Glass Music World

FALL 2004

A
TUTOR
FOR THE
MUSICAL GLASSES;
CONTAINING,
AN INTRODUCTORY SKETCH OF THE ORIGIN AND PROGRESSIVE IMPROVEMENTS OF THE INSTRUMENT;
SCALES, AND DIRECTIONS FOR PLAYING;
AND A SELECTION OF THE MOST APPROVED
MELODIES OF SCOTLAND, IRELAND, AND WALES,
ARRANGED AS DUETS, ON PROPER KEYS FOR BOTH DIATONIC AND CHROMATIC SETS.
BY JAMES SMITH,
GLASS-CUTTER, AND MANUFACTURER OF MUSICAL GLASSES, EDINBURGH.

"In air the trembling Music floats,
"And on the winds triumphant swell the notes—
"So soft though high, so loud and yet so clear,
"Even listening angels lean from Heaven to hear!"

EDINBURGH:
PRINTED FOR THE AUTHOR,
AND TO BE HAD AT HIS SHOP,
10. NICOLSON STREET.
1823.

INTRODUCTION.

"The man that hath no *Music* in himself,
"And is not moved with concord of sweet sounds,
"Is fit for *treasons*, *stratagems*, and *spoils*.
"The motives of his spirit are dull as night,
"And his affections dark as Erebus.—
"Let no such man be trusted."

MUSIC is the science of sound. Its principles, originally implanted in the human constitution, have ever remained unchanged, and are unchangeable. It is a language natural, and universally understood; and no nation, ancient or modern, barbarous or refined, has ever been found without it. When we reflect how imperceptibly we pass from the sounds of speech to those of song—how early children begin to adapt their little rhymes to time and tune—and how difficult it is to prevent them from applying a kind of instinctive melody to the very lessons they are taught,—we cannot avoid the conclusion, that *song* is no less natural to man than *speech*—that his musical faculties are no less instinctive than those of birds, while his powers are infinitely more extensive and more susceptible of cultivation. Even when madness throws over every other faculty of the soul a darkness that may be felt, she permits the musical to remain in *light*, and the poor maniac sings and plays with as much accuracy, feeling and expression as ever.

Music is either performed by the human voice, and thence denominated *Vocal* Music; or upon an instrument, and thence denominated *Instrumental* Music.

A singer, who has a well-toned voice, an ear feelingly alive to every shade of tune—who, by assiduous application, has rendered himself familiar with every delicacy of intonation, pronunciation and rhetorical delivery—whose soul is fraught with the fire and feeling so essential to the delivery of the combined powers of poetry and music, will produce a deeper effect upon an audience than any instrumental performer,
who, whatever excellence he may attain in the production of *sound*, must always be defective in the expression of *sentiment*. Indeed, his merits may be, not unjustly, estimated in proportion to the ability he possesses of imitating, upon his instrument, the impassioned tones and expressions of the human voice. It was upon this principle that the Violin of the celebrated Tartini was said not to *play* but to *sing*.

The utility of an Instrument, and its adaptation to ordinary purposes, will be in proportion to the extent and accuracy of its scale—the power and sweetness of its tone—its capacity of crescendo and

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History of Glass Music International, Inc.

Part 4 of 6 (1994 - 1995)

— by Carlton Davenport —

The 1994 issues featured a paper entitled *Acoustics of the Glass Harmonica* by Thomas D. Rossing of the Physics Department of Northern Illinois University. This paper had previously appeared in the Journal of the Acoustical Society of America.

The paper began with a brief history of glass music focused on the glass harmonica and glass harp. At the end of this section Dr. Rossing pointed out that attendees at a special session of the 121st meeting of the Acoustical Society of America in Baltimore in 1991, devoted to the acoustics of glass musical instruments, heard performances on a glass harp by Jamey Turner and on a Franklin-type armonica by Alisa Nakashian.

Dr. Rossing next presented an in-depth analysis of the modes of vibration of wine glasses or glass bowls. He pointed out that these can be conveniently studied in the laboratory by means of holographic interferometry. This technique results in interferograms that resemble contour maps and indicate the amount of motion at each point on the glass. He described what happens when a glass or bowl is played by rubbing its rim tangentially with a wet finger. He also described what happens when a glass or bowl is struck with a mallet and when it is bowed radially with a violin bow. He delineated how a moving finger appears to excite vibrations in a glass through a "stick-slip" process much as a moving violin bow excites a violin string. During a part of a vibration cycle, the rim of the

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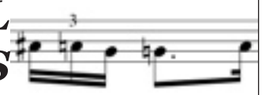
PRESIDENTIAL NOTES



You will find a festival registration form inserted in your copy of this issue of the newsletter. It asks a few questions which we need each member who is planning on attending and/or performing at the Paris Festival to answer in order for us to complete the festival planning process. You can either mail the form to me: Carlton Davenport, P.O. Box 228, Princeton, MA 01541 (USA), or send me an email with the answers to the questions. It is important for me to have all registration forms by 8 October. Thomas Bloch needs the information to complete the festival details, but you should get it to me since he will be traveling through 10 October. I will pass the information on to him.

If you are responding by email, the questions you should answer are: (1) Are you planning on attending the festival?, (2) Are you planning on performing?, (3) How long would you like to play?, (4) Are you planning on taking your instrument to the festival?, (5) Are you planning on speaking at the festival (i.e., should we be scheduling a conference for you?), (6) If you will be speaking, what will your subject be? (Please be specific).

I have some good news for everyone planning on attending the festival! Unlike the Festivals of 1997 and 2000, we have decided that we do not have to charge a registration fee for this festival. Thomas and I will be using the funds that are in the GMI Treasury augmented by having members pay their own way for certain items (example: Bus Tour tickets). We have not worked out all the details of this yet. We are taking certain steps to hold down the festival expenses. For example, Thomas has offered to take care of the programs, name tags, etc., by doing them on his computer. He will have some expenses like good paper for the programs and plastic holders for the name tags and GMI will reimburse him for those expenses.

After he receives the information from our registration forms, Thomas will be scheduling the performances and conferences at the Cite de Musique Museum for the 4th and 5th of February. The Museum is open for visitors from noon until 6 pm. We will probably have two conferences each day between 10 am and 11:45 am. We will probably go out to eat between 11:45 am and 1 pm. Performances and conferences will be scheduled throughout the two afternoons. Participants will have a permanent free access to the Museum and to the instruments research library during the meetings.

In order to communicate as much information as possible before the festival, we will be putting out another issue in November. That issue will include a feature article by Professor Thomas Rossing and another part of the GMI History article.

Glass Music International, Inc.

President – Carlton Davenport
Vice President – Elizabeth Mears
Secretary – Roy Goodman
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Member-at-Large – Thomas Bloch
Membership – Alisa Nakashian-Holsberg

— HISTORY *from page 1* —

glass at the point of contact moves with the finger; during the balance of the cycle it loses contact and "slips" back toward its equilibrium position. This results in a sound that consists of a fundamental plus a number of harmonic overtones, although not nearly so many as the sound of a violin. The location of the maximum motion follows the moving finger around the glass.

He also discussed the selecting and tuning of the glasses and the subject of the loudness and timbre of a glass harmonica as compared with other musical instruments.
In his concluding remarks, he stated that "The glass harmonica has an interesting history, and it is heartening to note the resurgence of interest in recent years. It also has some interesting acoustical features, unlike any other musical instrument I know."

Anyone who would like to obtain copies of the two issues of GMW containing Dr. Rossing's paper can do so by requesting them from Carlton Davenport, P.O. Box 228, Princeton, MA 01541, or through an email to GMIpres@earthlink.net.

In the time since his article appeared in GMW, Dr. Rossing has had a book, *Science of Percussion Instruments*, published. The book contains a whole chapter on Glass Music Instruments. Dr. Rossing has written an article for GMW based on this chapter which will appear in our next issue.

The first two issues of Glass Music World published in 1995 featured an article written by Lynn Drye while she was at North Texas State University. The article, *The Development of Musical Glasses Prior to the Eighteenth Century*, provides a very thorough treatment of its subject and should be a part of the collection of anyone interested in the history of glass music. Anyone who does not presently have copies of these articles and would like some should contact GMI President, Carlton Davenport (GMIpres@earthlink.net or P.O. Box 228, Princeton, MA 01541). A very brief synopsis of this article follows:

Precisely when and where men first began using water-tuned vessels for musical purposes cannot now be determined with any certainty. While it is possible that the knowledge of using water-tuned vessels for musical use may have developed independently in Europe, it is certain that early travelers from Asia carried reports of these musical practices to the west. The origins of musical glasses, from which much later the glass harmonica developed, are most likely found in Asia. It was in Europe that the musical glasses developed into a concert instrument and flourished both musically and socially.

The use of vessels for musical purposes may have existed in Southern India as early as 700 A.D. An instrument called the *Jalatharangini* is said to be mentioned in a Sanskrit work believed to have been written at approximately 700 A.D.

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Associate Editors —
Peter Bennett, Elizabeth Mears
Layout — Jonathan Stuart-Moore

GMI Happenings

– By Elizabeth Mears –

After having played for 7 weeks with Marianne Faithful, Tom Waits and Bob Wilson in the London Barbican Theater in May and June, **Thomas Bloch**, Neuilly Plaisance, France, was invited by Marcia L. Balisciano, the Director of the London Benjamin Franklin House to give a recital in the Candid Gallery on June 21st. He then had a private visit to the House. The purpose of the concert and a photo exhibition dedicated to the Ben Franklin House was to raise funds to open this historic facility to the public. Ms. Balisciano announced that the Foundation just obtained a large grant which will support the project.

Tom Degnan, Philadelphia, PA, plans to be in France this winter in time to attend the glass music festival. He has not received funds from the Franklin Court where he is our representative, so he will "go on my own".

Bob Bray, Wauwatosa, WI is also making plans to be in Paris. He is looking forward to arriving several days early to do some sight seeing then hopes to travel on to Scotland and Ireland when the conference is over.

"I was playing last night on Jackson Square when a pleasant family stopped. The lady said, "My uncle is a glass player". "Really", I said, "where does he live?" "Florida", she responded. "Is your uncle, Jay Brown", I asked? "How did you know", she exclaimed! This anecdote was related by **Peter Bennett**, New Orleans, LA, after which he told her that "there are only about forty serious glass players in the world, ten of whom are Americans and only three of us are stupid enough to try to make a living at it!"

Peter also enjoyed the opportunity to play for the Glass Art Society at their annual meeting which was held in New Orleans this year. Over two thousand glass artists from all over the world attended. The journal of GAS will publish an essay written by Peter on the history and physics of glass music.

BOSE radio will release a new film in October of this year which will be presented in the 24-seat theaters in its 150 retail locations. The purpose of the films is "to prove the power of music to move us in ways that no other language can". A performance of "Carnival" on the Glass Armonica played by **Cecilia Brauer,** of Merrick, LI, NY, is included in the production along with fourteen other performances. Stephen Ruggere, Music Director of BOSE Corporation thanked Cecilia "for giving us such a magical performance!"

Cecilia will not be able to attend the Festival in February, as she has performances of Turandot that week at the Met. This past year, in addition to the presentation in numerous schools of her educational program "Ben Franklin and the Armonica", she performed at gala fund raiser for the East Hampton Historical Society on Long Island and also had the pleasure of presenting a concert in Naples, Florida, with her brother, Raymond Gniewek, former concert master of the Metropolitan Opera Orchestra for 43 years.

Norm and Carol Rehme, Loveland, CO, are realizing a 30 year old dream. He states, "We are headed Back To Our Future": A flexible photography studio/carriage house for Norm, a window banked writing retreat for Carol, and, for the two of them, the sanctuary of a stately 1887 home with arbored grounds. Their new address information is: Norman & Carol Rehme, 1127 N. Garfield Ave., Loveland, CO 80537, Phone 970-669-5791, norm@rehme.com, carol@rehme.com, www.rehme.com.

Jonathan Stuart-Moore, Chapel Hill, NC, was in a "musical situation" this summer, which, according to his mother, **Ann Stuart**, demanded all of his time morning, noon, and night. He was the cellist in the pit orchestra of the College Light Opera Company in Falmouth on Cape Cod, which performs a different musical each week for nine weeks. They rehearsed the next week production in the mornings, practiced in the afternoons, and gave a performance of the current week's musical every evening. The brutal schedule allowed only 20 minutes for each meal. He is certainly learning a repertoire.

Lynn Drye, Prescott Valley, AZ, has now finished her third recording, The Lighter Touch, Vol. III. Included on the recording are pieces for glass armonica, glass xylophone, and musical bowls. Three of the pieces by K.L. Rollig from Kleine Tonstucke fur die Harmonica are also included. Lynn has a correction to the website information which was published in the last newsletter. Her website address is www.glassvirtuoso.us, not .com.

Dennis James, Seattle, WA, has/had the following glass armonica tour appearances:

June 19, Great Lakes Chamber Music Festival, Detroit, Michigan. Glass Armonica appearance with Detroit Chamber Winds and Strings in an eclectic festival program including Jamie Bernstein (Leonard Bernstein's daughter), James Tocco (pianist), and baritone Chris Trakas.

August 22, Chamber Music Festival, Saratoga, NY. Glass armonica performance with chamber ensemble from the Philadelphia Orchestra.

October 2 to 10 – European glass armonica tour with the "Ensemble Schunbrunn". Opening tour performance: Concertgebouw, Amsterdam, The Netherlands. Other tour performances in Deiden; Hoorn, The Netherlands; and Brussels, Belgium.

Clemens Hofinger, Zell, Germany, writes that his most important news is the opening of his own practice as a general practitioner in Wurzburg on the 1st of July. He is right now having a very busy time in medicine, but several upcoming recitals during the winter months, and of course the Paris Festival, will certainly keep him attached to his glasses.

Yours truly, **Liz Mears**, Fairfax Station, VA, is having a very busy year in the glass studio. I am fortunate to be able to collaborate on a body of work with my daughter, L. Lindsey Mears. We had an exhibit of this work open at the Kane Marie Gallery in Virginia Beach, VA, in July and will be part of an invitational glass exhibit at the Alianza Gallery on Newbury Street in Boston beginning in September (for any of you who will be in the Boston area). Other than that, commissions, teaching in the new Washington Sculpture Center, and preparing for two major exhibits in November are keeping me "off the streets and out of the shops".

For Liz becoming a grandmother for the first time on August 1 is the highlight of the summer, however. Miss Marina Elizabeth Mears is definitely the star of the show!

I hope that everyone enjoys a fulfilling and productive fall.

— *TUTOR from page 1* —

Introduction to the Tutorial *by Lynn Drye*

The text from the James Smith "A Tutor for the Musical Glasses" is being reprinted here by permission of Bob and Diane Gravlin of California. They obtained their set of musical glasses (see photos) from a Welsh friend several years ago. The set is in mint condition with all of the original glasses intact. Along with the instrument, there is a booklet printed by James Smith Edinburgh in 1823 and signed by him. The book is a tutor for the instrument, and has instructions on how to play it, a history of the instrument, and some melodies transcribed for it.

One of the diagrams in the tutor shows the layout for a diatonic set of glasses, C to C, 2 octaves. The first row of glasses (farther away from the player) has the largest glass (C) on the right side. There are a total of 6 glasses in the row ending with A on the left side. The second row of glasses (nearest the player) has B on the left side and continues to C on the right side for a total of 9 glasses. Another diagram in the tutor shows the layout for a chromatic set of glasses. This is the same configuration of the instrument owned by Bob and Diane Gravlin (see photo). The glasses are color coded for identification. All the C and C# glasses are red, D and D# are orange, E is yellow, F and F# are green, G and G# are blue, A and A# are the same color, B is another color. There are two water bowls on each end of the row nearest the player.

The entire contents of the tutorial include the following Introduction, Of Elementary Instruction, General Directions as well as the diagrams of the Diatonic and Chromatic sets of glasses, a Time Table, and 23 pages of melodies.

diminuendo—its cheapness—and its portableness.

From a defect in one or more of the above particulars, the construction of a Musical Instrument, from a sonorous body of the most excellent quality, may be completely frustrated. Thus, though bells possess an excellent tone, yet nobody has hitherto been able to reduce them to the shape of a Musical Instrument, adapted in size and price to general use. Till of late the same thing was true of Glasses, though possessing a tone superior to bells, or even to any other sonorous body we have ever heard.

Cheapness, and ease of adaptation, have contributed, not less than the quality of their tone, to render Pipes and Strings
favourite materials for the construction of musical instrument**????** Of the *former* are constructed Organs, Flutes, Bassoons, &c**????????** of the *latter*, Piano Fortes, Harps, &c.

When, or by whom, Glass was first applied to musical purposes, we have been unable to learn; but the exquisite tone produced by drawing a wetted finger round the mouth of a Tumbler did not escape the attention of the ingenious Dr Franklin.

He fixed his Glasses, the smaller within the greater, upon an iron-spindle, which revolved horizontally on brass gudgeon**????** at each end, and was put in motion by the foot, in the manner of the spinning-wheel, leaving the fingers at liberty to produce the tones, from the sides of the Glasses, as they revolved.

The instrument thus equipped, was called by the Doctor the Harmonica—an instrument far surpassing all others in point of tone, but not without some imperfections.

The glasses of the Harmonica are very liable to break. The larger revolve with much greater velocity than the smaller; the foot is apt to tire in turning the machinery; when to this we add the high expense of the instrument, we need not be surprised that it never came into general use.

Dr Cullen of Dublin constructed a set of Glasses in the shape of Sugar Bowls, blown with long plain stalks, which were fitted to wooden feet, screwed in a board, so that the mouths of the glasses diminishing in size as they ascended in pitch, formed a horizontal plane. This instrument, intended as an improvement of Dr Franklin's, he called the New Harmonica; it was subject to the following imperfections: The glasses, arranged in two parallel lines in alternate notes, zig-zag flats and sharps, beginning on the right and ending on the left, were so confused, that it was no easy matter for a performer to find the note he wanted. The glasses were tuned with *water*, which weakens the tone; its evaporation puts the instrument out of tune; its decomposition produces muddy slime, which has the same effect upon the fingers of the performer as grease has upon the bow of a violin-player, and puts him to the disagreeable necessity of often changing the water.

The last improver of the Glasses is Captain Menzies of the Perthshire Militia—a gentleman who, from his infancy, seems to have prosecuted the study Musical Instruments with the most enthusiastic devotion.

He reduced the number of glasses to a diatonic series of two octavos, commencing on low C in the treble, excluding all the notes below as being too hollow, and all the notes above**??????????** ter, which is attended with so many inconveniences, he caused the glasses to be ground (as did Dr Franklin) exactly to the pitch, before fitting them in the frame, which precludes the necessity of tuning ever after.

Captain Menzies, whose instruments have been for some time before the public, not being an artificer in glass himself, of course was obliged to construct his glasses through the agency of an operative workman—a circumstance which must have rendered the tuning of the glasses extremely troublesome and tedious. The Author of this little Work having been regularly bred to the profession of a glass-cutter, performs every operation with his own hand, and manufactures diatonic and chromatic sets of glasses, which, he trusts, will be found, upon comparison, to be more powerful in tone, more accurate in tune, and, at the same time, cheaper than any that have ever been offered to the public.

In this improved state, the Glasses painted and fitted in a handsome frame have a beautiful appearance, are reduced to a portable size and a moderate price; constituting a most

elegant instrument, equally adapted to performers of both sexes, with such a simplicity of scale, that a few weeks' application to the practice will enable a learner to play slow airs in a style**??????????????**

ced performer on any instrument with which we are acquainted. We know that if it be matter of reasonable regret, that this instrument is not adapted to all that rapidity of movement, and articulation of execution, which is so much the rage of the day, as almost to have banished graceful and pathetic melody from our concerts, to make room for a style of music infinitely better calculated to surprise or stupefy an audience than to affect or please them. On this point, we feel something like the celebrated Dr Samuel Johnson, who, being the company with a violin player, whose great ambition was to astonish his hearers by the rapidity of his evolutions upon the finger board, was told by the gentleman who sat next to him that the music was very difficult, and what few performers were able to execute: *Difficult*, do you call it, Sir? exclaimed the Doctor with great indignation; I wish it had been *impossible*.

Although we have heard waltzes performed on them with much brilliancy and beauty, we do not think the glasses naturally adapted for very quick music; but whoever has not heard the old slow expressive soul-subduing melodies of Scotland, Ireland, and Wales, performed upon them, by a player of taste and feeling, can hardly be said to have heard them at all; and he who can hear such a performance without being affected must have no music in his soul:

> They come o'er the ear like the sweet South,
> That breathes upon a bank of violets,
> Stealing, and giving odours—

OF ELEMENTARY INSTRUCTION.

SUCH is the extreme simplicity of the scale of this admirable instrument, that those who understand the Elements of Music are not unfrequently able to play a tune at the very first trial. And as it has hitherto attracted most of its performers from the ranks of those who have been regularly initiated for some other instrument, we do not think it necessary to prefix a Course of Elementary Instructions. Indeed, the limits of our whole plan would hardly be sufficient to explain the initiatory principles to those who have no master; and to those who have this would be superfluous. Every pupil should be most accurately acquainted with the scale—the situation of the tones and semitones— the peculiarities of the minor scale, and the necessity of ascending it in one manner, and descending in another. The scale should also be transposed through every note of the octave, which will afford a clear demonstration of the necessity of those sharps or flats set at the cliff, in order to preserve the semitones in their just relation to the assumed key. A perfect knowledge of *time* is of such essential importance, that it is not easy to overrate its value.

What numbers of performers have we on Piano-Fortes, Violins, Flutes, &c., who can play popular airs, or any piece of music they have got by ear, with very tolerable effect, but who, from a defect in this most capital practical qualification, are little better able to read music *at sight*, than they would be to read Greek or any other language with which they are unacquainted?

It is a subject of just regret, that there is such a general disposition among performers on instruments to overlook the great principles of musical science, and content themselves with that very scanty and limited information requisite to the mechanical production of the tones of their instruments.

No error is more common, or more pernicious in its consequences, that the supposing that every thing in music depends upon what is called a *musical ear*. It is true, no one can be a musician with an ear; but it is equally true, that the have a good ear no more constitutes a musician than the having a good eye constitutes a painter. What is the reason that those who have ears, and *only* ears, when they go to concerts to hear the composition of the best masters performed, are sure to come away disappointed? why, plainly this,—they *hear* them, but they want the science necessary to *under***???????????**
??????????????????????????????????????

composition, —to perceive the adaptation and subservience of every particular part of the general design, —the imagination, genius, and science, displayed in

> "Twisting all the chains that tie
> "The hidden soul of harmony,"—

the easy triumphs obtained over difficulties which, in less skilful hands, would have proved unsuperable—will soon confess that he that only *hears* such a composition has lost by much the better part of it. And what justice are we to expect from the performance of one who can neither feel nor understand those refined and ingenious contrivances of fugue, imitation, canon, &c. with which the works of the best masters are so liberally adorned;—who hardly understands the terms, or has heard of them only by the hearing of the ear; and what a contrast does all this afford to the accuracy and precision of one who can enter into their design, perceive their construction, and who, while he delights to play them, could almost compose them?

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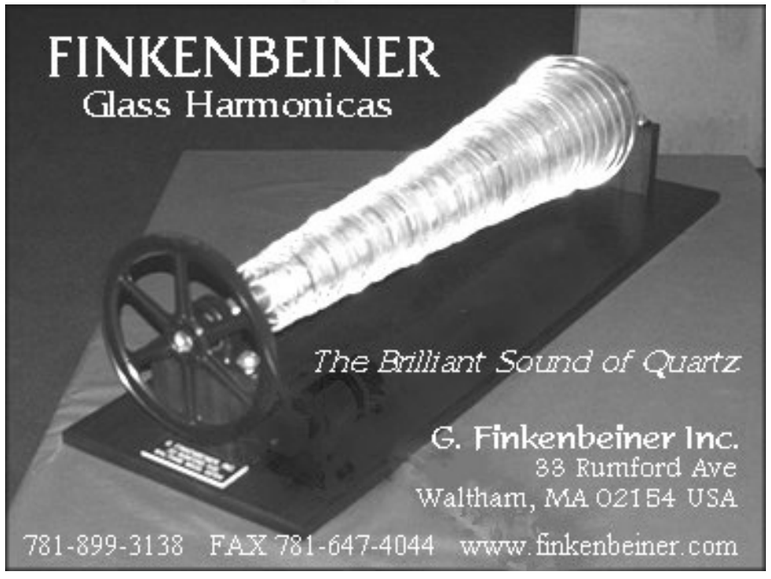

— ***HISTORY*** *from page 2* —

The *Jalatharangini* is a series of cups of porcelain or earthenware which are tuned to a particular scale by using certain quantities of water. The sound was produced by tapping the cups with two bamboo sticks which were covered with felt or tipped with cork.

References to the existence of porcelain cups used for producing music by striking with sticks have been found that describe an instrument that the Chinese had in 1300 which was called the *Shui Chan* and also a similar Japanese instrument known as the *Hi*. References have also been found that point to the existence of "musical bowls" and "musical cups" made of earthenware in Islamic nations including Persia, Arabia, and Egypt during the 14th through the 16th centuries. These cups and bowls were tuned by varying the amount of water in each. These were also played by striking them with sticks or reeds.

The knowledge of these musical instruments certainly spread westward from Asia to Europe. Diderot"s Encyclopedie published in 1756 referred to their use in ancient Persia. Other evidence shows that the practice was known to Europeans even earlier. The practice of striking porcelain cups, full of water, with little sticks was mentioned in the German original of the book The Voyages and Travels of the Ambassadors from the Duke of Holstein to the great Duke of Muscovy and the King of Prussia published in 1647.

It is possible that the knowledge of using water-tuned vessels for musical use may have developed independently in Europe, The earliest record of the use of musical vessels in Europe is found in Franchinus Gaforus's Practica musicae, published at Milan in 1492. It contains a woodcut which shows a Pythagorean experiment; six bells and six musical glasses are being used to demonstrate harmonic intervals. The glasses are filled with water and are being struck with long sticks by individual performers. Another reference to musical glasses is found in G.P. Harsdorfer's Deliciae physicomathematicae, published in Nurnberg in 1677. In it, he refers to "making a cheerful wine music" by filling eight glasses with progressively increasing quantities of wine, and then stroking their rims with a moistened finger.

It was not until the early eighteenth century that musical glasses came into serious musical use in Europe. By the 1730s references were made to using sets of tuned glasses for concert music. The most important person to give serious performances on the musical glasses in Western Europe was an Irishman named Richard Pockrich. Pockrich called the glasses his "angelick organ." He used wine glasses which were tuned with water and fixed in position on a table. Although he probably tapped them with sticks at first, Pockrich is credited with refining the techniques of stroking the rims.

Since their origin, the musical glasses in various forms have existed continuously throughout the centuries until today. In their earliest stage, they were actually cups made of porcelain or earthenware which were struck with sticks. It wasn't until the eighteenth century that the method of stroking the rims of the glasses became popular. Although many of the performances given today are on varied forms of the instrument, the most popular method of tone production continues to be the friction method.

An article entitled, Rebirth of the Glass Harmonica, written by Gerhard Finkenbeiner, was started in the Spring 1995 issue, continued in the Summer/Fall 1995 issue, and completed in the Winter Holidays 1995 issue.

In this article, Gerhard first told how he became interested in the glass harmonica when he saw one of the original instruments while living and working in Paris in 1956. The stories about strangely beautiful sounds intrigued him and later upon hearing the records of Bruno Hoffman, the renowned "glass harp" musician known in the world as the "master of glasses", he was convinced that he should try to build one.

Through the courtesy of Professor Richard G. Weiss, physicist, of Avon, Massachusetts, he was able to obtain a copy of the plans of an 1800 glass harmonica for which he had paid only eight Deutschmarks at the Berlin Music Instrumenten Museum, in Berlin, Germany. He now had the dimensions of the cabinet, a picture of the glasses, the tuning details and a diagram of the rotating mechanism. However, a big question remained – which type of "glass" should he use?

He researched literature on types of glass used for building glass harmonicas from the 18th century, then decided to test as many types of glass as he could find. He tested lead, soda lime, Duran, Pyrex, Nouex, and Vycor. He discarded lead glass since "it is said to poison the player." Of the six types of glass he tested, Vycor glass sounded the best and, on closer examination, did produce a "harmonic tuning." This did seem to point to the conclusion that the purer the glass, the better the sound. However, why not go all the way? That is, "quartz glass" is 100% pure.

Finally, in 1982, after 25 years since the time his interest in the glass harmonica began when working in Paris, the prototype, the Finkenbeiner Glass Harmonica was finished and he was anxious to see the reaction of the public and its musicians to the instrument's sound. At that time he decided to donate the prototype to the famous Boston TV Channel 2 WGBH auction for exposure of his instrument. To his surprise, there was much more interest than he had expected. Through the WGBH auction, his glass harmonica went to the highest bidder at $3,000.00. (Editor's note: GMI Member, Monica Rogers and her mother, Dorothy, were the high bidders). Soon thereafter, an enthusiastic collector of glass instruments in Switzerland, Doctor Walter M. Meyer, Ph.D., who had heard about the WGBH Channel 2 TV auction, purchased one of his instruments.

At approximately the same time, Kenneth Pietrowski, of Rochester, N.H. at the time of the writing of this article, acquired one of his glass harmonicas and performed with major symphony orchestras, including the Toronto Symphony Orchestra in Thompson Hall, Toronto, Canada.

Vera Meyer acquired her instrument from him in 1983 and has performed in many areas throughout the United States as well as in France, Germany, Italy, Switzerland, and Japan. She has given hundreds of performances in all and has made a tremendous contribution to public awareness of the eerie yet ethereal sound of the Finkenbeiner quartz glass harmonica,

During the Glass Music Festival hosted by The Corning Museum of Glass, in Corning, New York, Gerhard met Sascha Reckert, "a gifted musician from Germany who also was interested in making and tinkering with glass instruments." Later on, Sascha spent some time at Gerhard's factory and they exchanged ideas and opinions on various subjects concerning the Glass Harmonica. Sascha was more inclined to use the original type of glass for his glass harmonica, while Gerhard "was more interested to experiment with new and better sounding glasses. Thus, leading me to my use of 'QUARTZ'."

Gerhard stated that the production of Glass Harmonicas had become a financial success for his company and they had been able to reduce the time needed to produce a finished instrument. Previously, their problem was that "the work only began when you thought you had com-

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GENERAL DIRECTIONS.

Stand in front of your instrument, and place a small bason**??????????????????**
sionally as they become dry. Let the joints of your hands and fingers play freely; go round the rims of the glasses with a motion perfectly circular, the fingers following the thumb, and not the thumb the fingers. Take care that the pressure of your finger be not too gentle, which will not produce the tone at all; nor too strong, which will produce a harsh and jarring sound. Touch the small glasses on the very top, but the larger glasses on the side; and the farther from the top in proportion to the size of the glass. A shake may be effected on the glasses by sounding two contiguous notes of the sale at the same time: —Thus, for example, to shake D, first sound E, and while it is sounding put D in motion, which will produce a very good shake.

No general rule can be laid down for fingering:—the best methods can be acquired only by practice. You may practise the scale in the following manner: Sound low C with your right hand, D with your left, crossing your hands alternately in an easy and graceful manner till you come to the top. You may then sound D in alt. With your right hand, B with your left, and so on, coming down in the very same way as you went up. As both hands may be used at once, this instrument

is extremely well adapted for playing Duets. Accordingly, in selecting the airs in the following Collection, we have taken advantage of this circumstance and in general preferred those tunes best adapted for bearing seconds.

For the sake of those who have attained considerable facility on the Glasses, we have set these seconds very *full*; but as young practitioners may find considerable difficulty in practicing them as they are set, we would recommend the following method: At first let the melody *only* be played, adding the second upon slow notes, or, at holds, every successive time more notes may be added as the performance becomes easier. We have left a few blank sets without any second, as an exercise for the learner, who may fill them up with his pen as he discovers them.

To conclude:—The glasses, by stronger and weaker pressure of the fingers, are susceptible of such an exquisite *swell*, and *diminish*, that ladies who sing will find them an accompaniment infinitely more delicate and better adapted for uniting with, and supporting the voice, than any other that has ever yet been tried.

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pleted the instrument." Numerous additional hours of labor are needed after final assembly. (Equalizing timbre, exchanging cups for size, eliminating noises from corks, etc.)

He continued, "At present (1995) we enjoy a better efficiency. We have more cups from which to choose, better noise suppression by improved rotating components; also better tuning procedures, but most of all more experience by myself and my staff at G. Finkenbeiner, Inc. which now produces truly pristine instruments.

The Winter Holidays 1995 issue along contained the article, Thomas Bloch Winner of Prestigious Glass Music Award. Since this is a very short article I will repeat it verbatim:

"A musical composition written for eight Glass Harmonicas, Cristal Baschet and several other instruments won 1st prize recently for best music at the Music Festival for Underwater Films, 1995!

He reports he also has a new recording under the French label (LYRINX) with the Marseilles Opera Orchestra. And he has participated in recordings for film music on disc for Rock Music with the Glass Harmonica, Cristal Baschet & Ondes Martenot for Europe and Japan.

The ten favorites of 1996, he will celebrate in concert in his home town of Colmar, France with his 1000th performance and 20th disc in company with numerous invited artists. The program will be classic, jazz and rock.

The Winter Holidays 1995 issue of GMW also contained an announcement as well as the first detailed information on the next Glass Music Festival to be held in Boston, Massachusetts, U.S.A.., on April 24-27, 1997. This Festival will be a major focus of the next part of the GMI History article which will appear in the next issue of GMW.

Lynn Drye would like to thank Bob and Diane Gravlin for sharing this information with GMI and helping to preserve the history of glass music.