

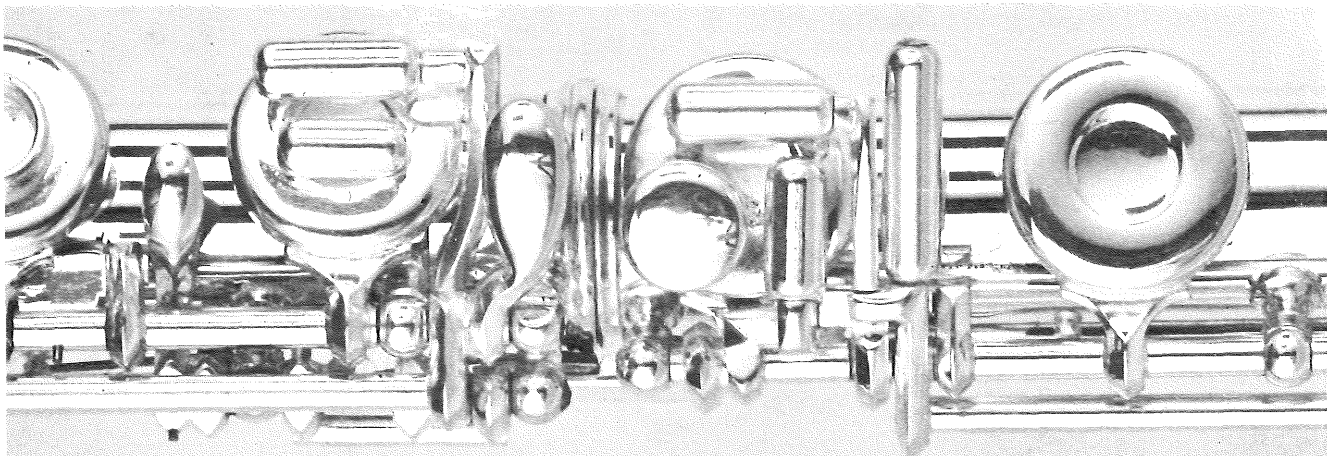
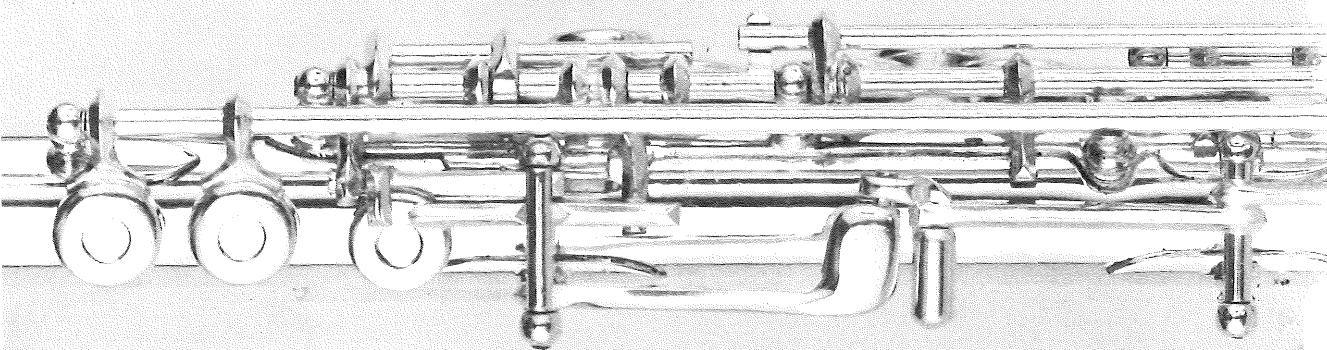
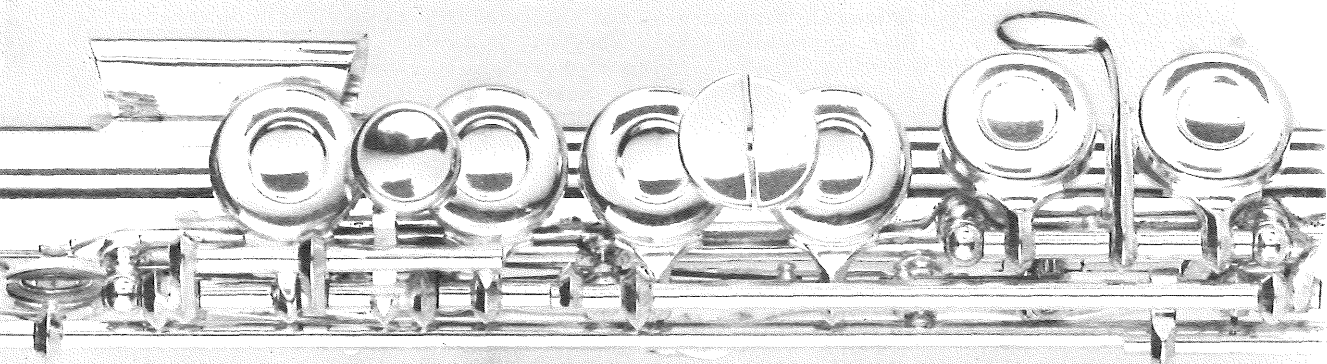
Newsletter

The American Musical Instrument Society

VOLUME 1

JUNE, 1972

NUMBER 3



ANNUAL MEETING

About sixty members and guests attended the first annual meeting of this Society, April 15-16, 1972, at the Smithsonian Institution, History and Technology Building, (Division of Musical Instruments). Due to a bomb scare in the early afternoon of the first day, the meeting was transferred to the Cosmos Club at the kind invitation of Dr. Wesley Oler, and continued there. A social hour which saw musical instruments intermixed with cocktails and conversation that evening was followed by a memorable dinner hosted by Dr. Oler, whose kindness also furnished each table with wine.



Dr. Wesley Oler

Arrangements at the Smithsonian Institution by John T. Feserman and his able staff included such details as water for speakers, audiovisual accessories, signs to point the way to the meeting room, and a gracious hospitality that went far to make this meeting a successful one.



Cynthia Hoover, Arnold Fromme

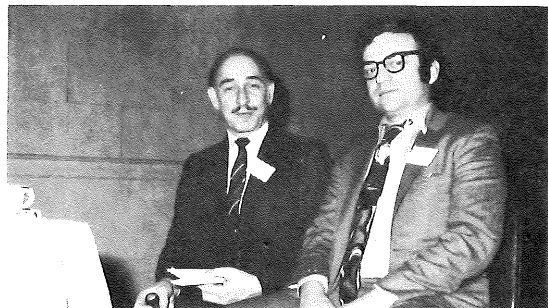
Due to the "bomb scare" which necessitated closing of the entire History and Technology Building to the public, the agenda was changed somewhat but no one was left out. When the members and guests were assembled at the Cosmos Club, having moved there from the Smithsonian, Judy Plant who was to present her keyed bugle performance broke up the audience by remarking that she had thought she was going to "bomb" at the meeting!

At the end of the scheduled activities on Sunday afternoon a delightful "encore" was

offered to the Society by James Weaver who performed upon harpsichords of the Smithsonian Collection which were in the meeting room.

BUSINESS MEETING

A business meeting was held on the first day at which time Arnold Fromme was elected temporary chairman of the meeting with Frederick Selch as acting secretary. A Nominating Committee was appointed with nominations to come from the floor. After consideration it was suggested that nominations be deferred until everyone had a chance to think about the matter and to give the Nominating Committee a chance to meet. Cynthia Hoover gave a report of the Publications Committee concerning the establishment of a formal "journal" for the Society. From her presentation it was obvious that a formal journal is an expensive operation requiring more support in terms of membership than is now available to this Society. Further study will continue on this point.



Arnold Fromme, Mordecai Rubin

NOMINATING COMMITTEE

A committee composed of William Gribbon, Cynthia Hoover, and Dale Higbee met Saturday afternoon and selected the following slate for consideration:

President	ROBERT M. ROSENBAUM (unopposed)
Vice-President	ARNOLD FROMME ROBERT WARNER
Secretary	ROBERT ELLASON LINDA TAUBER
Treasurer	FREDERICK SELCH JAMES M. SWAIN

GOVERNING BOARD (Five to be elected)

Edmund Bowles	David Boyden
G. Norman Eddy	Barbara Lambert
Josef Marx	William Maynard
Harry Moskovitz	Scott Odell
Edwin Ripin	Mordecai Rubin
Frederich von Huene	Cynthia Hoover
Robert E. Cole	William E. Gribbon

Dale Higbee

It was agreed to vote on the candidates by mail ballot, the ballots to be sent out immediately following this meeting to expedite the election. Nominations from the floor were entertained as well as the slate offered by the Nominating Committee. It was subsequently decided to set a deadline of June 15th for the return of the mail ballots.

THE PROGRAM

The official program is listed below. Some change occurred due to the "bomb scare" but the following papers and musical performances were presented. Abstracts of some of the papers are included in this issue; those omitted will be presented in subsequent issues when available.

SATURDAY, APRIL 15

- 10:00-10:15 Introduction
- 10:15-11:00 Dayton C. Miller – *The Man Behind the Collection* – William Maynard, Massapequa, New York
The Dayton C. Miller Collection – James M. Swain, Lake Charles, La., & Linda Tauber, Yonkers, New York.
- 11:00-11:15 BREAK
- 11:15-11:45 *Comments on the Development of the Transverse Flute from the Time of J.S. Bach Until the Acceptance of the Boehm Flute* – Robert F. Cole, Madison, Wis.
- 11:45-12:15 *Variations on a Theme of Theobald Boehm – Demonstration of the Murray Flute* – Alexander D. Murray, Okemos, Mich.
- 12:15-1:30 LUNCH
- 1:30-3:30 Business Meeting
- 3:30-4:00 *The Quality of Musical Performance in By-gone Days* – Robert Sheldon, Washington, D.C.
- 4:00-4:30 *The Keyed Bugle Family – Including a Demonstration* – Judith A. Plant, Brookfield, Wisconsin
- 4:30-4:45 BREAK
- 4:45-5:15 *Musical Instrument and Performance Practices as Reflected in 15th Century Manuscript Illuminations at the British Museum* – Edmund A. Bowles, Falls Church, Virginia
- 5:15-5:45 East Carolina University Collegium Musicum
- Saturday Evening 7:00 *Dutch treat dinner and cocktails at the Cosmos Club, Washington with an informal evening together.*

SUNDAY, APRIL 16

- 10:00-10:30 *What Key is an Instrument In?* – Stewart-Morgan Vance, Louisville, Ky.
- 10:30-11:00 *The Effect of Wall Material on Flute Tone Quality* – John W. Coltman, Alexandria, Va.
- 11:00-11:15 BREAK
- 11:15-11:45 *Ethnic Flutes – Mirror of Mankind* – Betty Hensley, Wichita, Kansas
- 11:45-12:15 *Playing and a Short History of the Heckel-phon* – William E. Gribbon, Greenfield, Mass.
- 12:15-1:30 LUNCH
- 1:30-2:00 *The Identification of Materials Used in Early Keyboard Instruments* – Scott Odell, Washington, D.C.
- 2:00-2:30 *The Johann Carl Kodisch Trumpet in the Stearns Collection of Musical Instruments* – Robert A. Warner, Ann Arbor, Mich.
- 2:45-3:15 *History of the Square Piano* – Robert W. Hobbs, Cheverly, Md.
- 3:15-3:45 *Consort Musik, Cornetto* – Janet Sheldon
Alto Sackbut – Arnold Fromme
Tenor Sackbut – Stewart Carter
Harpsichord – James Weaver
Gamba – Selina Carter

DAYTON C. MILLER—The Man Behind The Collection (abstract)

Dayton C. Miller
(1866-1941)



Dayton C. Miller was a man of extraordinary talents and energies. His life was dedicated to his interests in science and music. In science his research with the Morley-Michelson ether-drift theory brought forth new findings which on at least one occasion was in contrast with work completed by the late Albert Einstein.

Music was an avocation for Miller (although it very nearly became his profession) which consumed countless hours of his life in the pursuit of obtaining the most complete collection of flutes and related materials. The merging of science and music in Miller's life was a reality, and one can see how each discipline was dependent upon the other for research and study. One such example of this marriage was the phonodeik.

"The desire to investigate the physical nature of musical sounds, and the sound-producing characteristics of musical instruments, led to a study of all available methods for recording the forms of sound waves. No device was found which was sophisticatedly sensitive and free from disturbing influences for the proposed investigations, and a new instrument, the 'Phonodeik' was developed."

Born and raised in suburban Ohio, Miller's inquiring mind and research brought him international recognition as a physicist. His renown as a collector of flutes was of no less importance however, and the collection as it now exists at the Music Division of the Library of Congress has no equal.

—William Maynard

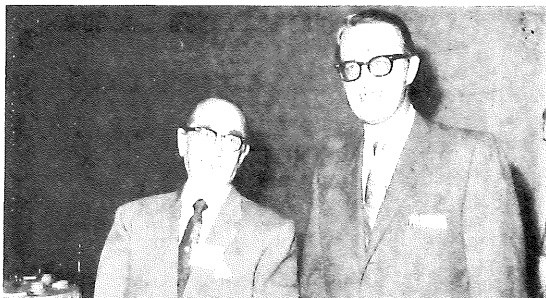
THE DAYTON C. MILLER COLLECTION (abstract)

Over 1500 musical instruments compose the Miller Collection, of which 900 are flutes and piccolos. The other instruments are mainly woodwinds related to the flute family. An examination of the sources of Dr. Miller's collection reveals that fifteen people, dealers, or companies provided 42% of the total collection. The bulk of the collection was acquired from

(Continued page 4)

1916 through 1940, over 85% of the collection having come to Dr. Miller after his fiftieth birthday. The instruments are (currently) in the Library of Congress arranged in the same chronological numbering system that Dr. Miller used during his lifetime. Representative instruments from the collection were shown from 35 mm color slides.

James M. Swain & Linda Tauber



William Kugler, James M. Swain

THE KEYED BUGLE FAMILY – INCLUDING A DEMONSTRATION

Judy Plant provided a spirited demonstration of the keyed bugle following, and including, a dissertation on the place of this instrument in musical history.



Seen in this photograph of Judy Plant are the following instruments: Eb keyed bugle, ca 1845, copper and german silver; brass infantry bugle, 15th Ohio Vol. U.S., Eb cornet, german silver, back-firing; 6-holed rosewood fife.

IAMIC

The International Association of Musical Instrument Collections (IAMIC) is an association formed under the sponsorship of Comité International des Musées et Collections d'Instruments de Musique (CIMCIM) for all who are interested in musical instrument collections. Voting membership is restricted to museums and other public institutions with instrument collections; private collectors, musicologists, instrument makers, and others may join but as non-voting members. A newsletter will be issued concerning musical instrument exhibitions, and activities and publications of museums. Those interested in joining, send \$3.00 to:

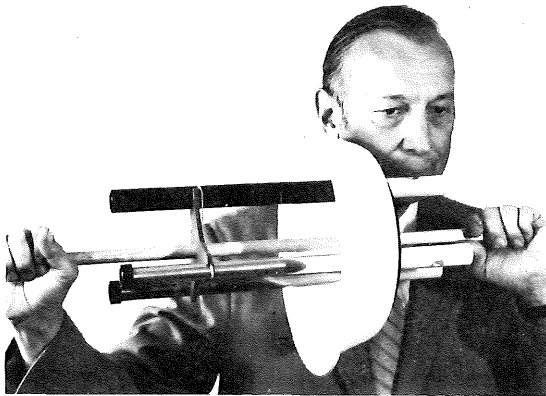
Mrs. Jean Jenkins, Secretary-General of IAMIC, Horniman Museum, London SE 23 Great Britain.

COMMENTS ON THE DEVELOPMENT OF THE TRANSVERSE FLUTE FROM THE TIME OF J.S. BACH UNTIL THE ACCEPTANCE OF THE BOEHM FLUTE (abstract)

This paper was a demonstration in performance of the qualities and capabilities of the one-key, and modern Boehm flutes performing the same or similar selections.

—Robert E. Cole

THE EFFECT OF WALL MATERIAL ON FLUTE TONE QUALITY (abstract)



The role of the wall material in determining the tone quality of wind instruments has long been a subject of argument. Flutes have been made of such materials as wood, bone, porcelain, bamboo, silver, bronze, glass, ivory, jade, gold and platinum, and adherents of one or the other have usually taken strong positions on their relative merits.

Physical studies extending over many years have shown no reason to expect the material to make a difference. There seems to be, however, no record in the literature of objective tests of this question using listeners or players.

To obtain some more definitive evidence on this question, three keyless flutes were made of silver, wood, and heavy copper. The internal dimensions were all the same, and three very short, identical plastic headjoints were provided.

Two experiments were carried out. The first was directed to finding out whether listeners could discriminate among the instruments when played by the same performer. Twenty-seven observers were used, 20 of these being professional or skilled amateur musicians, 13 of them flutists. The tests were conducted by playing the flutes behind a thin screen. In each trial three identical musical phrases were played, twice on the same instrument, and once on a different one. The listeners were asked to identify the position of the unique instrument in the series. Thirty-six such trials were made. One expects a random choice to be correct in one out of three cases. The mean score of the musically trained observers was 12.9 out of 36, the untrained 14.1. A statistical analysis shows that the scores did not depart significantly from

(Continued page 5)

a wholly random distribution.

The second experiment was done with players, using the three flutes mounted in a rack as shown in the illustration. This arrangement prevented the player from identifying the flutes by touch or sight. The player was asked to play the instruments in any order he wished, and select one he thought he could identify from its sounding properties. He was then asked to spin the rack, and find the flute again. Forty-five such trials were made, using four different flutists. None exhibited any ability to find the selected flute. The total number of successes was 12, whereas we expect 15 on the average for a random choice.

Thus, no evidence was found that marked differences in the wall material made a change in the tone that was perceptible either to listeners or players. There are many reasons to prefer certain materials for flute construction; it seems certain that tone quality or responsiveness are not among them.

—John W. Coltman

ETHNIC FLUTES — MIRROR OF MANKIND (abstract)

An excellent way to learn history and to understand various cultures — possibly the best musical pathway — is the study of folk flutes, past and present. These instruments are constructed of a wide choice of materials, and exhibit multiple design, decoration, and tonal possibilities, thus demonstrating the tremendous creativity and resourcefulness of mankind.

Only the drum and harp can rival the flute for historical longevity. The flute is virtually universal, but many cultures have had no harp. Few have been without the whistle or flute. The limited pitch differential and lack of melodic line of the drum restrict its use as a key to understanding the culture from which it developed (the talking drum of Nigeria would be an exception). The choice of materials and decorations reflects the natural life style, values, and level of development of a culture. The materials, design, and construction also show popular movements and historical contacts of peoples.

Music and religion frequently have been intertwined, and this has surely been true with primitive flutes. Certain widely separated primitive societies, for instance, have the nose flute for the performance of sacred music.

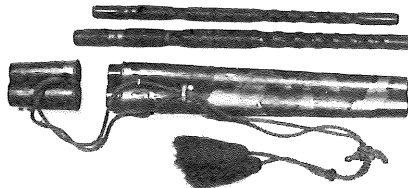
The spoken language often bears upon the folk music, both in pitch progressions and in positioning of musical accents. Furthermore, the folk music of a people and the flute construction to provide the proper intervals is often interwoven, so that it becomes necessary to have the correct music to play the instrument properly. Which came first, the instrument or the music? Nobody knows.

Proper posture of the instrument in relation to fingers, lips, and nose is a part of proper tonal production. A search for sculptures,

paintings, or prints thus becomes a part of the project.

Our lack of appreciation of the unsophisticated instrument is frequently based on cursory examination and blowing not related to the actual music for which it was intended. Ethnic recordings are alerting us to the great skill of native artists.

Such wide ranging inter-disciplinary study is in its infancy, and as the world becomes ever more homogenous, standardized, and mass-production minded, the urgency for speedy research is evident.



Among the many exotic instruments displayed and played is Japanese Koma-bue and Ryuteki in lacquer case with bird design winding around the case. The central bird is in gold leaf. The instruments are of bamboo wound with lacquered cherry strip bandings. This instrument is 250-300 years old.

—Betty Hensley

THE HISTORY OF THE SQUARE PIANO

Although the evolution of the square piano parallels that of the wing-shaped grand piano, there have been some interesting differences. Cristofori originally adapted a harpsichord for his invention of the forte-piano (1709), but soon afterward, the principles of the forte-piano action were applied to the clavichord resulting in the square piano. The earliest known example of a square piano was made by Söcher and is dated 1742. The action used in early square pianos is much simpler than Cristofori's action, and was similar to the action described in 1763 by Schröter, who claimed to have invented it in 1717. Zumpe, a Saxon refugee began making square pianos in London about 1766. Zumpe pianos became very popular; square pianos owed their popularity to their simplicity and economy of both space and cost.

The square piano reached maximum popularity in the United States, where Charles Albrecht and Benjamin Crehore were two of the most important builders in the first years of the nineteenth century. The further development of the square piano is very similar to that of the grand piano, with some important innovations being applied to the square before being applied to the grand, such as, for example, the use of an iron plate in 1825 by Babcock. The square "grand" produced in 1855 by Steinway had a full cast iron plate and made use of overstringing.

Public demand for mellow as opposed to
(Continued page 6)

transparent tones, and for a wide dynamic range eventually caused the square piano to be made as heavy and as large as grand pianos. The action used in square pianos also became as complicated as that used in grands as public demand for virtuoso technique increased. Shortly after the Civil War the square piano was replaced by the upright as the most popular style of piano, and by the 1890's was obsolete.

—Robert W. Hobbs

VARIATIONS ON A THEME OF THE OBALD BOEHM DEMONSTRATION OF THE MURRAY FLUTE

(Cover picture and abstract)

Illustrated on the front cover of this issue are three portions of the Murray flute, an interesting variation on the Boehm keywork developed by Alexander Murray and detailed in the following paper. Due to the great interest that has been expressed in this instrument the following paper is presented in unabridged form together with illustrations and charts. Acknowledgement is hereby made to the W. T. Armstrong Company of Elkhart, Indiana for the use of their photographs of the Armstrong prototype of the Murray flute.



Harry Moskovitz, John Coltman, Alex Murray

THE MURRAY FLUTE

Since the appearance of Philip Bate's¹ book on the FLUTE with a brief reference to a non-published article in the *Instrumentalist*, I have received a number of inquiries about my instrument. To solve the problem of answering each one individually, I will try to retrace briefly the steps which led me to my present instrument, to enumerate its advantages and disadvantages, and explain in what way it differs from the standard Boehm flute.

Until 1948 when I joined the Royal Air Force Band, I played on what is the commonest form of the Boehm flute, the closed $g^\sharp$ instrument. At this time I read Boehm's account of his instrument with Dayton Miller's commentary and decided that the open $g^\sharp$ was a more rational system for at least four reasons.

- i) The duplicate $g^\sharp$ hole was unnecessary.
- ii) The spring of an open key is lighter than one required to hold the key closed.
- iii) Top e is greatly improved when correctly vented with the a hole alone, and not the a and $g^\sharp$ holes together as on the closed $g^\sharp$.

- IV) One finger one key (pad) on g

I consequently asked a flute repairer to alter my instrument to the open $g^\sharp$ and after a few weeks practice I found the readjustment amply rewarded.

The asymmetrical use of the little fingers, in particular the necessity for maintaining the right little finger down much of the time struck me as undesirable and I experimented with an open $d^\sharp$ by turning the foot-joint until the $d^\sharp$ hole was within reach of my little finger. I unhooked the spring and maintained the key open with an elastic band. The flute became a little unstable to balance but I solved this by sticking a wedge of cork on the body above the right thumb. (I no longer require this crutch, having learned to balance the instrument without it.) I felt that the action of the key was an improvement on the closed $d^\sharp$.

At that time I was fortunate in meeting Albert Cooper, an artist-flute-maker, formerly of Rudall Carte who had left them to begin making flutes on his own. He agreed to construct a new foot joint which would convert my flute to open $d^\sharp$.

The $c^\sharp$, d , and $d^\sharp$ holes were placed in line from an axle on the near-side of the flute; the $d^\sharp$ key was closed by both of the other keys. The problem remained, how to trill c - d or $c^\sharp$ - d . When the little finger was removed from c or $c^\sharp$, $d^\sharp$ was the note that sounded. In order to circumvent this, a crescent-shaped key was built from the d key around the front of the ring-finger key. (I still use this mechanism on the piccolo.) This finger could then close both keys simultaneously when required, giving $d^\sharp$.

Later it was found better to have two parallel rollers so that the ring finger could move easily from d to $d^\sharp$, in the same way as the little finger moves from c to $c^\sharp$ on a flute with two rollers on the foot-joint.

Once above d , the little finger is only required for d an octave higher. This led to the construction of a little finger key for $f^\sharp$, with several advantages. When $f^\sharp$ is fingered in this way, all holes below the $f^\sharp$ hole are open. A good trill for e - $f^\sharp$ is provided with no change of fingering (for $f^\sharp$) and by splitting the a key (so that the b hole can remain open when the $b^\flat$ hole is closed) and connecting the lower key to the $f^\sharp$ lever, the correct venting for top $f^\sharp$ is made practicable (comparable to top e on the open $g^\sharp$).

The other notes which needed improvement were those using the small $c^\sharp$ hole. The multiple functions of this hole are:

- i) a tone-hole for $c^\sharp$, 3 , and 4
- ii) a vent-hole for d_2 , 3 , 4 , d_2 $g^\sharp$ 3 a^3 $b^\flat$ 3 .

As Boehm pointed out, some compromise in its size and position is inevitable.

On many flutes the interval $c^\sharp$ - $d^\sharp$ requires careful blowing to produce a whole-tone acceptable to the ear ($c^\sharp$ has to be flattened and $d^\sharp$ sharpened, an unhappy juxtaposition of compensations). After several experiments a relatively simple mechanism was devised to

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¹New York, W.W. Norton and Co., 1969

²Theobald Boehm, *The Flute and Flute Playing*, 1871. Second English translation, Cleveland, Ohio, Dayton C. Miller, 1922.

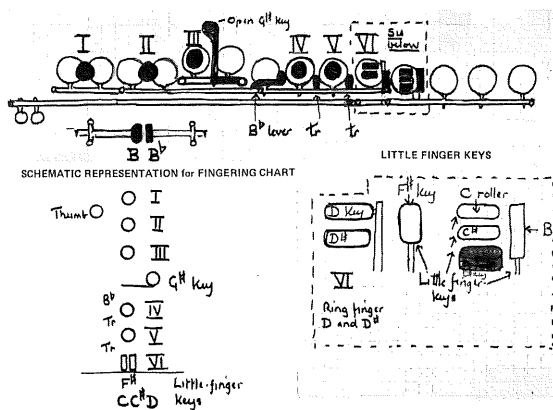
divide the functions between two holes — a large c# tone hole and a small d vent. This entailed no change in fingering apart from a reversal of the Briccialdi thumb keys and a return to the more rational order originally used by Boehm (b# nearer the head joint).

The necessity in the top octave of putting down the right little finger for top b was obviated by linking the lower trill key to the d key. This automatically closes the d# hole when b is fingered normally. The effect on the trills is unnoticeable.

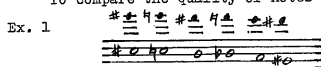
With these slight mechanical and fingering changes it has become possible to construct instruments with the hole placing correctly determined by the use of Boehm's schema, without compensatory shifts of hole position to humor "bad" notes.

Without the skill, patience and insight of Albert Cooper, this flute would not be in existence. Inevitably he has been inundated with work and has a seven-year waiting list for his instruments. I have been most fortunate in meeting those responsible for manufacturing Armstrong flutes. The foreman, Jack Moore of the Heritage division, accepted the challenge of making a similar flute with certain slight mechanical improvements over my present one (my eighth) which I hope will embody the final form of the Murray flute.

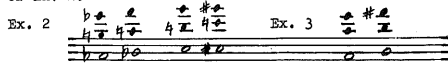
The following is an exact reproduction (in reduced form) of the Schema and fingering chart; also follows his data regarding the above story.



To compare the quality of notes in the top octave.



Finger high d#; blow with insufficient speed to sound d#, try to sound g# (low) as fully as possible. Retaining the same fingering, alternate between the two notes slowly at first, then as rapidly as possible. Keep breath and lip-movements down to the minimum. Repeat with the other notes of Ex. 1.



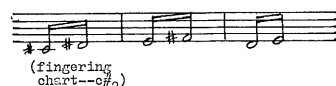
See what "undertones" can be produced from the notes of Ex. 1 in the middle octave. They will probably correspond with the additional notes in Ex. 2 and 3. The ease of sounding of the second octave note detracts from the facility of the top octave causing such combinations as the following to be unduly difficult with normal fingerings. (Compare the same sequences a semi-tone lower).



To note the improvement made by the proper venting, place a small wedge of cardboard over the g# hole in Ex. 4, the b hole in Ex. 5.

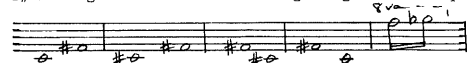


There is no difference in fingering for use of c#-d# mechanism. The following trills are properly vented.



Fingering differences

F# is fingered with the little finger right hand except



when the normal Boehm fingering is employed.

The little finger is free of the d# key except

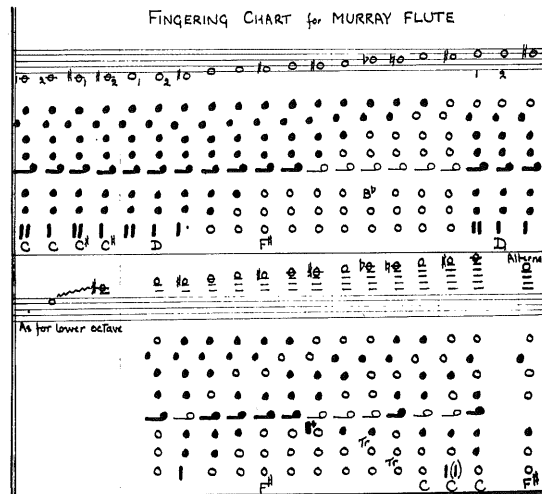


For top c, c# and d, the foot keys are employed as on the Boehm flute.

The ring finger d key is employed in F, G, G, D and A major (compare the use of the Briccialdi in flat keys) and in d, a, b and f# minor (harmonic).

In the chromatic scale from low c, the c and c# are played in the conventional way with the little finger; d and d# are played with the ring-finger.

FINGERING CHART for MURRAY FLUTE



Example of advantages conferred by Murray System.



(Reproductions continued next column & page 8)

SCHEMA to SHOW VENTING of TOP OCTAVE

	MURRAY						Closed G ^H BOEHM		
Tone holes	C ⁸	C	B	B ^b	A	A ^b	C ⁸	C	B
C ⁸	○	●	●	●	●	●	○	●	●
C	●	○	●	●	●	●	○	●	●
B	●	●	○	●	●	●	○	●	●
B ^b	●	●	●	○	●	●	○	●	●
A	●	●	●	●	○	●	○	●	○
A ^b	○	●	●	●	●	○	○	●	○
G [#]	○	○	○	○	○	○	○	○	○
G [#]	○	○	○	○	○	○	○	○	○
F [#]	○	○	○	○	○	○	○	○	○
F	○	○	○	○	○	○	○	○	○
E	○	○	○	○	○	○	○	○	○
D [#]	○	○	○	○	○	○	○	○	○
D	○	○	○	○	○	○	○	○	○
C [#]	○	○	○	○	○	○	○	○	○



COLLECTION DATA

William Lichtenwanger, Reference Department, Music Division, Library of Congress, Washington, D.C. 20560, would like up-to-date information concerning collections of musical instruments. Bill has a large list of collections but the list is not complete, may not be current (collections do tend to increase or decrease in size), collectors may have moved to an unknown address, etc. It is urged that members of this Society who are willing to be listed, please contact Bill at the above address. If your collection has changed significantly since you last wrote to Bill, let him hear from you again. He is also interested in hearing from our Canadian friends in the collector world.

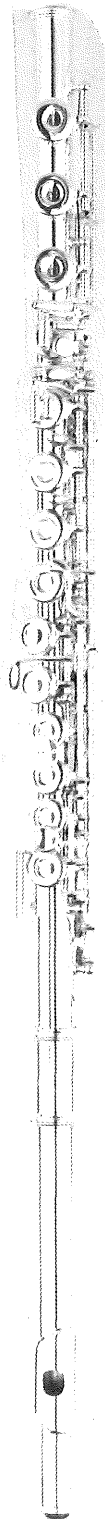
FLUTE WANTED

Harry Moskovitz, P.O. Box 222, Forest Hills, N. Y. would like information from anyone who owns a Clinton Equisonant silver flute. Harry has the body of one of these but would like to have details concerning the construction and appearance of the foot joint. Anyone having this knowledge, please contact Harry.

PHOTOGRAPHS

Photographs taken at the Annual Meeting in this issue of the Newsletter are due to indefatigable Linda Tauber and her omnipresent Polaroid camera.

The W T Armstrong Prototype of the Murray flute



The W T Armstrong Prototype of the Murray system piccolo

