum opus on polymers, and that would include not only a summary of everything that had been achieved in the field so far, but also predictions as to what further developments might be expected. Many of these predictions, which he often made in the course of teaching, became fact within a short time; others, such as his prediction that beneficial viruses would be discovered, have been confirmed more recently.²⁴ *The Organization of Cells and Other Organisms* (Oxford, 1960) was originally too long for the publishers and had to be completely rewritten in a substantially reduced form; it still occupied 600 pages when eventually published in 1960. Unfortunately by then much of its originality and insight had become blunted by the rapid development of the field, and especially by that of genetics. The book was hailed as a 'classic work', but was also criticised (by the same reviewer) for

²² Skaer, 'Laurence Picken'.

²³ G. Kass-Simon and A. A. Scappaticci, Jr., 'The behavioral and developmental physiology of nematocysts', *Canadian Journal of Zoology*, 80 (2002), 1772-94.

²⁴ Skaer, 'Laurence Picken'.

emphasising structure above function.²⁵ But structure was Picken's forte: for him, the behaviour of material was a product of its fine structure.

Picken's work in zoology brought national and international recognition with the award of the Sc.D. in 1952, Fellowship of the Institute of Biology, a Walker-Ames Visiting Professorship at the University of Washington in 1959, and the Linnean Society's Trail Medal in 1960. *The Organization of Cells and Other Organisms* was the crowning achievement of a long and distinguished career in the natural sciences. If its gestation was difficult, its reception not overwhelmingly positive, and the field rapidly moving in new directions, the opportunity of making a decisive turn towards music must have been tempting indeed.

The musicologist, 1945–1966

Alongside the zoological research and teaching, Picken developed a parallel career as a musicologist, issuing a series of studies on Chinese and other musics that were quite as original and, for their time, definitive, as his scientific publications. Here however he was working in a field very much less highly developed as an academic discipline, especially in the UK, than zoology. Picken was born half a century before the term ethnomusicology first began to be used (he never liked it). Even musicology, in the sense of historical, text- and practice-based research, was a new concept in British universities of the 1940s. The work of Dart and others raised the profile of musicology in the 1950s and 1960s, but it would be many years before the music of the world beyond Europe and the Americas would gain a secure foothold in the British academy.²⁶ Picken based his techniques, approaches and thinking on the music folklore of Bartok and the Hungarian school, the organology of Sachs and Hornbostel, and the historical, philological and textual traditions of Oriental Studies, as the best models then available. For the UK, he was a radical pioneer. The development of anthropological ethnomusicology in the United States during the 1950s was to prove more influential in the long run, however, and by the end of his life, Picken appeared to be the respected stalwart of a bygone

²⁵Michael Swann, *Quarterly Journal of Experimental Physiology and Cognate Medical Sciences*, 46 (1961), 284.

²⁶Research and teaching in Indian music (A. A. Bake) and African music (A. M. Jones) had become established in London at the School of Oriental and African Studies (SOAS), but was accommodated in language departments and Area Studies programmes, as there was no Music Department there until 1997.

age. This was to underestimate, however, the continuing, undiminished originality and vitality of his work in his later years.

Following his return from China in 1945 and the Communist take-over there, Picken realised that there would be little or no opportunity for him to work there again. He saw two solutions to this problem, both of which he pursued energetically over the next two decades. One was to analyse written documents for the history of Chinese music available in the West, especially sources of notated music. The other was to study the music of regions of Asia adjacent to, or historically connected with, China. These included Southeast Asia, Japan, and Korea; but what particularly excited his interest was the history of musical interchange with Central Asia, a process that had been especially important during the Tang dynasty. Political factors again limited direct access to this region, but no such obstacle prevented him from visiting Turkey, which he saw as the Western extension of the culture-contact zone with China, and a meeting-point between European and Asian musical cultures. Particularly important to him was the part played by folk musical instruments in what he came to see as a single historical continuum, stretching from Europe in the West to China, Korea and Japan in the East; and here his zoological expertise gave him an unequalled insight into the engagement between craftsmen, musicians and natural materials—wood, reed, metal, skin, gut, bone, hair—that resulted in the development of musical instruments and their distribution across the Eurasian landmass.

Folk music and musical instruments

An invitation from a Turkish scientist friend resulted in Picken's first visit to Istanbul in 1951. Interested in modal conceptions of melody, and perhaps to continue on an instrument of the zither class the performance study he had begun on the *qin*, he took lessons in Turkish classical music on the *kanun* and *bağlama*. But when he accompanied his friend on a visit to Trabzon, he heard music of a kind very different from anything to be found in the metropolis of Istanbul: the wildly exhilarating dance music of the Black Sea fiddle (*kemençe*). The astonishing speed and energy of the bowing, and the apparently *sui generis* polyphony—unlike the refined monody of the *qin* and *kanun*, but also unlike Western harmony—persuaded Picken to lay his *kanun* aside and to return, the following year, to the Black Sea coast, with a clockwork-driven tape-recorder, in search of the unique folk music of that region and its characteristic instruments. Travelling second class on the ship from Istanbul, he observed his first

Black Sea fiddler playing on the deck below, and did not hesitate to join the party in third class.²⁷

The study of Turkish folk musical instruments was to occupy Picken for the next twenty years. In successive Long Vacations, until 1966, he travelled, alone and at his own expense, the length and breadth of the country, collecting, photographing and recording instruments in almost every region, and interviewing musicians, instrument makers, schoolmasters, farmers, street vendors, children. The latter were especially important informants to Picken, because he found that many sound-producing devices, some of which might once have been adult ritual instruments, existed only as toys. The names of the instruments, in their local dialect forms, were collected as evidence for their history and cultural meanings; and of course the natural materials used, and the techniques employed in manufacturing instruments from such materials, were of vital interest. Social data were also collected in statistical form for each region, for example on the numbers and social identity of players of particular instruments or the social contexts in which they could be played, but not to the exclusion of other categories of information. All these field data were meticulously checked *in situ*, on successive visits, with Turkish scholars and in Turkish-language folklore publications.

Apart from a short article on 'Instrumental polyphonic folk music in Asia Minor',²⁸ none of the Turkish folk instrument research appeared in print at this time: it was being saved for a single, monumental work. In 1960 Picken received an invitation to write a volume on Turkey for the series *Handbuch der europäischen Volksmusikinstrumente*, edited by Erich Stockmann and Ernst Emsheimer. This he accepted, but the work quickly grew beyond the bounds of the series, and eventually had to be published separately, by Oxford University Press. Like *The Organization of Cells* and Meyer's *Natural and Synthetic High Polymers*, *The Folk Musical Instruments of Turkey* (London, 1975) is a vast and systematic compendium of information, gathered from literature as well as from personal investigation, intended as an instructive reference source for the benefit of the scholarly community; it is explicitly addressed, in part, to those in Turkey who Picken hoped might be able to conserve and document their music in future, before many of their rural traditions disappeared. The whole volume is organised in accordance with the Sachs–Hornbostel classification system for musical instruments, and the information on each instrument

²⁷ Kouwenhoven, *Interview*.

²⁸ *Proceedings of the Royal Musical Association*, 80 (1953–4), 73–86.

is presented in a format developed by Stockmann and Emsheimer, covering Terminology, Ergology and Technology, Playing-technique and Musical Possibilities, Repertory, Use, and History and Distribution. Photographs (including X-radiographs to show the interior structure of fiddles and wind instruments), line drawings based on field sketches, and detailed descriptive notations based on his own recordings and those of other scholars, add to the wealth of meticulous documentation, so that the description of a single instrument can occupy many pages (eighty-six in the case of the long-necked lute *saz*). Not content with describing a single example of each instrument type, Picken compares examples from every region in which it occurs, showing the range of variability. The zoologist's concern with morphology, structure, properties, organisation and evolution of natural materials is here extended to the study of musical instruments in all their quasi-organic complexity.

As with the zoological work, the analysis of fine structure is not pursued entirely for its own sake, but is harnessed for the elaboration of overarching hypotheses. The book ends with a Postscript that places Turkish instruments in a cross-continental, historical perspective, in relation to the history of musical systems and other cultural phenomena across Eurasia, on a breathtaking timescale from ancient Mesopotamia to the present. It is in this context that connections are drawn, among others, between Turkey and China. Underlying this broad vision are the concepts of evolution and diffusion: both key concepts, of course, to a biological scientist, though by 1975 considered outmoded by most ethnomusicologists. The Postscript also includes a defence of the Sachs–Hornbostel classification, which Picken regarded as scientific and hence superior to other instrument classification systems.

Like *The Organization of Cells*, *The Folk Musical Instruments of Turkey* had a mixed reception. Organologists and Turkish music specialists were ecstatic. Jeremy Montagu wrote in the journal *Early Music*:²⁹

It towers head and shoulders above all other books on the subject [of musical instruments] in its clarity, in its detailed coverage and in its complete mastery over the technical details of the acoustical behaviour of the instruments, of their use, their distribution and their construction. Anyone working on any aspect of musical instruments of any sort, from any area and from any period, will benefit from reading this book . . . It will become a classic . . . for it is the best book on musical instruments that has ever been written.

²⁹ Vol. 3 (Oct., 1975), 399–401.

Kurt Reinhardt concurred—‘die beste monographische Darstellung des Musikinstrumentariums eines regional begrenzten Gebietes’³⁰—and in France, Gilbert Rouget described it as ‘parmi les plus grandes oeuvres qu’on doive à l’ethnomusicologie’.³¹ Although the structural descriptions of individual instruments excited much admiration, Wolf Dietrich also perceptively highlighted the social implications of Picken’s data on local variation in instrumental structure and (consequently) sonority, which leads to music being locally accepted (or not) as ‘our music’; and of his work on children’s music for the study, otherwise almost impossible for male outsiders, of women’s music in Islamic societies.³²

Some ethnomusicologists were less enthusiastic, however. No review appeared in the journals *Ethnomusicology* or *Asian Music*. In a full-page review in the *Times Literary Supplement*, John Blacking, who as Professor of Anthropology had recently established an academic programme in ethnomusicology at Queen’s University in Belfast, criticised the book’s lack of social orientation, which had become standard in North American ethnomusicology, and had been introduced to the UK by himself. This was a development that Picken had largely ignored. He said later: ‘As a zoologist I am interested in structure. As a musicologist I retain that interest. It is the fundamental reason why I never wanted to call myself an *ethnomusicologist*, because I feel that ethnomusicologists show too little interest in the structure of music itself.’³³ To the detriment of ethnomusicology in the UK, neither Blacking nor Picken appreciated the strengths of the other’s approach. Picken blamed the Blacking review for the fact that he was not promoted to Reader before his retirement in 1976, and although Blacking wished to make amends later, Picken declined to meet him, or to take part in the formation of the European Seminar in Ethnomusicology which Blacking founded in the 1980s.

Individual short studies of organological problems continued to appear in the 1970s and 1980s, especially in the ‘occasional periodical’ *Musica Asiatica*, which he founded and edited from 1977 as a vehicle for his own and his students’ research. But he did not return to Turkey or Turkish instruments. Once the book had been published, he devoted most of his remaining energies to the musical history of East Asia.

³⁰‘Review of *The Folk Musical Instruments of Turkey*’, in *Yearbook of the International Folk Music Council*, 8 (1976), 139–41

³¹‘Review of *The Folk Musical Instruments of Turkey*’, in *Revue de Musicology*, 68 (1982), 415–19.

³²‘Review of *The Folk Musical Instruments of Turkey*’, in *The Galpin Society Journal*, 29 (May, 1976), 136–8.

³³Kouwenhoven, *Interview*.

Chinese music

In 1945, in Xizhu, Kunming Province, Picken met the eminent Chinese musicologist Yin Falu. Yin made for him a list of all the then known early Chinese sources containing notated music, and gave him a copy of selected items from the earliest of these sources, a famous tenth-century lute manuscript from Dunhuang. With the exception of the latter, all the sources listed were printed books dating from the twelfth century (Song Dynasty) onwards, though some of their contents may be of pre-twelfth-century origin.

Back in Cambridge, Picken set about systematically analysing these sources. The notation of the Dunhuang manuscript posed problems insoluble at the time,³⁴ but in due course meticulous studies appeared in print of the twelve ritual melodies recorded by the twelfth-century philosopher Chu Hsi (1956),³⁵ believed to be of Tang date, and of the songs of the twelfth-century poet Chiang K'uei (1957, 1966, 1971).³⁶ These studies are among his most important contributions to musicology, and yet remain comparatively little known outside Sinological circles, perhaps because they were published in a variety of different musical and Oriental studies publications and have never been easily accessible (a collected edition of Picken's musical writings is long overdue). The earlier work on Bach sources had clearly been a training-ground for these publications, where the main emphasis is on the recovery of music—in the sense of specific melodic compositions—from written documents. The textual history of the Chinese sources and their variant readings, the cultural and political background, the meanings of the song-texts, the systems of notation, and the modal and rhythmic structure of the music are all authoritatively described and analysed, with reference to a host of primary and secondary

³⁴Picken returned to this source in later publications: 'Preface' and 'Letter to Professor Jao Tsung-I', in Rao Zongyi (ed.), *Xianggang Dunhuang Tulufan yanjiu zhongxin: Dunhuang pipapu lunwenji* (Hong Kong, 1991); and, with Noël Nickson and Marnix Wells, "'West River Moon": a song-melody predicted by a lute-piece in *Piba* tablature', *CHIME*, 10–11 (Spring–Autumn 1997), 172–85.

³⁵'Twelve Ritual Melodies of the T'ang Dynasty', in B. Rajeczky and L. Vargyas (eds.), *Studia memoriae Belae Bartók sacra* (Budapest, 1956), pp. 147–173. In this memoir I have not attempted to reconcile the three different systems of romanisation of Chinese that Picken used at different periods.

³⁶'Chiang K'uei's *Nine Songs of Yüeh*', *Musical Quarterly*, 43 (1957), 201–19. 'Secular Chinese Songs of the Twelfth Century', *Studia musicologica Academiae scientiarum hungaricae*, 8 (1966), 125–71. 'A twelfth-century secular Chinese song in zither tablature', *Asia Major*, 16 (1971), 102–20. See also 'Music and musical sources of the Song dynasty', *Journal of the American Oriental Society*, 89:3 (July–Sept. 1969), 600–21.

sources, and comparatively to other Chinese, Asian, or European music. The figure of Chiang K'uei emerges vividly from these studies as one of the world's earliest poet-composers whose music survives.

In only one respect could these studies of Song-Dynasty music be regarded as in any way controversial, and that is the interpretation of rhythm and metre: Picken hypothesised that Tang and Song poetry fits within a musical matrix of eight equal beats, within which different numbers of syllables can be accommodated by lengthening syllables or subdividing beats. This was confirmed, not only by the evidence of song-tunes from the Tang dynasty preserved in Japanese manuscripts but also by his pupil Jonathan Condit's reconstruction of two Song-dynasty Chinese songs from Korean sources, which were found to have precisely the metrical structure that Picken had predicted.³⁷

Part of the authority of these studies of Song-Dynasty Chinese sources stems from Picken's inexhaustible knowledge, probably unparalleled at that time, of Chinese music in general, of all periods, and its relationship with the music of surrounding regions of East and Southeast Asia. This expertise was expressed in the first volume of the *New Oxford History of Music*, for which he wrote two chapters, respectively on Chinese music, and the musics of other regions of East and Southeast Asia.³⁸ His outline, in the former chapter, of Chinese musical history anticipates many of the themes of his own later studies, and was later reprinted as a classic of ethnomusicology.³⁹ These survey chapters clearly reflect Picken's pre-occupations with large historical and geographical perspectives, musical structures, documentary sources, and musical instruments. They would be criticised today for saying little about music as a social phenomenon, produced and consumed by societies and individuals, which under the influence of Merriam and Blacking became the central concern of ethnomusicology later in the twentieth century. They were indeed based largely on written documents by other observers, and recordings available commercially or in archives, since apart from his time in China in 1944–5 Picken had not himself visited the region, let alone undertaken in each area the extended participant observation that became standard practice

³⁷ Jonathan Condit, 'Two Song-dynasty Chinese tunes preserved in Korea', in D. R. Widdess and R. F. Wolpert (eds.), *Music and Tradition: Essays on Asian and other Musics Presented to Laurence Picken* (Cambridge, 1981), pp. 1–39. See especially pp. 16–17.

³⁸ 'The music of Far Eastern Asia: 1. China' and '2. Other countries', in E. Wellesz (ed.), *New Oxford History of Music, I. Ancient and Oriental Music* (London, 1957), pp. 83–194.

³⁹ 'Chinese music', in D. P. McAllester (ed.), *Readings in Ethnomusicology* (New York, 1971), pp. 336 ff.

in ethnomusicology. These surveys reflect the limitations of their time and place, but also transcend them, because of Picken's ability to see the significance of individual details in relation to a complex whole, and the underlying patterns implied by a mass of data: an ability honed by three decades of zoological research. In a postscript to the second *New Oxford History* chapter, he outlines a panoramic vision of historical relationships between East, Southeast and South Asian musical cultures, which contains important insights such as the close relationship between free-reed instruments and jews-harps. As the focus of ethnomusicology narrowed to synchronic, locally and nationally based field studies, such panoramic and diachronic perspectives, however authoritative, would fall out of favour.

The Tang Music Project

When Picken undertook his detailed survey of the earliest notated sources of Chinese music, he was 'always haunted by the possibility of specifically Tang survivals'.⁴⁰ The Tang Dynasty (AD 618–907) represented a high point in the historical development of music in China, due in part to the proliferation of secular court banqueting music—including instrumental, dance and vocal music—as well as Confucian ritual music, and in part to the patronage, by élite Tang society, of musicians and dancers from tributary states in Central Asia, and even from as far away as India and Southeast Asia, together with their instruments and musical repertoires. A repertoire of Tang music would thus be the oldest surviving entertainment music in the world, and would tell us something about the musics of regions outside China as well as China itself in the seventh to ninth centuries.

Despite colourful descriptions of the performance of this music in contemporary sources, however, records of the music itself proved initially elusive, for the succeeding Song Dynasty had swept away what it saw as a decadent court culture. The ritual melodies of Chu Hsi, and one instrumental melody preserved by Chiang K'uei, were possibly of Tang origin, but survived only in Song sources; and it was not so much the ritual as the secular music that Picken searched for. Only the obstinately untranscribable Dunhuang lute manuscript held a repertoire possibly of Tang date, and that was late and from a peripheral region.

⁴⁰ *Music from the Tang Court*, 1 (London, 1981), p. 5.

It is not clear when Picken first became aware that part of the Japanese court music and dance repertoire is called ‘Tang music’ (*Tōgaku*), and according to tradition was imported to Japan from China during the Tang Dynasty. The instruments used in Japan are indeed derived from some of those played at the Tang court, and written records survive of Japanese ambassadors to the Tang court returning to Japan with instruments, having learned to play them, and musical scores. Names of *Tōgaku* pieces and their modes replicate names found in Tang documents. But Picken realised that this music, as it is performed in Japan today, is radically different in sound (whether to Chinese or foreign listeners) from any music known in China. The predominantly slow tempo of the music and of the dance movements contrasts markedly with Tang descriptions of dancers ‘whirling like the wind’. Another difficulty was posed by the cluster chords played on the *shō* mouth-organ, one of the most striking elements in the sound-world of contemporary *Tōgaku* performance: Chinese mouth-organs (*sheng*) play a melody, decorated only with parallel fifths, not cluster chords. Furthermore the Japanese call this music *gagaku*, ‘Refined Music’, the name of Chinese ritual rather than secular music. It seemed unlikely that this tradition in its present form could in any way represent the entertainment music of Tang China.⁴¹

In 1953, however, Picken saw for the first time a single photograph of *Tōgaku* notation for the mouth-organ (*shō*) and lute (*biwa*).⁴² He was immediately struck by resemblances between these notations and the Chinese notations of Song date on which he was working. He realised that if read in the same way as the Chinese notations, especially if understood as representing a much faster tempo than that of modern Japanese performance, they yielded a melody: a melody inaudible in modern performance, and one that was markedly more ‘Chinese’ in structure and style than modern performance would suggest. The mouth-organ notation did not represent the sequence of cluster-chords played on the modern *shō*, but a sequence of single pitches, a melody to which one could easily add parallel fifths in Chinese style. Provided one could forget the sounds of modern Japanese performance, one could readily imagine such a melody, sounding partly Chinese but with a tinge of Central Asian exoticism, accompanying lively dancing after a banquet at the Tang court. Picken

⁴¹‘Central Asian tunes in the Gagaku tradition’, in L. Finschler and C.-H. Mahling (eds.), *Festschrift für Walter Wiora* (Kassel, 1967), pp. 545–51.

⁴²Reproduced in Eta Harich-Schneider, ‘The present condition of Japanese court music’, *The Musical Quarterly*, 39 (1953), 49–74.

conceived the possibility that while the performance practice of Tōgaku has changed beyond recognition over the last thousand years—partly in response to the redefinition of the music as ritual music after its importation to Japan—‘the manuscript *scores* of Japanese Tōgaku might well have preserved for later generations an anthology of music borrowed from the Tang Court’.⁴³ He sought and found encouragement for this idea from the then leading UK expert on historical performance practice in the West, his friend and colleague Thurston Dart.

Such a radical insight, which had not previously occurred to any Japanese, Chinese or Western musicologist, was based on a single page of manuscript notation, and was partly in the nature of an aesthetic response; it is the kind of spontaneous insight that Picken regarded as a normal part of scientific enquiry. But for confirmation it required the most extensive and rigorous scrutiny possible of the primary sources. At first, lack of access to Tōgaku manuscripts prevented more than the occasional item being transcribed, such as the famous tune ‘Waves of Kokonor’ (*Seigaiha*), which seems to have been known to both Prince Genji and the Tang poet Li Bo, and which Picken transcribed for his friend Arthur Waley, translator of Tang poetry. But in 1966 a colleague, Eric Ceadel, brought back to Cambridge from Japan modern printed scores of Tōgaku for several instruments, from which Picken transcribed fifty items. In the same year the German Sinologist Martin Gimm brought out a classic study of Tang sources, documenting the music and musical instruments played at court, and providing a secure foundation for further research in this field.⁴⁴ The way was open for a serious study of the ‘Picken hypothesis’. It was to become his crowning musicological achievement.

For such a major project, however, Picken needed time for the necessary research, access to manuscript materials, additional manpower for their study, and funding. Over a decade earlier, Joseph Needham, when embarking on a similarly ambitious project (his *Science and Civilization in China*), had been released from his duties as a research scientist in biochemistry. In Picken’s case the solution adopted, by the retiring Professor of Zoology, Carl Pantin, was to transfer his post to a different Faculty. Initially the plan was to move him to the Music Faculty. But Picken’s advocate there, Thurston Dart, had left for King’s College London, and

⁴³ *Music from the Tang Court*, 1, p. 6.

⁴⁴ *Das Yuēh-fu tsa-lu des Tuan An-chieh: Studien zur Geschichte von Musik, Schaspiel und Tanz in der T’ang-Dynastie* (Wiesbaden, 1966). See Picken’s review article, ‘T’ang music and musical instruments’, *T’oung Pao*, 55:1–3 (1969), 74–122.

his successor as Professor of Music at Cambridge, Robin Orr, had no interest in Asian music or ethnomusicology. So the post was diverted to the Faculty of Oriental Studies, where Picken became Assistant Director of Research in Oriental Music.⁴⁵ At the age of 57, his career as a zoologist came to an end. His career as a musicologist had another three productive decades to run. Apart from his organological work, most of this time would be devoted to the Tang Music Project, which is the aspect of his work for which he is most widely known today.

Access to manuscripts began shortly afterwards. In 1969, with the help of a loan from Jesus College, Picken was able to purchase a collection of sixty-two *gagaku* manuscripts dating from the sixteenth to the nineteenth centuries.⁴⁶ But older manuscripts existed in libraries in Japan. In 1972 Picken visited Japan in the course of an extended research tour taking in Central Asia, Afghanistan, Southeast Asia (Burma, Thailand, Taiwan, the Philippines) and Korea. The purpose of these visits was largely to follow up ideas that had developed in the course of his organological work: articles on stripped-bark whistles (a children's toy in many cultures), Afghan quail-lures, the manufacture of Thai free-reed mouth-organs, and a Thai village instrumentarium subsequently appeared. But for three months in Japan, the focus was Tōgaku manuscripts. With the help of Professor Kazuo Fukushima and other Japanese scholars, Picken learned how to date Japanese manuscripts, established that a continuous manuscript tradition for Tōgaku existed in Japanese libraries from the end of the Tang period to the nineteenth century, and acquired copies of the earliest surviving scores.⁴⁷ Among these was a magnificent facsimile of a vitally important tenth-century lute manuscript, *Fushiminomiya-bon Biwa-fu*, which provides testimony to the direct transmission of music, both oral and written, from Tang China to Japan. This facsimile was a gift to the Cambridge University Library from the Grand Steward of the Imperial Household.⁴⁸

As the project gained momentum, funding and manpower began to appear. Thanks to the advocacy of Professor Arthur Wright of Yale University, sponsorship was obtained from the American Council of

⁴⁵This sequence of events was related to me by Dr Picken himself.

⁴⁶Now in the Cambridge University Library.

⁴⁷*Music from the Tang court*, 1, p. 8; Kouwenhoven, *Interview*.

⁴⁸Cambridge University Library catalogue number FH.990 32. See R. F. Wolpert, 'A ninth-century Sino-Japanese lute-tutor', *Musica Asiatica*, I (1977), 111–65; Allan Marett, 'Research on early notations for the history of Tōgaku and points of scholarly contention in their interpretation', *Yearbook for Traditional Music*, 38 (2006), 79–95.

Learned Societies and the Andrew W. Mellon Foundation. Doctoral students arrived to work on the earliest manuscripts for different instruments of the Tōgaku ensemble (since each instrument has a different system of tablature notation): initially Rembrandt Wolpert on those for lute, Allan Marett for flute, and Jonathan Condit for *koto*. As Picken had predicted, the manuscripts revealed a repertoire of melodies, the same for each instrument, and the same as those that he had transcribed from later scores—but with less ornamentation, a fact attributed to the subsequent slowing-down of tempo in performance. In addition, Condit's work on fifteenth-century and later Korean sources revealed processes of retardation and expansion strikingly analagous to those proposed by Picken for Tōgaku; and later another pupil, Elizabeth Markham, found similar evidence in the *Saibara* repertoire of Japanese classical song. This repertoire, present in the manuscripts collected by Picken, is stated in early sources to share many of the melodies of Tōgaku. This relationship is imperceptible in modern performance, but Markham showed that it emerges clearly if the notations are read according to Picken's hypothesis.⁴⁹ Such conclusions were tested out by the group in regular playing sessions at which the Tang melodies were rendered on a variety of instruments. On one such occasion in 1977, to celebrate Picken's birthday, the group recreated a complete concert programme of thirty items, originally performed in Ōsaka on a day in AD 1147. The 1977 performance, in the gardens of Lucy Cavendish College, occupied an afternoon; at present-day performance speeds in Japan, it would have taken at least 48 hours.⁵⁰

Reaching retirement age in 1976, Picken moved out of the college rooms he had occupied for thirty years, but took up residence only a few yards away in a small house in Lower Park Street. He donated his collection of some 2,000 musicological books, periodicals and microfilms, and the *gagaku* manuscripts, to the Cambridge University Library, where they now form the 'Class Picken', and his early Bach editions to the Pendlebury Library in the Faculty of Music. His collection of some 700 musical instruments, from all regions of Asia, which for years had graced the walls of a large college room, was purchased from him, and carefully catalogued and stored, by the Museum of Archaeology and Anthropology. His keyboard instruments he

⁴⁹ Elizabeth J. Markham, *Saibara: Japanese Court Songs of the Heian Period* (Cambridge, 1983).

⁵⁰ *Music from the Tang Court*, 1, p. 14. The present writer was a participant in the event. I was Picken's research pupil from 1974, but working on Indian music; I was therefore not a member of the Tang Music Project, but was privileged to observe its progress at close range. I was one of a large number of students and other associates, in Cambridge and elsewhere, whose interests in Asian music history and organology Picken generously nurtured.

retained; the chamber organ famously would not fit below the low ceiling, which had to be structurally modified to accommodate the full height of the cabinet. Though guests were always warmly welcomed, the move initiated a gradual retreat into semi-isolation. It is said that he had no telephone until he was in his eighties. This is incorrect: when he lived in college, the telephone was across the court at the Porter's Lodge, enabling him to make calls, but not be disturbed by them. Now the Lodge was more distant.

The work, however, continued unabated. An occasional periodical, *Musica Asiatica*, published by Oxford (later Cambridge) University Press, carried articles describing the work-in-progress of the project, and other output from Picken's organological researches. A multi-volume edition of the Tang-music repertoire, *Music from the Tang Court*, critically edited from the earliest manuscripts, was planned, and began to appear in 1981. Other collaborators were drawn into the project: a Japanese scholar, Yoko Mitani, advised on *koto* and was a wholehearted supporter (until her untimely death), as was the Australian composer Noël Nickson. Nickson, Foundation Professor of Music at the University of Queensland, was perhaps a surprising choice of collaborator given that he was not a specialist in East Asian music; but it seems that it was precisely his skills as a composer and analyst of Western music that Picken found valuable. As in the earlier interactions with Roberto Gerhard, Picken believed that a person with such skills could make valid evaluations of musical sound, or, in this case, music in notation, irrespective of context. Nickson's contribution, in successive fascicles of *Music from the Tang Court*, was to show that reconstructed 'original' versions of the Tang melodies were formulaic in structure, and thereby to support a view of them as a body of artfully composed music. Picken believed that no such body of melodic music existed in Japan before the Tang period, and that it could therefore have originated only in China.

As the pupils completed doctorates and research fellowships and left Cambridge for distant parts, and volumes of *Musica Asiatica* and *Music from the Tang Court* gradually emerged, it must have seemed that the 'Picken hypothesis' had been proven beyond any reasonable doubt. The group were, after all, the first to have established how to read, in terms of pitch and metrical structure, the notations of the earliest Tōgaku scores. But again the reaction was mixed. David Fallows opined that this work was 'arguably the most original and most important musicological research now happening in Britain'.⁵¹ Others argued that what the group

⁵¹ Review: 'Musica Asiatica, iv by Laurence Picken; *Music of the Korean Renaissance: Songs and Dances of the Fifteenth Century* by Jonathan Condit', *Early Music*, 12 (1984), 397.

had recovered was the music of the Heian court of Japan, not that of the Tang court of China a century or more earlier. To an extent this was true, since the manuscripts transcribed were the work of remarkably scholarly editors in the Heian period, and Picken was quite aware of changes to the Tōgaku repertoire that had begun already in Heian Japan. But to have ignored the compelling evidence for Tang origins—however the process of transmission is envisaged—would have been myopic.⁵² More damaging criticism came from Japan, where senior scholars such as Kishibe Shigeo and Fukushima Kazuo were absolutely unwilling to accept that performance of Tōgaku could have changed in the manner and to the extent that Picken claimed. Fukushima in particular was virulent in his attack, not on Picken directly, but on Markham's work, which had provided such striking confirmation of the 'Picken hypothesis'.

Picken did not live to see the gradual dawning of acceptance, probably still far from complete, by Japanese and other international scholars. Steven Nelson, who studied with Fukushima, and was himself formerly critical of the 'Cambridge school', has recently written as follows:⁵³

Research undertaken by the late Laurence Picken and his doctoral students (chiefly Rembrandt Wolpert, Allan Marett and Elizabeth Markham) at Cambridge in the 1970's and '80's . . . has made it clear that the key to the understanding of the relationship between the melodic lines [of different instruments] in modern performance practice lies in a structural core that derives from the ancient melodies of Tang China . . . it follows that the performance tempo must originally have been faster, since it is impossible to perceive the *shō* or *biwa* lines as melody in modern performance.

Nelson shares some of the reservations of Japanese scholars, which focused mainly on philological and bibliographic matters, but concludes:

Notwithstanding criticism of the Cambridge view, there is no room to doubt the importance, in analysis of musical structure, of the historical perspective they champion. The idea of change as a result of gradual accretions made to ancient

⁵²Picken addresses this issue in *Music from the Tang Court*, 7 (Cambridge, 2000), pp. 23–36. While partially accepting criticisms by Nelson and some Japanese scholars that do not affect Picken's underlying hypothesis, Marett decisively rejects those of Reese and Lam, drawing on the evidence of the historical sources themselves (Allan Marett, 'Research on early notations for the history of *Tōgaku* and points of scholarly contention in their interpretation', *Yearbook for Traditional Music*, 38 (2006), 79–95).

⁵³Steven G. Nelson, 'Court and religious music (2): music of *gagaku* and *shōmyō*', in A. M. Tokita and D. W. Hughes (eds.), *The Ashgate Research Companion to Japanese Music* (Aldershot, 2008), pp. 49–76. Before studying with Fukushima, Nelson had been taught by Marett at the University of Sydney, and was therefore familiar with the work of the 'Cambridge school', if initially sceptical.

melodies is much more persuasive than the opinion, sometimes still voiced by Japanese performers and scholars, that *tōgaku* has largely remained unchanged.

In a footnote, Nelson adds that ‘The convoluted style of Picken’s prose, difficult even for native speakers, may be another reason why his ideas have met with less appreciation in Japan than they might.’ ‘Convoluted’ is not the right word. As a teacher, Picken insisted on the utmost precision, economy and clarity in his pupils’ prose, but in his own he never completely shed the clinical style and vocabulary of scientific writing, and made few concessions to the non-specialist arts reader, failing to appreciate the degree of difficulty and potential for misunderstanding that might arise from the difference between his language and that of other musicologists. For this reason, among others, his work has been largely ignored by ethnomusicologists of the anthropological school. Another reason is that they do not consider it to be ethnomusicology—which, by their definition, it is not: what Picken pursued was, in his words, a ‘science of musicology’.⁵⁴

Another disappointment for Picken in his retirement years was his failure to achieve due recognition in the Faculty of Music. The appointment of Alexander Goehr to the Chair brought to the helm a Professor who, like Dart, was generously disposed towards ethnomusicology and appreciated Picken’s exceptional distinction. For a time the relationship was cordial. Picken was invited to lecture, for the first and only time in the Faculty. A third-year BA option in Asian Musics was created, taught by Picken’s pupils. But Picken became frustrated by what he saw as the lack of commitment by the Faculty, and lost heart. By the time ethnomusicology came to be established in the Faculty in 1983, he declined to take any part in it. Thus a development that he had hoped for many years to see, happened without him.

Despite these disappointments, Picken’s achievements were honoured elsewhere in the last phase of his working life. He was elected to a Fellowship of the British Academy in 1973, and to Honorary Fellowships at Jesus College (1989), Trinity College (Cambridge) and the School of Oriental and African Studies (both 1991). He was awarded an honorary doctorate of the University of Paris X, Nanterre (1988), and the Curt Sachs Award of the American Musical Instrument Society (1995), the latter for his achievement in ‘the technical analysis and description of musical instruments [from] a scientific viewpoint’. In 1979 he was exceptionally

⁵⁴ See L. E. R. Picken, ‘Review of Mantle Hood, *The Ethnomusicologist*’, *Modern Asian Studies*, 7 (1971), 754–6.

elected to a second Walker-Ames Visiting Professorship in the University of Washington, in Musicology, twenty years after his first, in Zoology; but he cancelled the trip in protest at his treatment at the US visa office. Also in 1979, his seventieth birthday was celebrated with a second *Festschrift*, written by pupils and research associates;⁵⁵ the first, a volume of essays by an international array of ethnomusicologists, had been given to him ten years earlier.⁵⁶

Of all the tokens of recognition he enjoyed, perhaps none gave him greater pleasure than the invitation in 1990 from the Shanghai Conservatory of Music to lecture and attend a concert of Tang Music. This was played from his transcriptions by twenty staff and students of the Conservatory, playing facsimiles of surviving Tang instruments, under the direction of Noël Nickson. It was his first visit to mainland China since 1944: 'It was a really grand occasion', he recalled, 'a concert worthy, in intention, of the court banquets of the Tang.'⁵⁷ The success of the performance contrasted with Nickson's earlier attempts with Japanese performers, whose instrumental techniques turned out to have changed too much to allow them to play at the faster tempi envisaged by Picken. Similarly, he found Chinese musicologists more receptive to his ideas than those in Japan.

In 1997, the American conductor Sarah Caldwell descended unannounced on Lower Park Street to seek advice on Chinese music from its greatest living authority. Her encounter with the retiring scholar led to the formation of an Ancient Asian Music Project sponsored by the Library of Congress, and a conference of Picken's former pupils was convened—their first meeting for twenty years—to discuss its direction. The project resulted in the appointment of an assistant, Mr Michael Good, whose help and support were to be invaluable to Picken for the remaining years of his life; and in the establishment of research posts for Wolpert and Markham at the University of Arkansas, to enable them to continue working on the Tang Music Project.

Throughout the 1980s and 1990s, in continuing good health and undiminished intellectual energy, Picken continued to work on fascicles of *Music from the Tang Court*. Successive volumes, however, contained progressively fewer items of musical repertoire, and more essays by himself,

⁵⁵ *Music and Tradition: Essays Presented to Laurence Picken*, ed. D. R. Widdess and R. F. Wolpert (Cambridge, 1981).

⁵⁶ *Perspectives on Asian Music: Essays in Honor of Dr. Laurence E. R. Picken*, ed. F. A. Kuttner and F. Lieberman, *Asian Music*, 6 (1–2) (1975).

⁵⁷ Quoted in Kouwenhoven, *Interview*.

Nickson and others exploring the structure of the music, its sources and their interpretation, and countering critics by explaining methods and assumptions. The last volume of *Music from the Tang Court* that Picken completed (Volume 7, 2000) contains no music from the Tang court at all, but instead a collection of essays that demonstrate, at the very end of his working life, Picken's undiminished capacity for original thought and detailed musical, historical and scientific enquiry, but perhaps an over-ambitious judgement of what can securely or usefully be said in the light of evidence from remote periods of history and diverse cultural, geographical, linguistic and biological origins. But this ambition was characteristic of him. Forty years earlier, he had written:⁵⁸

In practice, criticism may be justified, and yet the work criticised may be valuable . . . Taking a long view, what is valuable in science is the body of established fact; taking a short view, what is valuable is the hypothesis, emitted perhaps on the basis of insufficient or misinterpreted data, but none the less a stimulus to the scientific community . . . It may be objected that there is danger in giving wider currency to hypotheses still insufficiently sharply formulated; but this is the way in which science has always developed.

Volume 7 was to be the last in the series. In the year of its publication, the death of his sister, to whom he had been close, the strain of selling the family home in Birmingham, and the onset of Alzheimer's disease, precipitated a decline that prevented any further work. His last excursion from Cambridge was a visit to the USA at the invitation of Caldwell and the Library of Congress. On his return, a move from Lower Park Street to the care of the Hope Nursing Home soon became inevitable, but not before he enjoyed two last musical tributes: the Jesus College Orchestra's rendition of a Tang music piece at the May Week concert, and a concert of his youthful compositions in the college Chapel. He died on 16 March 2007 aged 97.

Retrospect

A colleague at Jesus College wrote:

Laurence was self-effacing, a very private person . . . though he could at times let one beyond his reticence, and perhaps most easily through music . . . Soft-spoken, deliberate in movement, modest in demeanour, thoughtful in expression, he was demanding of himself; as he could be of others too, sharply unaccepting of

⁵⁸ *The Organization of Cells and Other Organisms*, xxxvi f.

mistakes and professional failings. His determination was great—he could not otherwise have achieved all he did—and his commitment to scholarly standards and intellectual rigour unwavering. Nothing though took away from his gentle kindness, from the warmth that was somehow always there and that would be apparent at times, after a time.⁵⁹

For those who knew him, it is indeed this warmth, expressed through legendary hospitality and generosity with knowledge, time and friendship, that is most memorable. With warmth came a vulnerability that made him, at times, quick to take offence, a weakness that he regretted. He regarded research as a privilege, demanding unwavering commitment, self-sacrifice and determination. Not for him the ties and responsibilities of family: but he regarded his pupils as his children.

The ethnomusicologist and anthropologist Carole Pegg wrote in 1989:

The extraordinary interdisciplinary nature of Picken's work makes it difficult to compartmentalize. He has had a distinguished career in two fields—zoology and music—and his work in the latter field is important in such diverse disciplines as sinology, turkology, oriental studies, social anthropology, acoustics and ethnomusicology.⁶⁰ Whatever he undertakes is executed with depth and scientific precision. His work in music is characterized by his treatment of it as a science, his sense of history and yet a capacity, when dealing with the music of cultures distant in both time and space, to give them contemporary relevance. It is perhaps the immensity of his work—both in terms of its inter-disciplinary relevance and its mass of factual data—which has hindered Picken's recognition by mainstream anthropology [and, one might add, ethnomusicology].⁶¹

Picken was not given to formal religion, but 'the transcendence of the structures he studied in plants, organisms and musical scores led him to see himself as part of the overarching structure and process of creation'.⁶² His ability to grasp—or at least predict—the interconnectedness of structures at the most minute and most universal levels characterises his work in both science and musicology, and is perhaps his most enduring legacy. Thus his penetrating analysis of an Afghan quail-lure (a miniature, single-note, sound-producing device of ingenious construction which he encountered in Kabul) hints at a sweeping vision of the history of music and musical instruments across Europe and Asia from prehistory to the present

⁵⁹ Heath, *Address*.

⁶⁰ One could add organology and music archaeology.

⁶¹ Carole Pegg, 'Experimental musicology: the work of Laurence Picken', *Anthropology Today*, 5:1 (1989), 16–17.

⁶² The Revd Margaret Widdess, address delivered at the funeral of Laurence Picken, 30 March 2007.

day, and of the interaction of human activity with natural materials and the sonic behaviour of animals and birds;⁶³ so had he earlier seen the behaviour of organic materials as a function of their cellular and molecular structure. As others have noted,⁶⁴ the world view that he applied equally to zoology and music is aptly summarised in a quotation from the fourth-century BC Chinese text *Guanzi* (as translated by his teacher and friend, Gustav Haloun), with which Picken ended *The Organization of Cells and Other Organisms*:

Reality is the embodiment of structure;
Structures are the embodiment of properties;
Properties are the embodiment of harmony;
Harmony is the embodiment of congruity.⁶⁵

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⁶³'An Afghan quail-lure of typological and acoustic interest', in G. Hilleström (ed.), *Festschrift to Ernst Emsheimer on the Occasion of his 70th birthday, January 15th, 1974* (Stockholm, 1974), pp. 172–5. For Picken's views on birdsong and whalesong as music, see his 'Foreword' to Peter Fletcher, *World Musics in Context: a Comprehensive Survey of the World's Major Musical Cultures* (Oxford, 2001), pp. 1–29.

⁶⁴Good, 'Laurence Picken'; Heath, *Address*.

⁶⁵*The Organization of Cells*, p. 509. The citation is given as *Kuan Tsi*, ch. 55, Section IX.

Born September 30, 1909 in Hay, New South Wales, Fisher was raised in the Darling Downs, Queensland, and attended Toowoomba Grammar School. He studied science at Queensland University, majoring in geology and chemistry, and gained his Bachelor of Science at the end of 1930. After obtaining his Honours degree in geology in 1931 he accepted a position as Mine Geologist with Mt Isa Mines Limited.Â Doc Fisher passed away on September 23, 2007. Related Information. Online Tools.