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The Modern Free-Reed Instrument in Context

Introduction

This chapter seeks to place the invention of the concertina into the contexts of contemporary musical activity and developments in musical instrument technology and use. It draws upon a wide range of sources to identify and discuss the major strands in the development of the modern free-reed and chart the first attempts at its inclusion in practical and commercial musical applications.

Innovation and Invention in Musical Instruments during the Early Nineteenth Century

Innovation and change in certain classes of musical instruments was an important feature of musical life in Europe and North America during the late eighteenth and early nineteenth centuries. This activity took place in two main areas:

1. The improvement and adaptation of the design of existing instruments, and
2. The invention of new musical devices,

and can be seen as part of the “radical situational change”⁸⁵ in music during the period. In terms of musical form and practice, this change was linked to new technical and stylistic demands of composers and performers, changes in orchestral and ensemble structure and new expectations of sound character, expression, dynamics, tone-colour and texture. There was also the emergence of new musical organisations and institutions, new performance opportunities,⁸⁶ an increase in the number and variety of concerts⁸⁷ and an emerging emphasis on virtuosic solo performance “in halls which presented players and instrument makers with acoustical conditions and problems of an entirely new order”.⁸⁸

⁸⁵ Middleton, Studying Popular Music, p.12.

⁸⁶ Hyatt King, A “General Musical Conditions” in Gerald Abrahams (ed.) The Age of Beethoven (London, 1982), pp.1-25.

⁸⁷ Weber, William Music and the Middle Classes (London, 1975).

⁸⁸ Harrison, Frank and Rimmer, Joan European Musical Instruments (London, 1964), p.58.

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Musical instrument manufacture and distribution were highly implicated in “the spread of the market system through almost all musical activities”⁸⁹ and increased demand for instruments, from both professionals and amateurs. Furthermore, as Kassler⁹⁰ has shown, in the period before 1840, much inventive and commercial activity was directed towards aspects of musical education, and in particular means to popularise the learning of musical theory.

Improvement and invention was made possible by advances in science and technology. The study of acoustical phenomena was a major area of scientific investigation at a time when “many mechanical inventions were made which tended to modify existing sounds or to create new ones”⁹¹ and advances in metallurgy and expanding foreign trade allowed the wider availability of suitable constructional materials. Developments in precision mechanics, the production and application of machine tools and developments in clock-making and scientific instrument manufacture also had an effect on musical instrument making and there was a lively cross-fertilisation of ideas resulting from the mobility of skilled labour, from the activities of emerging learned societies and through specialist scientific and musical publications.

The term improvement must be used with care, for “there is a debit side to all the mechanical improvements and innovations of the nineteenth century” and “to some extent all modern orchestral instruments represent a compromise in terms of sound in order to facilitate greater technical control and dexterity”.⁹² Nevertheless, developments in instrument design tended to work towards an improved ease of performance, a full, rich tone, increased power, enhanced expressive facilities, an improved chromatic potential, a greater compass, more stable tuning and greater general reliability. During this period change was most notable within certain musical instrument families. Ehrlich⁹³ and Chanan,⁹⁴ for example, have shown how many small improvements by individual innovators over a long period contributed to the emergence of the modern pianoforte, so that by the mid-nineteenth century it had acquired a greater range, a more reliable, efficient mechanism and could produce a more powerful and mellow timbre controlled through pedal mechanisms. Advances in methods of manufacture, design and the availability of suitable materials, combined with new or reorganised key mechanisms, made woodwind instruments easier to sound, increased their range and improved their potential for solo performance. Similarly, industrialised manufacturing methods “and the standards of precision which went with them, brought about the liberation of brass instruments from the

⁸⁹ Middleton, Studying Popular Music, p.13.

⁹⁰ Kassler, Jamie Croy The Science of Music in Britain 1714-1830 (New York, 1979).

⁹¹ Thibault, G., Jenkins, J. and Bran-Ricci, J. Eighteenth Century Musical Instruments (London, 1973), p.XX.

⁹² Munro, David Instruments of the Middle Ages and Renaissance, (London, 1976) p.5.

⁹³ Ehrlich, The Piano...

⁹⁴ Chanan, “Piano Studies...”.

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limitations of the natural harmonic series by means of the piston valve patented in 1818".⁹⁵ The application of industrial processes also facilitated mass production.

The invention of new musical instruments was, in part, an attempt to redress the deficiencies of existing, or already abandoned instruments, in the light of new musical circumstances. Middleton, taking a lead from Raymond Williams,⁹⁶ has stressed that the musical application of new technology was not merely accidental but that "technical invention is always sought in relation to existing or foreseen social practices".⁹⁷ It can therefore be located within the "whole nineteenth-century complex of research and innovation within 'communications'... which in turn grew directly out of, and depended upon, needs expressed in the trajectory of industrial capitalism".⁹⁸ Monichon suggests that musical instrument designers of the late eighteenth and early nineteenth century actively sought and worked for an "instrument ideal":

On comprend le secret désir de ces inventeurs à la recherche d'un instrument idéal, qui pourrait tout à la fois être mélodique, polyphonique, portatif, à sons fixes et aurait l'avantage, sur le plan de l'expression de "filer" plusieurs sons en même temps -effet que l'on ne rencontre que dans un ensemble instrumental.⁹⁹

Their inventions took a number of forms, including:

1. The exploitation of new methods of sound production (glass harmonica, aeolian harps, bowed metal plates, nail violin etc.),
2. The rediscovery and employment of instruments from folk or foreign cultures (eg jew's harp, hurdy gurdy,¹⁰⁰ free-reeds, keyed bagpipes,¹⁰¹ dulcimer),
3. The radical adaptation of existing musical instruments (saxophone, bowed piano), and
4. The creation of hybrid devices combining the characteristics and/or potential of existing instruments (eg harp lute, bowed guitars).

⁹⁵ Harrison and Rimmer, European Musical Instruments, p.53.

⁹⁶ Williams, Raymond Television: Technology and Cultural Form (London, 1974).

⁹⁷ Middleton, Studying Popular Music, p.84.

⁹⁸ Howarth, "Free-reed Instruments...", p.219.

⁹⁹ Monichon, L'Accordeon, p.27.

¹⁰⁰ E.g. the vioicembalo of Abbate Gregorio Trentin (1822) and the plectroeuophon of Gama, Nantes in which strings were sounded by a revolving bow.

¹⁰¹ Keys were added to the Northumbrian bagpipes c.1805: Cocks, W.A. and Bryan, J.F. The Northumbrian Bagpipe (Newcastle-upon-Tyne, 1975).

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Of the many new musical instruments claimed during the early nineteenth century, only a few survived beyond the prototype stage and, even where they met with some degree of acceptance, there was often a considerable time lag between invention and adoption. Lively competition between innovators was manifest in the large number of patents for both improvements and inventions. Important in the presentation of such devices were their chosen names which variously reflected the operating system (eg aeol-harmonica), the method of performance (eg phys-harmonica), ideal tonal qualities (eg harmonica) or the name of the creator (eg Saxhorn, Bandonion). Commonly there was a use of Greek, Latin or Italian in keeping with contemporary neo-classical taste and to give an air of respectable musical pedigree. Although the aim was to achieve individuality, there was inevitable duplication, which makes classification by name and historical discussion difficult.

Innovation was commonly the action of individuals and, although the results were occasionally radical, they tended to involve the accumulation of a large number of small, isolated events rather than a few major advances, as in the pianoforte or the “Boehm” system, which also evolved through step by step, controlled experiment. Many inventions led down “blind alleys” or were rapidly superseded by others’ work and the adoption of innovation was slow and uneven. As discussed by Buchanan,¹⁰² the conception, development and application of early nineteenth-century invention was dependent on a receptive social environment which identified a need for innovation and could offer the essential resources (economic, material, skills etc..) required for exploitation. Communication of the innovation was also a crucial factor and reception relied upon key groups prepared to consider innovation seriously and sympathetically. In terms of the latter, Harrison and Rimmer¹⁰³ have shown how the incorporation of improvements and adoption of musical inventions was most successful if there was professional endorsement by noted public performers and where the innovator had links to high-status or influential institutions. Adoption was also dependent on the prevailing orchestral structure, musical abilities, tastes and skills in any given place.

While the improvement of existing instruments was tied to the demands of established musical institutions and practices, the adoption of new musical devices was more often found in the musical activities of new institutions or where convention and tradition were less important, such as in foreign missionary work, the evolving domestic amateur market and in popular concerts.

The developments described above relate mainly to instruments in use at the professional level or by the urban middle and upper class amateur. During the first half of the nineteenth century, the musical activities of most of the population was unaffected by such innovation and change. This was certainly the case in Scotland.

¹⁰² Buchanan, R.A. *Industrial Archaeology in Britain* (Harmondsworth, 1972), p.41.

¹⁰³ Harrison and Rimmer, in *European Musical Instruments*, note that the adoption of the clarinet was dependent on the presence or absence of permanent opera and its degree of progressiveness (p.43) and the influence of the national conservatories (p.55).

The Scottish Context

David Johnson has described how, by 1830, classical music in Scotland had “silted up”, with its main urban centres sharing little in the innovation and change current in London, Paris or Vienna.¹⁰⁴ On the other hand, the upper- classes had largely abandoned their patronage of traditional music.

Although, by the 1840s, the processes of industrialisation and modernisation were well underway, Scotland was unevenly urbanised, with only 35% of the population living in towns of 5000 or more. Occupying an intermediate position between an undeveloped and a modern economy, much of its industrialisation was in semi-rural areas and many town dwellers had direct experience of rural life. As the century progressed, the middle classes embraced more general British attitudes and taste, although many traditional forms of popular recreation were still vigorously pursued and music remained integrated into many customs and rituals.

The Scottish musical tradition was basically monophonic; harmony (other than drones) was unusual at the folk level and there was a strong and distinct native musical idiom. Dissemination was mainly (but not exclusively) by aural means, repertory was not standardised and there was much personal, local and regional variation in music and song.

For most of the population, rural or urban, disposable income and leisure time were limited. Economic and domestic living conditions, both in terms of an environment suited to the conservation of instruments and in terms of the “cultural space” required for their use, ensured that widespread, individual ownership (in common with that of other goods) was inhibited. The range of instruments in amateur use was little different from that typical of the eighteenth century. Instruments were inexpensive, portable, often made by the musicians themselves or constructed through cottage industry on a one-off basis and paid for in kind or patronage. Materials were often local and the instruments’ scales and tuning more closely related to prevailing traditions or the personal skill and preference of the maker than any accepted standard. Mass production and importation from abroad did exist, as in the case of penny whistles and Jew’s harps, and there was a good supply of second hand instruments including obsolete models abandoned by professionals and the upper classes. Unaccompanied vocal performance had a central role but instrumental music did flourish too, serving the demands of social dance.

¹⁰⁴ Music and Society..., London, 1982.

The Modern Free-Reed

The emergence of modern free-reed instruments was stimulated by the importation of oriental free-reed mouth organs into Europe and the subsequent scientific study of the free-reed principle by acousticians.

Free-reed mouth-organs originated in East Asia and have been known in China since at least 1766-1122 B.C. They can be broadly classified into four types:

1. The grouped type, in which bamboo tubes bearing reeds are set in a circle and fitted into a cup bearing a mouthpiece.
2. The raft type, in which the bamboo tubes are arranged not in a circle but in two parallel rows with the reeds contained in a small air chest with mouthpiece part way down their length.
3. The dissociated mouth organ, in which a single bamboo tube bearing one reed sounds a number of different pitches controlled by finger holes as in the transverse flute.
4. A miscellaneous group of simple instruments, including those in which free reeds are fitted into animal horns and used to produce drones.

All employ delicate reeds which give the soft, clarinet-like tone and pleasant buzzing resonance which generated considerable interest when they were first brought to the West. The grouped and raft types are also notable on account of the manner in which the notes of the scale are arranged to facilitate the performance of chords as well as melody.¹⁰⁵

Although there is a need for further research, to “allow for the compilation of accurate data and supporting evidence to properly trace the free-reed from Asia ...to Europe”,¹⁰⁶ it is not my intention to dwell on the matter here.¹⁰⁷ Similarly, a survey of the

¹⁰⁵ See, for example, Terry Miller on the Khaen in his Traditional Music of the Lao (London, 1985).

¹⁰⁶ Macerollo, Accordion Resource Manual, p.6.

¹⁰⁷ Key primary references include: Praetorius, Michael “De Organographia” in Syntagmatis Musici (tomus secundis) (1618); Marin Mersenne Harmonicon Libri 5 (Paris, 1636) (trans. by Roger E. Chapman) in Harmonie Universelle. The Books on Instruments (London, 1957), p.383; Amiot, Jean Joseph Marie (Abbe Pierre Joseph Rousier ed.) Memoire sur la Musique des Chinoise (Paris, 1779) and Memoire concernant l’histoire, les sciences, les arts, les moeurs, les usages des Chinoise (Paris, 1780); de la Borde, Jean Baptiste Essai sur la Musique Ancienne et Moderne Vol. 1 (Paris, 1780) pp.365, 129, 141 and 142. Secondary sources include Sachs, Kurt The History of Musical Instruments (London, 1940), p.184; “Harmonium” EB 11 Vol. VI, p.78; “Harmonium” NGDMM Vol. 8; Muller, Mette “Around a Mouth-organ: The Khaen in the Danish Kunst Kammer” in F. Hellwig (ed.) Studia Organologia, (trans. Jean Olsen) (Tutzig, 1987), pp.389-404.

influential work of pioneering scientists must be left to others. The publication of the findings of Kratzenstein of Copenhagen, Kirschnik of St. Petersburg and Robison of Edinburgh, and of other theoretical and descriptive material during the late eighteenth and early nineteenth centuries, helped spread an understanding of the free-reed and stimulated its application in experimental instruments.¹⁰⁸

The Modern Free-Reed Applied

Free-Reed Organs

Although a number of writers have provided lists of the many new free reed instruments which emerged in the period 1780- 1840, these are not exhaustive and “corroboration of detail becomes increasingly difficult” as historians of different nations “vie with each other as to leadership in the scheme of invention”.¹⁰⁹ As experiment and invention took place in a large number of different centres, a full survey and in- depth investigation would be complex, requiring study in several countries. Furthermore, dates associated with the appearance of a particular instrument cannot be used with precision, for they can refer to the date of first construction, its first mention in the press, the date claimed by its inventor or manufacturer, the date of patent lodged or the date of patent granted. In the absence of extant examples, the true nature of many instruments remains vague and comparison is difficult. Study is further confused by the duplication and similarity of names applied to different instruments. Again, it is not my intention to pursue this in any depth here although the following overview (illustrated by Figure 2.1) is useful in describing the context of the concertina’s invention.

While it has been suggested that free-reed organs were being made in Italy in the early eighteenth century,¹¹⁰ the first documented examples date from the 1780s and 1790s when the free-reed was used as an additional stop in existing organs and in new portable instruments.¹¹¹ The early inventors did much to publicise their products, travelling widely through Northern Europe and stimulating further invention. By the early nineteenth century, free-reed instruments were being made in a number of countries.

The free-reed found a permanent place in church organs in Silesia, Saxony and Prussia and was incorporated into mechanical instruments.¹¹² During the period 1810-20, free- reed organs were being made in France¹¹³ and in Germany, where invention

¹⁰⁸ “Free-Reed Vibrator” *EB 11* Vol. XI, p.87.

¹⁰⁹ Macerollo, *Accordion Resource Manual*, p.6.

¹¹⁰ “Reed Organ” *NGDMI* Vol. 3, p.219.

¹¹¹ *Ibid.*, Vol. 3, p.219 and “Harmonium” *EB 11*, p.959.

¹¹² Ord-Hume, *Harmonium*, p.24.

¹¹³ E.g. Grenié of Paris’ *orgue expressif* of 1812.

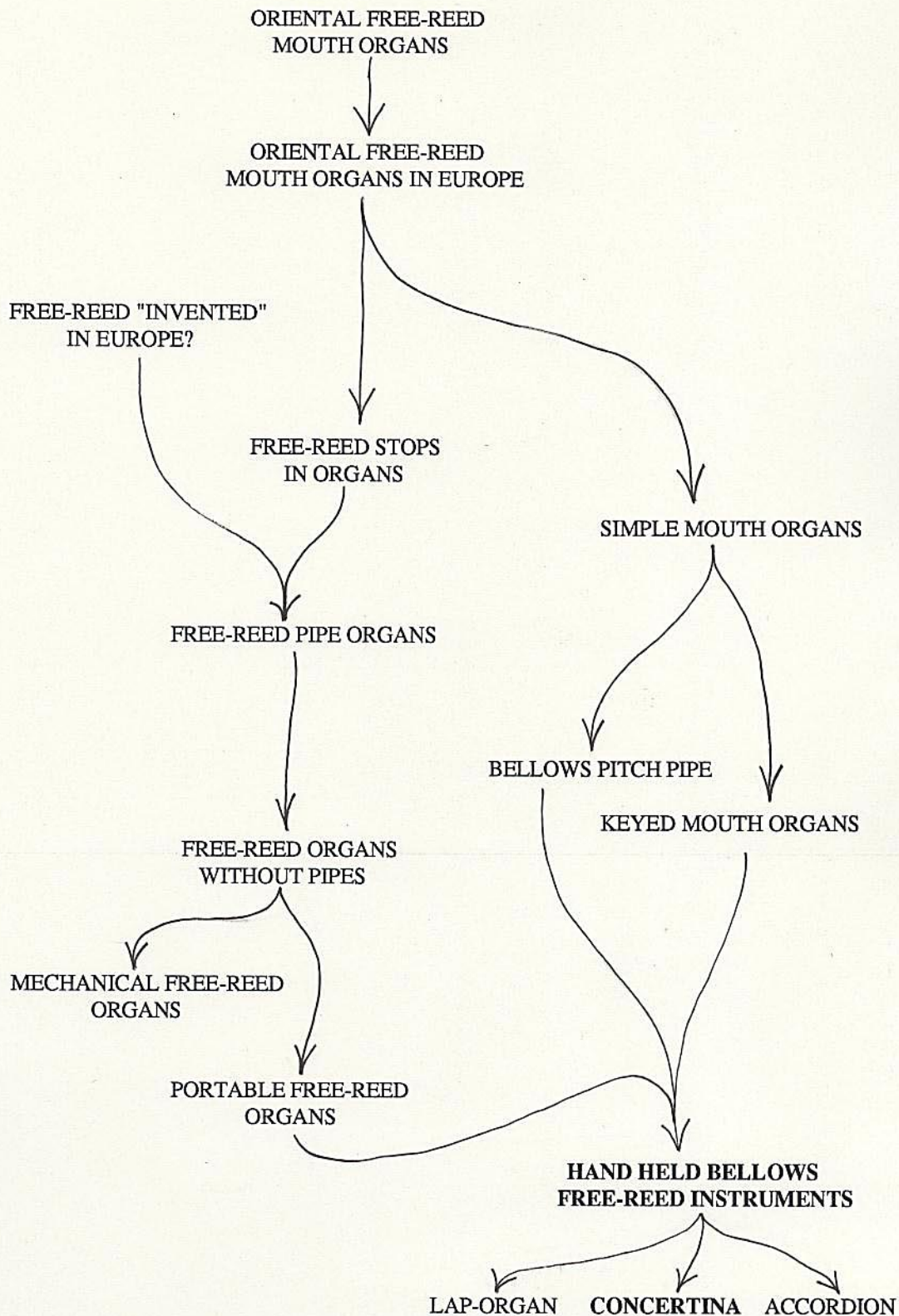


Figure 2.1 The Evolution of the Modern Free-Reed Instrument.

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and innovation were supported by a cross-fertilisation between the musical instrument and the clock-making industries. By the early 1820s, the free-reed had found a place as the sole sound generator in a new wave of “pseudo organs”¹¹⁴ in which the reeds were independent of pipe resonators. Significant inventions included the bellows-blown aoline and aolodicon of Johann David Buschmann and the phys-harmonika of the Viennese instrument builder Anton Hackel.

The United States of America also contributed to the early development of the free reed organ through a number of inventions and patents. It was there that the American organ, sounded by sucking rather than blowing the reeds, was developed.

It is known that free-reed organs were being heard in London during the mid 1820s. Edouard Schulz, aged 14 years, performed on one at Kirkman’s Rooms, Frith Street, Soho in 1826¹¹⁵ and in April 1828 a Mr. Schulz and his sons played the free-reed aeol-harmonica in a Concertante for the instrument and two guitars. A review of the concert, which is perhaps the first recorded reaction of the musical establishment in Britain to the new free-reed instruments, is worth repeating at length:

The Concertante on the aeol-harmonica was an unfortunate business, because entirely out of its place here. This instrument, about the size of a large writing-desk, mounted on a stand, and having two octaves of keys, is, as its name implies, a wind instrument -a kind of organ, the air acting not on pipes, but on a number of extremely thin narrow metallic bars, or laminae rather, which it puts into vibration; but the exact way in which they produce sounds, the inventor does not disclose. It yields a remarkably clear, glassy, musical tone, loud enough for a private room, but too weak to penetrate much space. The performer confines himself chiefly to melody but occasionally adds what might be called a bass, and sometimes chords. He is, however, accompanied by two Spanish guitars, which are exceedingly well managed by the father and one son, the other playing the aeol-harmonica.

Much disapprobation was expressed at the introduction of this, which was considered more fit for an exhibition-room than for a concert of high order. At the conclusion some hissing was heard, and many voices exclaimed, “Shame!, Shame!” which we fear, the very ingenious performers took to themselves, though meant to be addressed only to those who invited them there. It was a great mistake,

¹¹⁴ Galpin, Francis, W. A Textbook of European Musical Instruments (London, 1937), pp.210-213. These included instruments by Schmidt of Pressburg, Voit of Schweinfurt, Sebastian Müller and F. Sturm of Suhl, Thuringia, Schortmann of Buttelsstädt (aeolsklavier), Brunner of Warsaw (aeolmelodicon, choralion or choraleon “for hymn accompaniment”), József Dlugosz (aeolpantalon or aeolimodicon), also of Warsaw. For obvious reasons the period 1820-1840 has been termed the “Greek Period”: “Harmonium” GDMM Vol. IV, (1954), p.75.

¹¹⁵ “Seraphine” GDMM 1890 Vol. III, p.466.

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unquestionably, to bring them forward in such a place and not the first or second that has been committed this season. By neglecting their duty they placed a clever family in a most painful situation.¹¹⁶

It has been suggested that the free-reed was absorbed slowly into Britain because native organ builders were exceptionally skilled in the voicing of beating reeds and perceived need for its inclusion.¹¹⁷ Nevertheless, the 1820s saw the establishment of free-reed organ manufacture in London. A patent¹¹⁸ of 1829 by Francis Day and August Münch covered “the adaptation of a new stop or set of substitutes for organ pipes [which] may be applied to other instruments, such, for instance, as the organised pianoforte, when constructed purposefully to receive it, or the barrel organ”.¹¹⁹ The complexity of the reed design in this, the first patent involving the free-reed lodged in Britain, is an indication of the advanced state of understanding of such instruments in the country at the time.

Ord-Hume has covered this area in some depth,¹²⁰ noting the commercial production of a number of new instruments including the seraphine (a name which remained attached to English made free-reed organs throughout the nineteenth century) and Day and Münch’s aeolophon,¹²¹ an instrument with a range of six octaves and fitted with three pedals -one for operating the bellows, the others for regulating the swell. According to its reviewer:

The tone of this instrument, particularly in the middle and lower parts of its compass, is among the most beautiful we have ever heard, and much superior, both in body and quality, to that of any chamber organ of equal size; added to which, the aeolophon has the inestimable advantage of never varying its pitch, or getting out of tune.

From the nature of this instrument, it will be readily conceived that its best effects are displayed in slow movements, and the sustaining and swelling long notes; but to our surprise, as well as pleasure, we found that a running passage, even of semitones, could be executed upon it, if not with all the distinctness of a Drouet or a Nicholson, with as much clearness as on any organ. As an accompaniment to the piano-forte, it will be found an admirable substitute for the flute, clarinet, oboe,

¹¹⁶ Harmonicon VI (1828), p.137.

¹¹⁷ Helmholtz, On the Sensations of Tone, Appendix XIX, H7, p.711.

¹¹⁸ A.D. 1829 No. 5802 “Specification of Francis Day and August Münch: Musical Instruments” (London, 1857).

¹¹⁹ *Ibid.*, p.2.

¹²⁰ Ord-Hume, Harmonium, p.18.

¹²¹ “The Aeolophon, a Newly Invented Instrument” in Harmonicon (1831), p.7. It was reported: “On Saturday last, the 27th., the manufacturer of the Aeolophon attended, by command, with the newly-invented instrument, at St. James Palace, and the Royal party were amused for upwards of two hours by the performance on it. The Queen seemed particularly pleased by not only its tones, but with its mechanism.” (p.14). This instrument was advertised daily at Chappell’s Bond Street premises.

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bassoon, or even violoncello; but perhaps its widest range of usefulness will be discovered in small orchestras, where a set of wind instruments is incomplete -the effects of any, or even all of which, may be supplied by one or two performers on the Aeolophon reading from the score, or even from separate parts.¹²²

There was also the glossophone, constructed by a Dr. Dowler:

In 1829 the Society of Arts presented a medal... for an instrument constructed on this principle with keys. The bellows were placed underneath, and the springs arranged over a continued wind- chest, furnished with a valve to each note. This instrument was tolerable of its kind, but inferior to one which has been made by Mr. Day, an ingenious mathematical instrument maker, who has considerably improved the manufacture of the springs.¹²³

By the 1830s, many improved versions were on sale, including John Green's Royal Seraphine. This was advertised as having "power sufficient for small Congregations or Domestic Parties, and yet contained in the size and form of a Lady's Work Table".¹²⁴ Another writer noted that its:

Somewhat similar power [to the organ], together with the compactness and portability of the instrument, has caused the seraphine to be much used in chapels and small churches. Not infrequently it occupies a place in the minister's pew and is played upon by some of his family. The practical or manual skill required in playing is probably midway between that required for the pianoforte and that required for the organ.¹²⁵

Although Scotland enjoyed the fruits of this inventive period, it contributed little. In 1837, we read that in Edinburgh:

An instrument in the shape of a small square box, and intended to be a substitute for the oboe, was tried upon the present occasion; and in our judgement it will be found a useful appendage to a small orchestra, when a good oboe is not an alternative. Its quality of tone appears to

¹²² Ibid., p.7.

¹²³ OTPMFMS (December 1839).

¹²⁴ Advertisement in Harmonicon (December 1830) quoted in Kassler, The Science of Music, Vol. 1, p.98.

¹²⁵ OTPMFMS (October 1839). It is interesting to note the contribution of Samuel Wesley in promoting early free- reed organs in England through his role as a demonstrator. In a lecture to the Royal Institution by Charles Wheatstone in 1830, Wesley played upon Dowler's glossophone, Dietz's aerophone and Day's aeolian organ. According to Ord-Hume, Harmonium, p.144, John Green engaged him to provide weekly performances on the Royal Seraphine in his shop.

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be as perfect as the instrument it represents. Mr D. Hamilton, an organ-builder of our city, is the constructor.¹²⁶

The euphonicon of Duncan Campbell was almost certainly of the free-reed type also:

About the size of a piccolo pianoforte... a wind instrument played by bellows which were worked by the right foot. It was first exhibited in the Monteith Rooms, Buchanan Street, Glasgow in March 1830, when it was played by Henry G. Nixon (1796- 1849) the organist of St. Andrew's Roman Catholic Chapel (1833-39). It was also used at the consecration of St. Mary's Roman Catholic Chapel in 1842.¹²⁷

During the 1830s and 40s, France and the United States became the main centres for free-reed organ manufacture, with the harmonium and American organ as principal instruments.

Of particular interest to the historian of the concertina is the large number of small, portable organs commercially produced after 1840. These found favour with missionaries, travellers and domestic amateurs. The Great Exhibition of 1851 featured two versions of the portable harmonium, one by Muller of Paris¹²⁸ and another by Wheatstone and Co. which was awarded a prize medal. Smaller table or lap organs were used in the colonies and India in particular where they were absorbed into the indigenous culture.

Free-Reed Mouth Organs

The early 1820s also saw the manufacture of simple free-reed mouth organs in Germany. The first instruments "were more or less toys, with reeds played only by blowing, set in resonators rather like panpipes".¹²⁹ Later, instruments were developed in which a number of reeds were fitted into plates to be held vertically against the player's mouth. These were made by Wheatstone and Co. of London as the aeolina and by Pinsonnat of Paris as the typotone.¹³⁰

Instruments familiar today as the harmonica soon followed and a major industry developed in Germany as manufacturers diversified during a depression in the clock-making industry.

¹²⁶ Report on Edinburgh St. Cecilia Society in The Musical World Vol.IV No.XLIV (13 January 1837), p.62.

¹²⁷ Farmer, Henry George A History of Music in Scotland (London, 1947) pp.402-3.

¹²⁸ Both are illustrated in handbill advertisements, possibly from the Great Exhibition, London 1851, which are held in Reid Music Library, University of Edinburgh.

¹²⁹ "Harmonica" NOCM Vol.1, p.812.

¹³⁰ Monichon, Petite Histoire..., p.42. An early method was Willis, I. The German Aeolian Tutor (London, 1830).

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Attempts to develop keyed mouth organs included the neu tschang,¹³¹ the psalmelodicon,¹³² the lyre shaped apollo-lyra or lyre enchantée and the harmoniflute by Paris of Dijon. Charles Wheatstone's patent for a keyed aeolina was the direct predecessor of his concertina, as discussed later.¹³³

Hand Held Bellows Blown Free Reed Instruments

The creation of small free-reed organs and the application of bellows to mouth organs, came together in the invention of hand held, bellows blown free-reed instruments.

In Germany, the aura or mundaoline of Christian Buschmann was adapted into the handaeoline.¹³⁴ With his sons, Cyril Demian of Vienna patented the accordion in 1829.¹³⁵ The first accordions were produced commercially in Austria and France (where they took the name accordéon) from around 1830 and comprised single manual instruments sounding a small selection of set chords.¹³⁶ By the mid-1830s, versions were on sale which allowed the performance on a melody keyboard and accompaniment by fixed chords on a separate manual.

The accordion underwent considerable development during the century including the evolution of different keyboard systems and a large number of technical refinements. It was not until well into the present century, however, that it would become concert instrument. The concertina, a peculiarly British cousin, appeared during the 1830s and owed its existence to Charles Wheatstone of London. In Germany, the bandoneon and konzertina were manufactured from the mid-1830s onwards.

Mention should also be made of the mélophone, invented c.1837 by Leclerc of Paris. This instrument, which was in the shape of a guitar, was "greeted in France with some enthusiasm"¹³⁷ and used in formal concerts and opera. Galpin also refers to the mélophone-harpe, which combined reeds with strings, and the cécilium, which was made in a violoncello shape.¹³⁸

¹³¹ Marcuse, A Survey..., p.735.

¹³² Ibid., p.736 and Galpin, A Textbook..., p.202.

¹³³ The melodica was the only modern keyed mouth organ to have met with sustained commercial success.

¹³⁴ Autorenkollektiv, Das Akkordeon (Leipzig, 1964) trans. Stuart Frankel as "The Free Reed: A History, Part 1" Concertina and Squeezebox 12 (1986), pp.17-18.

¹³⁵ Patent 1757 (Vienna, 6 May 1829). Text and illustrations in Monichon, L'Accordeon, pp.32-36. For the earliest published description in English see I.P. (John Parry) "On the Accordion and Symphonium" Harmonicon (1831), pp.56-7.

¹³⁶ Wayne, The Wheatstone English Concertina, p.126, suggests that Wheatstone and Co. of London were making accordions during the 1830s. There is a very early accordion tutor published by the company, Instructions for Performing on the Accordion, in the Mitchell Library, Glasgow.

¹³⁷ There is an example of this instrument in the private collection of Stephen Chambers, Dublin. Dunkel, Bandonion, pp.76-78, discusses the instrument with illustrations. According to "Harmonium" GDMM Vol.1 (1890), p.667, the mélophone "came out at the Paris exhibition of 1834".

¹³⁸ Galpin, A Textbook..., pp.211, 212.

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Automatic Free-reed Instruments

During the second half of the nineteenth century, mechanical instruments were produced on a large scale and many employed the free-reed.¹³⁹ These instruments can be located in a larger network of mechanical sound reproduction and communications, joining those strands of phonograph and gramophone technology being developed for commercial, educational and archival purposes, including the foundation of the modern record industry.

Discussion

The concertina was just one product to emerge from the wave of research and development in musical instrument design which was part of both a fundamental musical change and advances in contemporary communications technology. Furthermore, the instrument was a relatively late arrival, the potential of the free-reed having been long recognised and extensively investigated in the search for an “instrument ideal” on account of a number of its characteristics:

1. The free-reed’s novelty made it attractive (in the short term at least) and allowed its use in instruments free from convention, particularly those used in new performance settings.
2. The reliability of its tuning allowed use by players lacking a high degree of tuning skill.
3. Its low maintenance requirements offered considerable advantages over existing instruments. It was particularly suited for instruments used in remote areas or by those unable to employ technicians.
4. The reed’s carrying power allowed use in the concert hall for both solo and ensemble work and in the open air.
5. The potential for expression in performance allowed it to meet the demands of contemporary musical taste and to compete with the limited facilities in existing keyboard instruments.
6. The free-reed’s potential for sustained sound in polyphonic instruments meant that it could compete with existing keyboard instruments while offering advantages over melodic instruments.
7. The relative ease of construction and suitability for industrial manufacture allowed for economies of scale and division of labour in manufacture which ensured low cost.

¹³⁹ See Marcuse, A Survey..., p.741, Ord-Hume, Arthur W.J.G. Clockwork Music (London, 1973).

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8. The light weight ensured suitability in portable instruments for use in a wide range of settings and transportation abroad.

9. The free-reed offered an infinite variety of instrument designs and configurations to suit the musical needs of different individuals, groups and cultures.

The modern free-reed family is one of great diversity. As the nineteenth century progressed, new forms continued to develop and found favour in cultures throughout the world. Although commercial production was undertaken in a number of centres, Scotland played little part in this activity with the result that it has always been a consumer of foreign made free-reed instruments.

I now examine the circumstances surrounding the development and first production of the concertina before charting the course of its use.