

Franklin Gazette

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"Here comes the orator with his flood of words and his drop of reason." - *Poor Richard*, 1735

President's Message

by Ralph Gregory Elliot

Trivia question: What do Benjamin Franklin, author of *Poor Richard*, and Heinrich Heine, the German lyric poet, literary critic and essayist, have in common? Trivia answer: they both lived on Craven Street in London. Heine lived just a couple of doors from Franklin, but the two had nothing to do with each other: Heine was born seven years after Franklin's death, and came to England briefly in the late 1820's.

I came upon these facts this July as I paid a visit to Craven Street while walking along the Embankment from Somerset House to Westminster Abbey on a sunny day in London Town. I had spied the Craven Street sign the day before as my Art Bus turned from Northumberland Street onto the Embankment en route to the Tate Modern, refreshing my recollection of how to access the now partially-closed street last visited on the Friends' 1997 London tour.

Because my visit was impromptu and unheralded, I didn't get into the house, which in any event is not yet open to the public. No one appeared to be working on or in the premises, but the absence of the scaffolding I recall from 1997 bespoke word that the structural stabilization work had essentially been completed. It appears, however, that it will be some time before the house will be ready to receive visitors.

The importance of the house on Craven Street cannot be gainsaid. While Philadelphia has done wonders

with the steelwork outlines of Franklin's home at Franklin Court, the house itself no longer exists, and neither does his early home in Boston or the house in which he dwelt during his Paris embassy. We are awash in sites, but without structures. Craven Street alone remains, constituting his home and office during those 16 eventful years of his tenure as lobbyist-in-chief for Pennsylvania and other American colonies, juggling the always delicate roles of humble petitioner and assertive colonial champion to a Court and Parliament largely unperceptively obtuse.



1864 Bronze Franklin Medal
from The Medals of Franklin
by Phil W. Greenslet

In the almost 250 years since his days seeking changes to avert a breach between mother country and colonies, history records no similar example of so sustained an effort by a subject people to maintain their connection with the imperial power.

In the law, what Franklin spent 16 years doing is today called "exhaustion of remedies": he tried every means of reason and suasion to accomplish the goals of his clients in America. Only when all his efforts proved to be for naught did he return in 1775 and the ultimate severance was wrought.

Thus it is that the efforts of Franklin over 16 years in England served as the basis for a central part of the Declaration of Independence:

In every stage of these oppressions we have petitioned for redress in the most humble terms: our repeated petitions have been answered only by repeated injury.

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P.O. Box 40048
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215-BEN-0300
(215-236-0300)
Fax: 215-440-3423
email: fof@benfranklin2006.org
Website:
www.benfranklin2006.org

Ralph Elliot, *President*

Alison M. Lewis, *Editor*
alewis@amphilsoc.org
215-440-3444

Claude-Anne Lopez,
Co-Editor

Newsletter Coordination:
Kathleen DeLuca
Roy Goodman

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President's Message

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Nor have we been wanting in attentions to our British brethren. We have warned them, from time to time, of attempts by their legislature to extend an unwarrantable jurisdiction over us. We have reminded them of the circumstances of our emigration and settlement here. We have appealed to their native justice and magnanimity, and we have conjured them by the ties of our common kindred to disavow these usurpations, which would inevitably interrupt our connections and correspondence. They, too, have been deaf to the voice of justice and of consanguinity. We must, therefore, acquiesce in the necessity which denounces our separation, and hold them, as we hold the rest of mankind, enemies in war, in peace friends.

The house on Craven Street is not, and should never be, a shrine. It was simply Franklin's home and office. But it is to be devoutly hoped that when it is finally opened to the public, it will feature displays in all current modes and media to emphasize, with fidelity to precise historical fact, the efforts at avoiding the breach that the American Revolution ultimately represented; the value of efforts in every field of endeavor to achieve justice by means short of war; and the importance of developing in all of us — both those in the public sector and those in the private — the skills of negotiation and persuasion necessary to achieve just ends without violent means.

George Bernard Shaw once said that the American's answer to every disagreement is a punch in the nose. Franklin showed that a punch in the nose is a last resort; and the American cause in the eyes of a watching world was the more reasonable, responsible and justifiable because of the efforts he had made while on Craven Street.

Franklin Tidbits

Franklin articles. Several more articles about Franklin have been brought to our attention. Friend of Franklin **Carla Mulford** wrote a chapter entitled "Benjamin Franklin and the Myths of Nationhood" for the book *Making America/Making American Literature: Franklin to Cooper*, edited by A. Robert Lee and W.M. Verhoeven. Atlanta and Amsterdam: Rodopi, 1996, pp.15-58. It discusses the role Franklin played, in both life and death, in helping to define the United States as a nation. She also penned "Figuring Benjamin Franklin in American Cultural Memory" for the *New England Quarterly*, v.72, no.3, September, 1999, pp.415-443. This article discusses representations of Franklin (in illustrations, medallions, literature, etc.) and the role they played from 1840-1869, a time period crucial for the construction of the American idea of nationhood.

Jessica Riskin has written two articles concerning Franklin and electricity: "Poor Richard's Leyden Jar: Electricity and Economy in Franklinist France" appeared in *Historical Studies in the Physical and Biological Sciences*, v.28, pt.2, 1998, pp.301-336 and examines "continuities between Franklin's electrical science and his moralist arguments in order to propose that Franklinist natural philosophy was teleological." She also authored "The Lawyer and the Lightning Rod" in *Science in Context*, v.12, no.1, 1999, pp.61-99 which examines a legal case from France in 1783, in which a man was ordered to remove a lightning rod from his chimney. His defense lawyer was Maximilian Robespierre, who made a name for himself by winning the case. Although Franklin does not figure prominently in the latter article, it still draws on Franklin's ideas and explanations for the efficacy of his invention, and is of great interest for the setting of a scientifically-based legal precedent.

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Franklin Tidbits

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Franklin Papers editor and stalwart Friend of Franklin, **Ellen Cohn** published a paper entitled "Benjamin Franklin, Georges-Louis Le Rouge and the Franklin/Folger Chart of the Gulf Stream in *Imago Mundi: The International Journal for the history of Cartography*, Vol. 52, 2000, pp.124-142. This paper recounts Franklin's collaboration with Le Rouge, a Parisian cartographer, from their first meeting in 1780, and pieces together the history of the French version of Franklin's Gulf Stream chart. Evidence suggests that the map was produced for French merchant and packet captains in the months following the end of the American War of Independence.

Franklin in Contemporary Culture – A Report from Philadelphia. The July 2, 2000 issue of the *Philadelphia Inquirer* magazine section featured imaginative responses to a question posed to several Philadelphia-area artists: "What's the perfect souvenir of Philadelphia?" It was interesting to see how often the image of Benjamin Franklin cropped up in their creations! Linda Carr created a 22-inch doll of Franklin, in traditional knee breeches, lace cravat, and knee-length overcoat, but sporting a Phillies cap and a Franklin Institute T-shirt, and carrying soft pretzels, a cup of Wawa coffee, and a *Philadelphia Inquirer*, in addition to a red, white, and blue kite. She called it *Ben the Happy Tourist!* Richard Watson produced an acrylic painting/collage, intended to function as a poster of the city, entitled *Come See...* It incorporated famous Philadelphia images, including the Liberty Bell, the LOVE statue, Bill Cosby, William Penn atop City Hall, and, of course, Franklin. The most delicious offering came from Eric Boerner, the executive pastry chef at the Westin Philadelphia. He created a foot tall and 15-inch wide confection entitled *We the People*. Entirely edible, the piece was constructed of chocolate, sugar, peanut brittle, caramel, and marzipan. It featured a bust of Franklin, with the Declaration of Independence behind him, and a miniature reproduction of the city skyline in front of him.

The Philadelphia Fringe Festival has been bringing alternative, cutting-edge arts performances to our fair city for four years now. This year's festival, which ran from September 1-16, 2000, was bigger, longer, and better than ever before. One of the things that made it a happening scene was the inclusion of a glass armonica artist in this year's line-up! **Dean Shostak** played the armonica in concert with Kelly Kennedy on voice and strings in six performances.

Franklin in Film. *The Real Ben Franklin*, a new 20-minute film depicting the life of Franklin was selected to be permanently installed at the **Franklin Court Museum** in Philadelphia. It was produced by Mt. Lebanon, Pa.-based Argentine Productions in cooperation with the Dis-

covery Channel. The film includes new scenes in addition to footage adapted from the award-winning 1996 production of the same name that aired as part of the Discovery Channel's series *Rediscovering America with David Hartman*. Many interesting facts about Franklin are explained via narration, re-enactments, and artwork. Locations for original filming include Philadelphia, Boston, Mystic (CT), and Pittsburgh. According to Hartman, who reprises his role as host for this film, "It is a personal privilege to be able to present the life and great work of Dr. Franklin to visitors from all over the world, so that they can be inspired, as I was, to respect and make the most of the freedoms and opportunities that he helped to create for us."

News from The Franklin Papers Project

Two New Kids on the Block

By Claude-Anne Lopez

Over the course of this past year, Ellen Cohn took an important further step in her leadership of our Franklin publication enterprise: the hiring of two new people to fill the vacancies in the Yale team.

First came **Judy Adkins** who hails from Charleston, S.C., graduated from Duke University in 1988 with a major in English and History and spent a year working in a law firm while deciding what she wanted to do in life.

What she decided was to enroll in the Yale Graduate School as a student in American History. Her doctoral dissertation, written under the direction of Prof. John Demos, was about animals in early America. There followed a position in the acquisitions department of the Yale University Press, where she worked for an editor concentrating on the fields of education, psychology, and sociology. A nice job, but still she yearned for a chance to do research and to write, which is how Ellen managed to snatch her over to the Sterling Memorial Library. Judy is now in charge of verifying texts, and researching and annotating correspondence from Franklin's friends in England and America.

Blair Darney grew up in Portland, OR, majoring in French and Political Science. In 1996, she joined the Peace Corps and spent the following three and a half years in the northern part of Senegal, West Africa, where she trained local women to educate their peers on a variety of public health topics, all in the local language, Pulaar. Blair used her fluency in French when communicating with Government officials.

Upon her return to the US she settled in New Haven, and Ellen hired her last January as the Administrative Assistant in the Franklin Papers office. She replaced Kate Ohno who has moved up to an editorial job. In addition to administrative tasks, Blair also does proofreading and some research that will serve as a basis for annotation, where her French is an asset. Although Blair will be enrolled in the Yale School of Public Health this fall, she will continue to work part-time at the Franklin Papers.

Benjamin Franklin, Magician? by Paul Pasles

In the final year of his life, Ben Franklin was living with his daughter's family on Market Street in Philadelphia. 1790 was also the year of the first U.S. Census. That census was conducted by order of Article I of the Constitution, a document whose passage owed much to Franklin's well-reasoned support. And as one of the world's first demographers [1], he would have taken a keen interest in the census results.

In those days, the survey was not very detailed; it counted the number of people in a household and catalogued them by gender, nationality, slave or free status, etc., but it would be another half-century before the census asked for each person's occupational category [2]. Nevertheless, I wonder, what would Ben have listed as his occupation? Many titles and trades spring to mind: author, scientist, inventor, diplomat; not to mention postmaster, library founder, almanacist... Most likely he would go with "printer," of course. To this list I would like to add one other possible vocation: *mathematician*.

That Doctor Franklin was possessed of a wide variety of interests, both academic and otherwise, is well-known, but that is not so striking as the fact that he *excelled* in so many of those pursuits. Mathematics is a case in point. In the eighteenth century, America was still a century away from becoming a "world power" in mathematics; yet, in that vacuum stood Dr. Franklin, whom I have called the "reluctant colonial mathematician." [3]

Readers of the *Autobiography* may recall the passage wherein, bored with proceedings at the Assembly, Franklin says he drew "magic squares or circles" to occupy his mind. Van Doren's Pulitzer-prize winning biography *Benjamin Franklin* goes into greater detail. It includes a full account of two visits to the home of scientist

James Logan, wherein the two men perused several mathematical classics. The first of these volumes was Frénicle de Bessy's encyclopedic listing of the 4 by 4 magic squares (all 880 of them!) [4]. These are arrays of

7	14	4	9
15	6	12	1
2	3	13	16
10	11	5	8

Figure 1: Frénicle Square #880.

numbers such as Figure 1 in which each row, each column, and each diagonal adds up to the same sum—in this case, 34. Such configurations date back at least as far as the thirteenth century, when they were believed to possess magical properties.

Such a design may appear at first glance a mere "trinket" or curiosity. In fact, magic squares are still the subject of research, despite their long history. For example, a current open problem asks [5]: is there a 3 by 3 magic square whose entries are distinct *perfect squares* (like 1, 4, 9...)? This last problem has stumped many great minds. Current efforts to solve it lead to the theory of elliptic curves (not to be confused with ellipses), the deep branch of mathematics which was used to settle Fermat's Last Theorem.

Thus, the study of the "magic square"—which is purely theoretical and apparently useless aside from its role as an intellectual stimulant—is still a topic of intense interest in mathematics today. This only magnifies the accomplishment of a man who drew them as effortlessly as a doodle. (Ben once wrote apologetically that he could have spent his time better.)

Franklin preferred to measure 'magic' using a different kind of diagonal from

his predecessor Frénicle, employing a shape which he called a "bent row." In his 8 by 8 square (Figure 2), each row and each column adds up to 260. Also, $52 + 3 + 5 + 54 + 43 + 28 + 30 + 45 = 260$. Observe the placement of these terms in the diagram; they form a "bent row". So do their immediate downstairs neighbors: $14 + 60 + 59 + 10 + 23 + 38 + 37 + 19 = 260$. Again, refer to the diagram: you can see that this set, too, is still worthy of the name "bent row". Moreover, those V-shapes can be taken sideways or even upside-down, and they will still sum to 260.

52	61	4	13	20	29	36	45
14	3	62	51	46	35	30	19
53	60	5	12	21	28	37	44
11	6	59	54	43	38	27	22
55	58	7	10	23	26	39	42
9	8	57	56	41	40	25	24
50	63	2	15	18	31	34	47
16	1	64	49	48	33	32	17

Figure 2. A Franklin Square

Here is another, slightly weirder "bent row": $14 + 61 + 64 + 15 + 18 + 33 + 36 + 19 = 260$. Get the idea? Try to find some others!

I think you will agree that Figure 2 satisfies properties which are more impressive than Frénicle's two-diagonal requirement. Franklin has arranged the integers 1 through 64 in such a way as to satisfy 8 row conditions, 8 column conditions, and 32 bent row conditions. You can convince yourself with a little thought that these 48 conditions are not all independent of one another, but it's an impressive feat nonetheless!

Now look at any 2 by 4 block and take its sum. What do you get?

There are other nifty properties you can look for which are a consequence of those already listed. If you find this square as fascinating as I do and you

cont. p.8

In His Own Words
Franklin on Happiness
by Claude-Anne Lopez and Kate Ohno

After the successful conclusion of Franklin's mission to France during the Revolutionary War, he returned to Philadelphia in September, 1785, to the acclaim of his countrymen. He told the Justices of the City and County of Philadelphia, "To find it [our country] in the full enjoyment of peace and liberty, makes me esteem the day of my arrival among the happiest of my life."¹ Snugly ensconced in "the Good House contrived to my Mind" that he had designed more than twenty years before, cosseted and catered to by his daughter Sally Bache and her family, he anticipated a life of retirement, with far more leisure time than he actually experienced.

Although he complained of having too much business to attend to, the office of President of the Supreme Executive Council of Pennsylvania (the equivalent of being governor), to which he was elected on October 18, 1785, was an honor of which he was extremely proud. In a letter to his friend and scientific colleague Jan Ingenhousz dated September 2, 1786, he described his life, "I acquaint you... that except the Stone, which does not grow worse, I retain my usual good Health; tho' my Strength and Activity is sensibly diminish'd, as might be expected at the Age of Four-score. I enjoy however the Conversation of my Friends and my Books, my Hearing and Sight being as good as when you first knew me [probably in the 1760s, when Franklin was in his 50s]. After long Absence in Europe I find myself happily at home... with my Children about me, who afford me great Pleasure, and in one of the most flourishing Cities and best Provinces of America, enjoying the universal Esteem and Respect of the People, who with great Unanimity have plac'd me at the Head of the State."²

Franklin undoubtedly intended the pleasing aspects of his life to leave the dominant impression. In the past, he had disapproved of people imposing their bad temper on others, and he tried to avoid sharing his own darker moods with his friends. On November 24, 1786, he wrote to one of them, John Hunter, about his contention that happiness was largely self-created, "all among us may be happy, who have happy dispositions, such being necessary to happiness even in paradise."³ Thus, feeling increasingly the infirmities of age, and the nearly constant pain of "the stone,"

Franklin was faced with finding a way not only to accept the changes forced upon him by circumstances, but to embrace them, and find a grain of happiness in things which, as a younger man, he would have allowed to pass without comment. This more subtle happiness he explained to Andrew Ellicott, a young surveyor and mathematician who visited him in early December, 1785. David Rittenhouse, Franklin's scientific friend, brought Ellicott to Franklin's house for the evening. Ellicott summed up his impressions of the sage of Philadelphia in this way: "the old Gentleman tho' infirm in body possesses the former Vigour of his mind." The following day he had a further opportunity to observe Franklin at a meeting of the American Philosophical Society where the Doctor read a paper. A few days later Ellicott was invited to spend the day at Franklin Court, arriving right after breakfast, and only leaving at 9 P.M. Ellicott's diary records Franklin in his

*"...his Room makes
a Singular
Appearance, being
filled with old
philosophical
Instruments,
Papers, Boxes,
Tables, and Stools."*

favorite setting: "I found him in his little Room Among his Papers...his Room makes a Singular Appearance, being filled with old philosophical Instruments, Papers, Boxes, Tables, and Stools." Franklin received his visitor warmly, engaging him in conversation about the thinly settled lands to the west. Around 10 A.M. a tottering Franklin rose to warm some water over the fire, and Ellicott describes an incident which gives us insight into the old philosopher's peculiar concept of happiness: "he...not being expert through his great age I desired him to give me the pleasure of assisting him, he thanked me and replied that he ever made it a point to wait upon himself and although he began to

find himself infirm he was determined not to encrease his Infirmities by giving way to them— After his water was hot I observed his Object was to shave himself which Operation he performed without a Glass and with great expedition— I Asked him if he never employed a Barber he answered 'no' and continued nearly in the following words 'I think happiness does not consist so much in perticular peices of good fortune that perhaps accidentally fall to a Mans lot as to be able in his old age to do those little things which was he unable to perform himself would be done by others with a sparing hand.'⁴ Franklin demonstrating his steady hand and unflinching knowledge of his own face to his young visitor may elicit a smile. Was this just an old codger's vanity? Did the inveterate hoaxer simply delight in confounding a stranger with a trick that would be difficult for even a young man to emulate? Undoubtedly that was part of it, but Franklin's words tell us more; he achieved happiness through his action, because with

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In His Own Words

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out the ability to successfully complete this small task for himself he would be at the mercy of others. What was at stake was his independence, the very core of his identity. He refused to give in to his infirmities, to wait for his shave, or do without it if time was short. Manasseh Cutler, who visited Franklin nearly two years later, witnessed a similar demonstration. Franklin wished to show him a heavy, bulky volume that resided on a low shelf in his library. He insisted on hoisting the awkwardly sized book onto the table all by himself. Cutler dismissed Franklin's hardheaded independence as "that senile ambition common to old people". But Cutler admits Franklin was far from senile. Indeed, he was amazed at the clarity of Franklin's faculties at such an advanced age! Although Cutler observed "every thing about him [Franklin] seems to diffuse an unrestrained freedom and happiness",⁵ he did not link Franklin's attitude with the older man's refusal to accept anything less than independence. This characteristic had already been observed as early as 1783 when Benny Bache, just back from his long years of boarding school in Geneva, remarked in his diary that his grandfather was unlike other old people, he was always in a good mood.

Notes

1. The address was given on Sept. 17, 1785: Library of Congress.
2. Library of Congress.
3. William Temple Franklin, *Memoirs of the Life and Writings of Benjamin Franklin...* (3 vols., 4to, London, 1817-18), ii, 94-5.
4. Catharine Van Cortlandt Mathews, *Andrew Ellicott: His Life and Letters* (New York, [1908]), pp. 50-1.
5. William P. Cutler, *Life, Journals, and Correspondence of Rev. Manasseh Cutler...* (2 vols., Cincinnati, 1888), i, 267-70.

Good Reads: Reviews of Franklin Related Books

Ben Franklin's 12 Rules of Management: The Founding Father of American Business Solves your Toughest Problems by Blaine McCormick. Irvine, CA: Entrepreneur Press, 2000. 210 p. Paperback, \$14.95. This practical and informative book takes Franklin as a model for success in business and applies his business methods to a modern setting. The author, Blaine McCormick, is an assistant professor of management at Baylor University and has used Franklin's Autobiography as a teaching tool in his Principles of Management classes. If anyone needs further proof of the enduring nature of Franklin's thought, here it is! Each chapter focuses on a particular business principle and begins with a quote from Franklin. The author analyzes the idea, citing examples from Franklin's life and from the lives of other business leaders. The text is liberally broken up by sidebars and supplemental material. It is written in the casual style common to most self-help books on the market today, so it is easily accessible to a variety of readers. The book should be appealing to anyone with an interest in Franklin, or in business, and it could also be a great way to introduce the Autobiography to younger people who find the original text too daunting.

Benjamin Franklin's First Government Printing: The Pennsylvania General Loan Office Mortgage Register of 1729, and Subsequent Franklin Mortgage Registers and Bonds by Keith Arbour. Philadelphia: American Philosophical Society, 1999. Transactions, Vol. 89, pt. 5. 90 p. Paperback, \$15.00. In a more rigorously academic vein, we have a new slice of Franklin history to absorb. In 1996, a unique folio volume surfaced in a rural Pennsylvania book barn: this proved to be Benjamin

Franklin and Hugh Meredith's first commissioned printing job for Pennsylvania's government. It had been entirely unknown to historians and bibliographers prior to this. Section I of the book recounts Franklin and Meredith's first two years in business, and refines the chronology of their earliest printing. Section II considers typographical and other evidence for the precise dating of the new manuscript, and Section III comprises complete bibliographic descriptions of the new manuscript and other mortgage registers and bonds produced by Franklin or his printing office through 1759. This is by no means "light reading" but it is a must for anyone interested in Franklin's printing career or in Franklin manuscripts.

Klingende Glaser: Die Bedeutung idiophoner Friktionsinstrumente mit axial rotierenden Glasern, dargestellt an der Glas- und Tastenharmonika by Peter Sterki. Bern: Peter Lang, 2000. 230 p. Hardback, \$37.95. For those of you who read German, or can't get enough about the glass armonica, here is a new study of the instrument by an esteemed Swiss musician. The book discusses the armonica's development by Franklin, its use by Mesmer, and the compositions written for it by Mozart and Beethoven. It further traces the use of the instrument into the 19th and 20th centuries.

Worldly Goods: The Arts of Early Pennsylvania, 1680-1758 by Jack Lindsey, et al. Philadelphia: Philadelphia Museum of Art, 1999. 224 p., 265 illus. Paperback, \$35.00; Hardback, \$65.00. If you missed the exhibition, you can still experience it through this beautiful catalog! Featuring fine furniture (including a table which belonged to Franklin), textiles, ceramics, book illustrations, and other goods dating from the colonial period, this well-illustrated catalog also discusses the intellectual and scientific pursuits of the late 17th and early 18th centuries in a series of penetrating essays. References to Franklin abound.

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Friends of Franklin Tour:

"Benjamin Franklin's Historic Low Countries and Northern Germany"

Mark the dates! From September 30 - October 10th, 2001, the Friends of Franklin are going to explore that other vast territory that became the haunt of Benjamin Franklin—the Low Countries and northern Germany.

In addition to searching out the length and breadth of England, Scotland, Ireland, and France, our famous founder of the US and much else traveled across Belgium looking at architecture and visiting anyone interested in electricity. In Brussels he conducted electrical experiments and saw the Grand-Place that defines the city center and which is still in place today.

In the Netherlands he visited Rotterdam where he was honored as one of the world's greatest scientists. In Amsterdam he met with and was hosted by the folks who produced world commerce. At Haarlem he saw electrical equipment that equaled his own. In Leyden, he visited the inventor of the Leyden Jar, his means of storing electricity.

From the Netherlands he proceeded to Hanover, Germany, visiting other scientists. Then he came to Bad Pyrmont, one of the great resorts of the modern world where his visit and exercise routine are still on record for us to see.

In Germany we will also go to Gottingen, where Franklin was personally honored as one of the greatest scientists of the modern world.

And this tour will include much more: private haunts and public displays of Franklin on the continent of Europe.

Travelling through these various cities, we will see this world of learning, knowledge and experience. These are lands of extreme charm, history, art, distinctive culture, and beauty in addition to their interest to Benjamin Franklin, and are not to be missed

As an added feature for this tour we will have in our company a very special consulting guide and Friend who knows this landscape better than anyone else, Claude-Anne Lopez, Franklin scholar, Franklin interpreter extraordinaire and native of Belgium.

This tour will be limited to 45 participants. Full tour particulars and costs will be available in November. You may hold a place on the tour by completing the form below and sending a fully refundable deposit of \$100 per person to Kathy DeLuca at Events Plus. No reservation will be held unless accompanied by the \$100 deposit.

Brochures will be available in late October and will be mailed to all those registered or interested in finding out more information about the tour. Questions should be addressed to Kathy DeLuca at 215-236-0300.

Please complete and return this form with a \$100 refundable deposit to hold your place on the tour. Initial payment deposit must be made by check payable to Events Plus, Inc. All payments thereafter can be made by check, money order, Visa or Mastercard.

Traveler 1:

Traveler 2:

Telephone:

Fax:

E-Mail:

Please reserve _____ place(s) for the Friends of Franklin
2001 tour.

_____ @ \$100 deposit per person

_____ Total Enclosed

Mail form to:

Kathy DeLuca
Events Plus, Inc.
219-P Berlin Road, #186
Cherry Hill, NJ 08034



would like to learn more, a good place to start is Oystein Ore's *Invitation to Number Theory*, an inexpensive paperback whose cover displays one of Franklin's designs.

James Logan also introduced Franklin to the work of Michael Stifel (1487-1567), author of *Arithmetica Integra*. This German mathematician pioneered the use of negative exponents and algebraic symbols we take for granted today. Stifel's ideas would lead to the development of John Napier's logarithms. (Stifel and Napier also shared a tendency toward religious controversy, but that's another story.) His book included Pascal's triangle, one of its first appearances in the Western world, well before Blaise Pascal's birth. He helped to popularize the radical sign still used to represent the square root.

What intrigued Logan and Franklin, however, was Stifel's gargantuan magic square composed of the numbers 1 through 256. Franklin was driven to create his own square of equal size, shown in Figure 3. Like the 8 by 8, it satisfies a sum condition (sum = 2056) on every row, column, and bent row. These 96 properties trump Stifel's 34 conditions by a mile!

Space does not permit us to examine the Franklin magic circle, an arrangement of the whole numbers from 12 to 75 in concentric circles wherein each radius and each ring adds up to 360.

I have spoken twice on Benjamin Franklin's mathematics, once before the Institute in the History of Mathematics and Its Use in Teaching, and also at the joint annual meeting of the Mathematical Association of America and the American Mathematical Society. Both times the following setup worked perfectly:

1. Show the three famous figures;
2. Describe some of their properties;
3. Ask the audience, "What are you all wondering?"

As one they responded: "How'd he do it?"

Good question. Over a dozen scholarly papers were devoted to Ben's squares in the past century alone. Some

use mathematics not yet developed in his time. Some use ad hoc techniques which are hindsight-driven, and unlikely to be the true method. Not one of these authors has found a method which (a) actually works, and (b) could have been the one in use 250 years ago.

That there was a method, there can be no doubt. There are $64!/8$ (or around 1.59 times ten to the eighty-eighth) different ways to arrange the integers from 1 to 64 in an 8 by 8 array. Franklin must have followed an algorithm, but no one yet has satisfactorily explained what it was. We can

"see" the system by tracing the integers in order in Figure 1, but *describing* it is not the same as understanding the construction. How could I know in advance that this arrangement will work? Trial-and-error is an insufficient explanation when the cases to be considered number over a billion billion billion billion... well, you get the idea. Not bad for a fellow whose early experiences in arithmetick were unpleasant and unproductive.

Few contributions to mathematics are still remembered after two cen-

turies' time, but Ben made his mark. The three magic figures alone would be enough to guarantee him a small but secure place in math history— but there is more! Alas, these discoveries will have to wait for a future issue.

As Ben himself remarked famously, the 16 by 16 square is "the most magically magical of any square ever made by any magician." [6]

Notes

1. B. Franklin, *Observations Concerning the Increase of Mankind and the Peopling of Countries* (1751).
2. P.C. Pasles, *Abstracts of the American Mathematical Society* 21:1 (2000), p. 3.
3. United States Historical Census Browser, University of Virginia Library, <http://fisher.lib.virginia.edu/census/>
4. B. Frénicle de Bessy, *Traité des triangles rectangles en nombres, dans lequel plusieurs belles propriétés de ces triangles sont démontrées par de nouveaux principes* (1676).
5. J. P. Robertson, "Magic Squares of Squares," *Mathematics Magazine* 69:4 (1996), pp. 289-293.
6. Jared Sparks, ed., *The Works of Benjamin Franklin*. Vol. VI (1856), p. 103.

200	217	232	249	8	25	40	57	72	89	104	121	136	153	168	185
58	39	26	7	250	231	218	199	186	167	154	135	122	103	90	71
198	219	230	251	6	27	38	59	70	91	102	123	134	155	166	187
60	37	28	5	252	229	220	197	188	165	156	133	124	101	92	69
201	216	233	248	9	24	41	56	73	88	105	120	137	152	169	184
55	42	23	10	247	234	215	202	183	170	151	138	119	106	87	74
203	214	235	246	11	22	43	54	75	86	107	118	139	150	171	182
53	44	21	12	245	236	213	204	181	172	149	140	117	108	85	76
205	212	237	244	13	20	45	52	77	84	109	116	141	148	173	180
51	46	19	14	243	238	211	206	179	174	147	142	115	110	83	78
207	210	239	242	15	18	47	50	79	82	111	114	143	146	175	178
49	48	17	16	241	240	209	208	177	176	145	144	113	112	81	80
196	221	228	253	4	29	36	61	68	93	100	125	132	157	164	189
62	35	30	3	254	227	222	195	190	163	158	131	126	99	94	67
194	223	226	255	2	31	34	63	66	95	98	127	130	159	162	191
64	33	32	1	256	225	224	193	192	161	160	129	128	97	96	65

Figure 3. Another Franklin Square.

Junto, Anyone?

Franklin is credited with founding a number of venerable institutions and societies, including the Library Company, which functioned as the first lending library in America, and the American Philosophical Society, which brought together learned men to discuss their interests and scientific pursuits. Both of these are in a sense the spiritual descendants of one of the first groups Franklin ever founded: the Junto. Franklin was just twenty-one when he proposed a gathering of young men to meet weekly for "self-improvement, study, mutual aid, and conviviality." The group met for decades, pursuing their goals of support and betterment.

Because of the importance of the Junto to Franklin's own success in life, others have tried to follow in his footsteps and create their own version of the Junto. Several such organizations are known to exist. The American Philosophical Society Library has evidence of the Pittsburgh "Junta" group, whose membership included such well-known names as Mellon and Frick. Established in 1882, the group has variously been described as a "social club" and a "literary organization." At their 80th anniversary banquet in 1962, Julian Miller, a Pittsburgh patent attorney, recreated Franklin's electrical experiments using specially made reproductions of Franklin's scientific equipment. Nothing has been heard from this group in awhile, so if any Pittsburgh-area Friends are members or have knowledge of this organization, it would be great to get an update.

More recently, we have received word of The Junto of Indianapolis, a group that dates its founding back to 1929. They seem to have a large and active membership, meeting approximately weekly. Their membership is limited to 100 men, with each one representing a particular profession or business, with no overlap. They hear no outside speakers and do not en-

gage in charitable work; talks by members and joke and story-swapping seem to be regular parts of the agenda. Golf outings and trips to Las Vegas are some of the special activities they plan. The group produced a nice keepsake volume entitled *Sayings of the Sages Throughout the Ages*.

Not surprisingly, the concept of the Junto has entered cyberspace. The online Junto community is located at www.junto.org. The introduction from the first page of their homepage reads: "Benjamin Franklin founded Junto to promote self improvement and community service. As an online community, we share inspirational stories, jokes, and acts of random kindness. We recommend books, movies, events, and charities. We participate in enlightening discussions, and educate ourselves through mini-tutorials on spiritual topics." The group also meets physically once a month in the Washington, DC area.

If you know of any other Junto-inspired organizations, please let us know. And if you are thinking of possibly starting one in your own area, let us know this as well. Friends of Franklin are always interested in the many ways the legacy of Franklin lives on.

What Do YOU Think?

Second call for submissions! If we haven't yet heard from you, please send us your thoughts and comments on the following questions:

What problem or issue do you think Franklin would be most interested in if he were alive today? Why?

Send your replies to the *Franklin Gazette* via fax, mail, or e-mail (see page 2 for all the right numbers). We eagerly await your well-thought out and witty responses. Look for answers from Friends coming up in future issues of the *Gazette*!

Good Reads

cont. from p.6

Benjamin Franklin Book of Recipes by Hilaire Dubourcq. London, 2000. \$40.00 or £18.00. This book is a unique collection of gastronomic specialties from the age of Franklin, complemented by anecdotes from his life in Boston, Philadelphia, London, and Paris. Each chapter is set in an important Franklin locale with a representative menu. Insight into 18th century food and drink is interspersed with liberal servings of Franklin wisdom. British personality Patrick Moore has called the book "immensely entertaining" and deems it full of "material not to be found elsewhere." This book is a special fundraiser for the renovation of Franklin's Craven Street house in London. The book can be ordered directly from the Benjamin Franklin House, 36 Craven Street, London WC2N 5NF. Postage and handling are included in the price. Personal checks or money orders in US dollars or UK sterling are fine, but payment by credit card is not available at this time. Support an important cause with your purchase of this unique item!

We encourage Friends of Franklin to remember to support our organization by purchasing their books through the Amazon.com link on our website (www.benfranklin2006.org). With the exception of the Franklin Recipe book listed above, which benefits the Craven Street house and must be ordered directly through them, every book you want to buy can directly benefit the Friends of Franklin by using this simple, secure ordering method.



Special Thanks to Our Life Members!

William D. Anderson, Jr.;
Wichita, KS

Jackson C. Boswell;
Arlington, VA

Elly Fitzig; Wichita, KS

James M. Gassaway;
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Noriyuki Uenami;
Tokyo, Japan

George Franklin Waters;
Rochester, MN

Douglas L. Whitley;
Batavia, IL

Ehsan Zayan;
London, UK

Welcome and Thank You to Our New Members!

Sustaining:

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Newington, CT

Joan M. Reid;
London, England

Friends:

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Ellettsville, IN

Daniel C. Harlan;
Carmel, IN

John Jay Iselin;
New York, NY

Samuel Lancaster;
Sewanee, TN

Henry Strouss;
New York, NY

Barbara Ulrich;
West Hartford, CT



Celebration! of Benjamin Franklin, Founder

The third annual Celebration! of Benjamin Franklin, Founder will be held January 17, 2001 in Philadelphia. Once again a number of organizations founded by Franklin or having close ties to him are banding together to celebrate the birthday of this great man. The first event on Wednesday, January 17th, will be the procession from the American Philosophical Society to Franklin's gravesite. Representatives of the Franklin-related organizations and government officials will march to the Christ Church burial ground, where a commemorative wreath will be placed on Franklin's stone.

The Pennsylvania Hospital, one of the Franklin-related organizations, is also celebrating their 250th anniversary at this time. Following the procession, they will host a luncheon which will include a seminar given by Hospital doctors, consisting of short presentations on health matters of interest to the general public. The events of the day will be capped by a Reception and Banquet held at the Franklin Institute, beginning at 5:30 pm. In keeping with this year's medical theme, a number of prominent doctors and medical researchers have been invited to attend. For more information about how you can participate in any or all of these events, please contact Franklin Reinbauer at 973-697-7697.

Related events are scheduled to take place on Thursday, January 18th. At this time, the purpose is to honor the French-American Alliance, which reflects another well-known accomplishment of Franklin. Bujon de l'Estant, Ambassador from France to the United States, will be attending the day's events. French companies with branches in Philadelphia are also being invited to participate. In the afternoon, *Tête à tête*, a film about the French-American Alliance will be

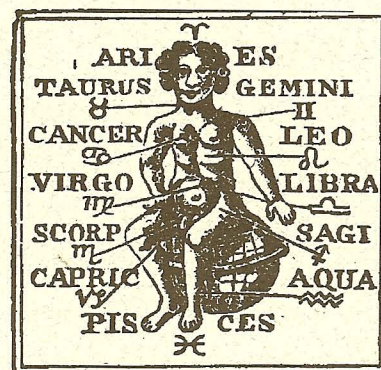
shown, and in the evening there will be a reception held at the Ritz Hotel. For more information on these events, contact Charles Cook at 610-687-0359.

Announcing! Franklin Essay Contest

Friends of Franklin are happy to announce that they are sponsoring a new essay contest, to help encourage schoolchildren's interest in Franklin. The contest is limited to fifth-grade students only (this is the year that American History is presented in the standard curriculum). The topic of the essay is: **"What I Like Best about Ben Franklin and Why."** Entries, limited to one per student, should be no longer than two type-written, double-spaced pages. Entries will be accepted from October 1 – December 8, 2000, and should be mailed to the Friends of Franklin, PO Box 40048, Philadelphia, PA 19106.

Each geographic area will have a single winner. Each area winner will receive a special Ben Franklin program for his or her school, which will include a visit from a Franklin-related performer, such as a Franklin impersonator or armonica player. There will be one overall grand prize winner, whose essay will be published in the *Franklin Gazette* and on the Friends of Franklin website. The grand-prize winner will also receive an individual prize (to be determined). The winner will be announced at the January 2001 Franklin Dinner in Philadelphia.

This is a great opportunity to get young people thinking about Franklin at an early age. The school year will have already begun by the time this newsletter reaches you, and classroom teachers who wish to have their pupils participate will need time to prepare lesson plans and present the contest to their classes. Please help get the word out to schools in your area!



Calendar of Events

September 26, 2000. Claude-Anne Lopez, author of *My Life with Benjamin Franklin*, will make an author appearance at the University of Pennsylvania bookstore in Philadelphia at 2 pm. This event is free and open to the public.

October 1-December 8, 2000. Entries to be accepted for the fifth-grade Franklin essay contest. See the article to the left for complete details

January 17, 2001. Third annual birthday Celebration! of Benjamin Franklin, Founder. In Philadelphia. See the article to the left for all the details!

January 18, 2001. Events to honor the French-American Alliance. See Celebration! article to the left for more information regarding this event.

September 30-October 10, 2001. Friends of Franklin tour to Belgium, the Netherlands, and northern Germany. See p. 7 of this newsletter for more information, and call Kathy DeLuca at 215-BEN-0300 with any questions or to register.



Join Friends of Franklin!

Would you like to become an official member of the Friends of Franklin organization? Do you have a friend or relative who might wish to join, or who would appreciate a gift membership? All individuals, scholars, students, collectors, and Franklinophiles, as well as institutions, are invited to become members of the Friends of Franklin at the following membership rates:

Life Members	\$1,000	Franklin Friend	\$50
Institutional Members	\$1,000	Student Members (full time only; photocopy id)	\$20
Sustaining Friend	\$ 100	Subscription (Educators and libraries only)	\$20

YES, I'd like to join the Friends of Franklin!

NAME: _____

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PHONE: _____ **FAX:** _____ **E-MAIL:** _____

Method of payment: Personal check _____ or Money order _____ (Made payable to Friends of Franklin, Inc.)
Credit Card: American Express _____ MasterCard _____ VISA _____
Card # _____ Expiration date: _____
Signature _____ Amount enclosed: _____

Please send to: Friends of Franklin, Inc., PO Box 40048, Philadelphia, PA 19106

215-BEN-0300(215-236-0300)

215-440-3423 (FAX)

fof@benfranklin2006.org

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Friends of Franklin, Inc.
P.O. Box 40048
Philadelphia, PA 19106