THE CARILLON

THE TAYLOR BELLFOUNDRY LOUGHBOROUGH ENGLAND



THE CARILLON

x

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The Carillon.



CARILLON is a set of bells tuned to the notes of the chromatic scale upon which music in two or more parts may be played; that is, airs with accompaniment, sonatas, fugues, fantasias, and similar music. The Bells hang stationary and are played either by the "carillonneur" (bell-player) or automatically.

The smallest number of bells to which the term "carillon" may be applied correctly is two chromatic octaves consisting of twenty-five bells. Any less number would be called more precisely a "chime" of bells, and upon so limited a scale only music in one part is possible; that is, tunes without accompaniment, "bell-changes," and similar single-note phrases.

The number of bells in a carillon may extend to fifty or even more. A range of four chromatic octaves consisting of forty-nine bells affords the carillonneur generous scope for the expression of his art.

The size of the largest bell distinguishes the character and the importance of a carillon more definitely than does the actual number of the bells. For instance, forty bells with largest of 3 tons weight is a much more important carillon than forty-four bells with largest weighing $1\frac{1}{2}$ tons.



The Casting of a Bell.

PAGE THREE

The carillonneur plays the bells by means of a clavier which is constructed on a principle somewhat similar to that of the manuals and pedals of an organ; the keys of the manual are made of wood, round in shape, and $\frac{3}{4}$ in. in diameter; there are two rows, the upper $4\frac{1}{4}$ in. above the lower, the upper represents the "black notes" of the organ or piano and projects $3\frac{3}{4}$ in. while the lower represents the "white notes" and projects $6\frac{1}{4}$ in. The keys of the pedal are also of wood, flat in shape, and so placed as to be actuated easily by the feet of the carillonneur; they resemble closely the arrangement of the pedals of the organ; the compass is an octave and a half.

The keys of the clavier are connected to the clappers of the bells in a manner similar to that of the tracker action of the organ; bronze wires and steel transmission-bars in the carillon take the place of wood in the action work of the organ.



Clavier and Carillonneur.

It is important that the connecting wires between the clavier and the bells should be adjusted to a delicate nicety if the carillonneur is to obtain the best and most artistic results; and an adjustable turnbuckle permits of this being done to a very fine degree of accuracy. It will be readily inferred from the foregoing that the clavier must be fixed on a firm and unyielding base or floor, since even a slight deflection in the base would make a perceptible difference in the wires which connect the keys of the clavier with the clappers of the bells. The clavier should be fixed as near the bells as practicable.

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The bells of a carillon are hung in their framework on different levels, the largest bells hanging in the lowest tier and the smallest in the uppermost. The floor above the clavier, that is, between the clavier chamber and the bell-chamber, should be solid and thick in order to prevent the tone of the largest bells, which are immediately above that floor, entirely overpowering in the carillonneur's ears the tone of the smallest bells.

It is advisable to have ample window openings in the walls at the level of the clavier chamber so that the carillonneur may be afforded all possible opportunity of hearing the small bells.

The higher and more spacious the tower, the better is the musical effect of the carillon.

The development of the modern carillon, *i.e.*, the extended chromatic compass of bells, may be said to have begun about the end of the sixteenth century, and was the work almost entirely of bellfounders in the Low Countries known now as Holland and Belgium. Much interesting information on the history of this development may be found in William Gorham Rice's excellent book, "Carillon Music and Singing Towers of the Old World and the New."

The culmination of that era of carillon-art was reached at the latter half of the seventeenth century, as instanced in the work of Francis and Peter Hemony. In the early eighteenth



Carillon in Frame.

PAGE FIVE



Tower for Carillon.

OBSERVATIONS

- a. Roof opening for exit of sound.
- b. Large window openings.
- c. No louvres in windows.
- d. Girders on thicker part of tower, namely, the set-off.
- e. Bellchamber floor below and independent of main bellframe girders.
- f. Clavier Chamber.
- g. Provision for hatchways in all floors

Carillon Tower-Section showing advisable arrangement.

PAGE SIX

century some quite good work was done, but the craft was already on the wane æsthetically and the carillons possessing any artistic merit which were founded in the following two hundred years were very few indeed. The revival of the craft in the present century to a glory greater than ever will be evidenced later.

It is necessary now to consider the history of bells in England.

The most general use of bells here is for change-ringing, that is, the ringing in full swing of a set of bells tuned to the major scale, in changes, by means of wheels and ropes, with one person to each bell. Eight bells is the number most frequently used, but change-ringing is also practised largely on five, six, ten and twelve bells.

It is interesting to note that change-ringing must have had its inception in England at approximately the same period that saw the beginning of the carillon in the Low Countries, or perhaps a little later; and the earliest change-ringing was practised on five bells only. It is evident that the



Ringing Peal in Frame.

PAGE SEVEN

"Science," as its followers affectionately call it, was firmly established by 1637, for in that year a ringers' society, termed the "Ancient Society of College Youths," was founded by Lord Brereton, Sir Cliff Clifton, and others, and this community is flourishing heartily at the present time.

From its first discovery change-ringing has appealed deeply to the English character, and the "Science" has extended enormously in the number of its followers, in the number and intricacy of the methods of producing the changes, in the skill of the ringers and in many other ways. The art is advancing every year and the rising generation is manifesting an enthusiasm as great as, or ever greater, than that of its predecessors.

The singular fact should be noted here that while there is some interest evinced in certain districts of Wales, Scotland and Ireland, still it is in England mainly where change-ringing has taken root so deeply and spread so widely. In our colonies and in the United States it has never become acclimatised and is at present moribund except for an occasional struggle, when a brave effort is made now and then to galvanise it into life, as for instance at Durban, South Africa, where the Taylor Foundry has recently supplied two ringing peals which were installed under the supervision of that keen enthusiast, Canon Ridout, who is making great efforts to introduce and keep alive the art of Change-Ringing in South Africa.

England, the birthplace of the Science, remains therefore its real home, and consequently it is not a matter for surprise that during the last three hundred years England has come to consider bells as being instruments designed almost entirely for change-ringing, and that the English bellfounders limited their attention to the casting and hanging of bells for this purpose.

The predecessors of the Loughborough foundry in the early seventeenth century, when change-ringing began to take root, were the Newcombes of Leicester, who cast many of the early rings of bells. They were followed in that work by the Watts, the Eayres, and by Arnold, from whom about 150 years ago Robert Taylor acquired the business. Their paramount work

Tower for Ringing Peal.

OBSERVATIONS.

- a. Roof opening for exit of sound.
- b. Large window openings.
- c. No louvres in windows.
- d. Window sills appreciably above main girders.
- e. Girders on thicker part of tower, namely, the set-off.
- f. Bellchamber floor below and independent of main bellframe girders.
- g. Intermediate chamber, acting primarily as a sound-deadening chamber; suitable position for a clock. The floor of this chamber to be entirely independent of bellchamber floor.
- h. Ringing chamber to be well lit and ventilated; the windows preferably above the ringers' line of sight.
- j. Provision for hatchways in all floors.



Tower for Ringing Bells-Section showing advisable arrangement.

through all those years was the founding and hanging of Church bells for use in change-ringing.

This was the situation until towards the end of last century, when the attention of the then head of the Loughborough firm, the late John William Taylor, Senior, and of his two sons and coadjutors, John William, Junior, and Edmund Denison, was drawn to the subject of carillons. It was made evident to them how unsatisfactory were the existing conditions and how impossible it was for those who desired to have a musical and pleasing set of bells of an extended scale to realise their wishes; and a suggestion was proffered by lovers of the carillon-art that, in addition to casting beautiful "rings" of bells, the Loughborough foundry should produce artistic carillons also.

The proposition attracted them greatly, and they attacked it in a thorough and comprehensive manner with all the aid of modern science to help their art. The result has been a triumphant success and has carried the cult of the carillon to a higher plane æsthetically than has ever been possible before, even in its previous palmy days of the late seventeenth century.

In the carillons of Holland and Belgium of the eighteenth and nineteenth centuries, the larger bells had been by no means an unqualified success, but it was in the smaller bells where the founders experienced their greatest difficulties and wherein the musical result was particularly distressing.



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John William Taylor, Sen. (1827-1906)



John William Taylor, Jun. (1853-1919)



Edmund Denison Taylor (1864)

John Taylor (1797-1858) (From an Oil Painting)



Pryce Taylor (1891) Lieut. Leicestershire Regt., in the Great War.

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The Campanile of the Taylor Foundry.

To demonstrate that the difficulties were perfectly solved, the Taylor Foundry in the year 1904 installed in a tower specially constructed in their works a chromatic scale of thirty-seven bells with largest bell of 2 ft. 7 in. diameter, weight 6 cwts. 0 qrs. 7 lbs. (679 lbs.) note c'. The smallest bell weighs only 10 lbs., but the whole range is perfect in tone and tune throughout and has been acclaimed by experts as a "veritable triumph of the founder's art." Since the date above mentioned, three larger bells, g., a. and b. have been added and the number is now forty. With the erection of this carillon the turning point of the art had arrived, and it began to be realised in ever widening circles that it was possible at last to obtain carillons not only as good as the best of the old ones, but even better, the bells being pure and uniform in tone throughout, and with that supreme finish of a delicate perfection of tune which was impossible of achievement in those old days when temperament was vague and indecisive, and when acoustic instruments were crude and unreliable, but which now could be ensured with unvarying accuracy.

Mr. William Wooding Starmer, Tunbridge Wells, who has studied carillons and carillon music deeply, used the words just quoted when he referred to the Loughborough Foundry Carillon in his articles published in the *Musical Times* of April and June, 1915.



William Wooding Starmer, F.R.A.M., Lecturer on Campanology, Birmingham University.

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Mr. Starmer has done and is continuing to do a great work by his writings and lectures in inculcating and encouraging a proper appreciation of artistic bell-music. So important has this branch of musical art become that a Lectureship on Campanology has been instituted by the authorities of Birmingham University, to which Mr. Starmer has been appointed, and Campanology has been made one of the subjects for the Hons. Mus. B. degree-

The late Mr. George Cadbury was early in comprehending the beauty of the perfectly tuned carillon, and he installed a set of twenty-two bells in the tower of Bournville Schools, near Birmingham, in 1906; which set, it is interesting to note, was increased in 1924 to three chromatic octaves, thirty-seven bells, by Mr. George Cadbury, Junior, and further extended in 1925, to three-and-a-half octaves, forty-two bells.

The fame of the Loughborough firm soon travelled to the Netherlands, the home of carillon-lovers, who had been starved of the possibilities of increasing their enjoyment for two hundred years. The Taylor Foundry was favoured with instructions from time to time to send to that country various single bells and also bells to take the place of unsatisfactory ones in carillons; notably, three small bells in 1897 to Middelburg; all of which



proved so satisfactory that in 1911 it sent its first complete carillon to Holland, a small one of two chromatic octaves for Appingedam. A similar carillon followed in 1914 to Eindhoven, and in the same year the carillon of thirty-three bells to Flushing.

The Schools, Bournville, Birmingham.

PAGE THIRTEEN



Town Hall, Rotlerdam.

The terrible years of war intervened and it was not until 1921 that the next Taylor carillon was sent to Holland, but this was the noble one of forty-nine bells for the new Town Hall of Rotterdam, the greatest carillon founded for over one hundred years.

Bennebroek had a small carillon of twenty-three bells in 1923 from Loughborough, and Zutphen a fine one of thirtysix bells in 1924, and special mention should be made of the restoration, in 1922, of the very early carillon of Edam. The greater number of these bells were by Peter van den Gheyn, 1561, and the cracked and unsatisfactory ones are placed in the Edam Museum, new ones taking their place in the tower. The restoration was carried through



The Queen of Holland inspecting the large bell at Zutphen.



The Cathedral, Cobh, Ireland.



Medallion of Philip II of Spain, on Edam old bells.

with every care and respect for one of the earliest of carillons and the result has proved a success both archæologically and artistically.

Ireland possesses two fine carillons— Cobh Cathedral, with its forty-two bells ordered before the war, but not able to be installed until 1916; and Armagh Cathedral's thirty-nine bells in 1921; both from the Loughborough foundry.



The Cathedral, Armagh, Ireland.

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The Portuguese Church, Gloucester, Mass., U.S.A.

The United States of America has begun to take a keen interest in carillons now that it is realised there how wide a field of musical art is made possible by the perfectly tuned Taylor bells. The appreciation of the beauty of carillon music is being helped greatly by the writings and lectures of Mr. William Gorham Rice, Albany, N.Y., U.S.A., historian of the carillon art, who has made an admirable survey of the whole field, and to whose book, "Carillon Music and Singing Towers of the Old World and the New," reference has already been made (extracts from this book are quoted on page 23).

The Portuguese Church in Gloucester, Mass., has gained the distinction of having installed the first true-toned carillon in the United States—a range of thirty-one bells, erected 1922-1923.

Three more carillons were installed by the Taylor Foundry in 1923, viz., at the First Presbyterian Church, Birmingham, Ala.;



St. Peter's Church, Morristown, N.J., U.S.A.

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at the Phillips Academy in Andover, Mass. (extended in 1926), and at St. Peter's Church, Morristown, N.J.

That the interest in the carillon is rapidly expanding in U.S.A. is evidenced by the fact that, at the time of this Brochure going to print, a carillon of forty-eight bells is on its way from the Taylor Foundry for installation at the First M.E. Church, Germantown, Philadelphia, Pa., to be followed, later in the year, by another fine carillon for the City Hall, Albany, N.Y., comprising forty-seven bells with bass bell G. 11,200 lbs. The Albany carillon will be the first civic carillon in U.S.A. and its installation was made possible by the ready response to the appeal made for gifts of individual bells, the whole of the cost of the carillon being quickly raised thereby. Still further carillons



The War Memorial Campanile, Loughborough.



The City Hall, Capetown, South Africa.

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are in progress for U.S.A. at the Taylor Foundry including one of forty-six bells for Christ Church, Cranbrook, Detroit, and another of forty-eight bells with largest bell E_{\flat} , 22,400 lbs., to be installed in Florida for a wellknown American citizen. To house this great carillon a tower of wonderful beauty is being erected which in its peaceful setting, far from the noise and bustle of a great city, will be a fitting home for the finest carillon in the world.

In our own country Bournville has been mentioned, and 1923 saw the building of the Loughborough War Memorial Campanile, and the installing therein of the grand carillon of forty-seven bells.

In the same year, the Memorial Carillon at Mostyn House School, Parkgate, Cheshire, begun in 1922, was completed to three octaves chromatic, consisting of thirty-seven bells.

The City Hall, Capetown, South Africa, possessed a set of five bells sounding the Cambridge quarters and hour, cast at the Taylor Foundry in 1905. To these have now been added, in 1925, thirty-two more bells, viz., one larger, and all the intermediate and smaller bells, to complete a fine carillon of three chromatic octaves.

The voice of the carillon will soon be heard in Australia as in the Taylor Foundry good progress is being made with the grand carillon which was decided upon as the Soldiers' Memorial at Sydney University, N.S.W. This will be the first carillon in the continent of Australasia and indications are not wanting that it will be followed by others in the near future.



Antoon Brees.

Antoon Nauwelaerts.

PAGE EIGHTEEN

Of music written specially for the carillon there is very little, the reason being largely that there are few carillons which contain each exactly the same number of bells, indeed the number varies so widely that each carillonneur is obliged to arrange his music to suit the particular scale and compass of his bells.

On page 22 are three typical programmes—two of Antoon Brees', who played at Loughborough through the whole of the summer of 1924, and one of Antoon Nauwelaerts', who paid a visit to Loughborough in 1923.

An important adjunct to a carillon is a Practice Clavier. Many players desire to practise every day and sometimes as much as an hour or even two hours at a time, and it is disturbing to those within hearing of the bells to listen so long to oft-repeated scale passages and exercises. With the improved Practice Clavier, perfected by the Taylor Foundry, all annoyance to the public is eliminated, and the carillonneur is still able to obtain full practice, on a keyboard with a touch exactly similar to that of his carillon, hammers connected with the keys striking metal bars in place of bells. This clavier can be set up in any convenient place.

It should be added that the Taylor Foundry has now perfected an automatic apparatus of simple construction, on electro-pneumatic principles, which will play any music, from simple melodies to elaborate pieces in two

or more parts; the playing is done in a brilliant and artistic manner, and intricate compositions are possible which are beyond the executive abilities of a carillonneur. The apparatus is easily attached to the bells, occupies small space, and does not affect the playing by the carillonneur; it is far superior to the old-fashioned weight-driven tambour for the playing of tunes mechanically, and eliminates the dangers of the unsatisfactory electric-contact machine. The pieces played are quickly and easily changed

The following is the detailed list of the Taylor carillons recorded in chronological order, and it should be understood that in this list all the bells larger than a c bell of about two tons (4,480 lbs.) are denoted by capital letters (G, etc.), while this c bell and those of less weight and higher note are indicated by small letters, the octaves above by c', etc., and the double octaves c'', and so onwards.



William Gorham Rice Author of "Carillon Music and Singing Towers of the Old World and the New."

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A List of

By THE TAYLOR BELL FOUNDRY,

Date.	Town.	Tower.	NO. OF Bells.
1904-1912	Loughborough, Leics.	The Taylor Foundry.	• 40
1906-1925	Bournville, Birmingham.	The Schools.	42
1911	Appingedam, Holland.	S. Nicholas' Church.	25
1914	Eindhoven, Holland.	Town Hall.	25
1914	Flushing, Holland.	S. Jacob's Church.	33
1916	Cobh, Ireland.	St. Colman's R.C. Cathedral.	42
1921	Rotterdam, Holland.	Town Hall.	49
1921	Armagh, Ireland.	St. Patrick's R.C. Cathedral.	39
1922-1923	Gloucester, Mass., U.S.A.	Portuguese Church.	31
1922-1923	Parkgate, Cheshire.	Mostyn House School.	37
1922	Bennebroek, Holland.		23
1923	Loughborough, Leics.	War Memorial Campanile.	47
1923	Morristown, N.J., U.S.A.	St. Peter's Episcopal Church.	35
1923-1926	Andover, Mass., U.S.A.	The Phillips Academy.	37
1923	Birmingham, Ala., U.S.A.	First Presbyterian Church.	25
1924	Capetown, South Africa.	City Hall.	37
1924	Zutphen, Holland.	The Wine House Tower.	36
1927	Germantown, Philadelphia, Pa.	First M.E. Church.	48
1927	Albany, N.Y., U.S.A.	City Hall.	47
IN PROGR	ESS.		
1927	Mountain Lake, Florida, U.S.A.	Sanctuary Tower.	48
1927	Sydney, N.S.W., Australia.	University.	19 or 54
1927	Cranbrook, Mich., U.S.A.	Christ Church.	46 or 49

A RESTORATION.

1

1922 Edam, Holland.

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Carillons

LOUGHBOROUGH

Scale.			LARGI cwts.	EST I qrs.	Bell. Ibs. Ibs.	
g to c'''' except the two largest semitones	-	-	9	3	24 = 1116	
c to g''' except the two largest semitones	-	-	40	3	17 = 4581	
c' to c''' completely chromatic –	-	-	6	0	11 = 683	
c' to c''' completely chromatic – –	-	-	5	2	0 = 616	
e to c'' completely chromatic – –	-	-	21	I	9 = 2389	
A, B, c_* , and thence chromatic to $e^{\prime\prime\prime}$ –	-	_	67	2	22 = 7582	
Ab, A, Bb, B, c, and thence chromatic to ab"	′ –	_	82	I	14 = 9226	
c to e''' chromatic except two largest semito	nes	-	43	0	14 = 4830	
e, to b, '' chromatic except largest semitone	-	-	25	0	26 = 2826	
e to e''' completely chromatic – –	-	-	19	0	0 = 2128	
b to b'' chromatic except two largest semitor	nes	-	7	0	o = 784	
Ab, Bb, c, and thence chromatic to ab'''	-	-	82	3	16 = 9284	
c to c''' chromatic except two largest semito	nes	-	40	0	15 = 4495	
e to e''' completely chromatic – –	-	-	20	3	23 = 2347	
g, to g, '' completely chromatic –	-	-	15	I	I = 1709	
B to b'' completely chromatic – –	-	-	47	I	21 = 5313	
c bell-then three chromatic octaves in f	except	two				
largest semitones – – –	-	-	41	0	10 = 4602	
B_{\flat} , c, and thence chromatic to b_{\flat} "" –	-	-	59	I	23 = 6659	
G, A, B, and thence chromatic to $g^{\prime\prime\prime}$ –	7 %	-	100	0	0=11,200	
E_{\flat} , F, and thence chromatic to e_{\flat} "" –	-	-	200	0	0=22,400	
Not finally determined when going to press -		-	Not determined.			
Not finally determined when going to press -			Not	dete	rmined.	
b to a'' not completely chromatic –			6	I	24 = 724	

Thirteen Taylor bells—1922. Five Peter van den Gheyn—1561. $\begin{array}{ccc}
6 & I & 24 = & 724 \\
\text{By Peter van} \\
\text{den Gheyn.}
\end{array}$

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Specimen Programmes

	A. BI	REES.		
No. I.	(ANTW	No. II.		
I. The CUCKOO Prelude M	latthias van den Gheyn	1. RUBENS MARCH	B	enoit
 2. HYMNS (a) Abide with me (b) Hark ! hark my soul 	W. H. Monk H. Smart	2. (a) Home, sweet home (b) Auld lang syne		
3. (a) Traumerei (b) Am stillen Herd (Die Meistersin	Schumann Wagner nger.)	3. (a) Serenade (b) Ave Maria	} Schi	ubert
 4. Impromptu Fantasia (C sha 5. IRISH SONGS (a) Killarney (b) Come back to Erin 	rp minor) <i>Chopin</i> — —	 4. SONATA (C major) Allegro risoluto Andante Rondo Turc 5. FLEMISH SONGS 	Ste	viblet
 6. FLEMISH SONGS (a) Lied der Vlamingen (b) De Vlaamsche Leeuw 	Benoit Miry	 (a) 's Avonds als 1k slapen ga (b) Moederke alleen (c) Mijn Moederspraak 	Ver. Hullebr	bulst roeck lenoit
7. FANTASIA No. 3	Benoit	6. FUNERAL MARCH	C.	bopin

A. NAUWELAERTS.

Ι.	PRELUDE				J. S. Bach
2.	MARCH (Tannhauser)				Wagner
3.	ANDANTE (The Surpris	se Sympho	ony)		Haydn
4.	MINUET		Matth	hias van	ı den Gheyn
5.	(a) Heeft het roosje milde(b) Mijn hart is vol verlan	geuren Igen	···· ···		} Benoit
6.	" O Lord, correct me "				Handel
7.	SOLVEIG'S SONG				Grieg
8.	SPRING SONG			1	Mendelssohn

The following extracts are taken from Mr. William Gorham Rice's Book, "Carillon Music and Singing Towers of the Old World and the New."

"It is to the firm of John Taylor & Company, of Loughborough, Leicestershire, England, that credit must go for the first examples of scientifically tuned bells."

"At the second International Carillon Congress, in August, 1925, W. W. Starmer, of Tunbridge Wells, told the congress of carillons and bells in the British Isles. He gave credit to John Taylor & Company, of Loughborough, for the first examples of scientifically tuned bells made in recent years, and said that the Taylor Company either established or rediscovered a method of tuning harmonics, which must have been known to such founders as the Hemonys and van den Gheyn, but which had been lost to the world for at least two centuries."

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1934	Rumson, N.J., U.S.A.	St. George's Church.	25	c,d,e and thence, 42. chromatic to d	0.	0.	4,704
1936	Ann Arbor, Mich., U.S.A.	University of Michigan.	53	ED.F and thence 215. chromatic to gt""	0.	0.	24,000
1936	Springfield, Mass., U.S.A.	Hillerøst Park Gemetery.	25	B,c#,d# and thence chromatic to c# '' 50.	0.	0.	5,600
1937	Luray, Va., U.S.A.	Luray Caverns.	47	A,B,C# and thence chromatic to a ''' 66.	0.	0.	7,392
1.936	Vught, Holland.	New Town Hall.	25	f' - f''' chromatic 2.	3.	0.	300
1.947	Niagara Falls, Ont., Canada.	Peace Tower. Rainbow Bridge.	55	E.F# and thence chromatic to b''' 178.	0.	0.	19,936

