

The Duodecimal Bulletin

Whole Number 42

Volume 26, Number 1

Fall 1981



THE DOZENAL SOCIETY OF AMERICA

*c/o Math Department
Nassau Community College
Garden City, LI, NY 11530*

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THE DOZENAL SOCIETY OF AMERICA

(Formerly: The Duodecimal Society of America)

is a voluntary, nonprofit, educational corporation, organized for the conduct of research and education of the public in the use of base twelve in numeration, mathematics, weights and measures, and other branches of pure and applied science.

Membership dues are \$6.00 for one year. Student membership is \$3.00 per year.

The Duodecimal Bulletin is an official publication of the DOZENAL SOCIETY OF AMERICA, Inc., c/o Math Department, Nassau Community College, Garden City, LI, NY 11530.

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FROM THE EDITOR

By Patricia McCormick Zirkel

In August of this year, while we were gathering DSA material from Council Bluffs and Garden Grove (see "From the President's Desk" by Gene Zirkel, this issue), Gene began talking about "Tom Linton's long-standing hope of getting the Bulletin going again." Eventually, (and, I gather, with some trepidation!) he broached the subject of myself as acting editor. Since I was daily becoming more interested in the doings of the DSA, I accepted; with the understanding that Gene would supply technical assistance in the areas of mathematics and Society history. I have, since that time, thoroughly enjoyed the compilation of this Bulletin, from the selecting of articles down to choosing a printer and doing the actual layout.

We are accordingly pleased to begin re-issuing the Duodecimal Bulletin with this issue, and hope that our efforts capture the spirit and intent of former DSA publications. As in the past, we will publish articles pertaining to dozens and reports on the activities of the DSA and its members. With regard to the latter, we have begun here the presentation of past Annual Meeting reports. This issue contains accounts of the 1974 and 1975 meetings, together with the minutes of our most recent gathering in Garden City, NY in 1981. Subsequent issues will report on the meetings of 1976 through 1980, so that all members may be brought up to date on the business of the Society. (In this regard we would appreciate help in compiling back minutes, etc. See related article: "Help!", in this issue.)

Many things have happened within the Society since the Bulletin was last issued. Ralph Beard and F. Emerson Andrews, two of the original members (indeed founders) of the Society, have passed away. We have included obituaries of both men in this issue. In fact, Beard's memorial was composed by Andrews, and was intended for publication at the time of the former's death in 1974. More recently we lost our previous leader, Tom Linton, earlier this year. He is sorely missed and the Society is poorer for his absence. At this writing, we plan a memorial article on Tom for the next issue.

Also during 1981, as some of you are aware, the DSA had approached the Dozenal Society of Great Britain (DSGB)

about tapping into their publication instead of producing our own. However, it is the concensus of the Officers of the DSA that our interests are better served by publishing our own Bulletin than by relying on a joint DSGB/DSA effort since it has traditionally been the job of the Bulletin to publish DSA meeting reports and other information of interest mainly to an American membership. At the same time, it is the hope of the DSA Officers that the American Society will maintain an interest in the DSGB Journal and support that publication with our literary contributions, thus facilitating an active communication between the two Societies. It is planned that DSA members will receive the Journal in addition to the Bulletin.

In re-issuing the Bulletin, we have attempted to adhere as closely as possible to the format of previous years. One change -- the Dozenal logo on the cover -- was Tom Linton's idea. Other changes will come slowly; and we invite your comments. We want to produce *your Bulletin*, so please advise us of your criticisms -- both pro and con.

Thanks in advance for your help and support!! - PZ

ANNUAL MEETING

Friday and Saturday, May 12; and 13; 1192 (14th and 15th, 1982) at:

*Nassau Community College
Garden City, LI, NY*

Further information will be provided in the Spring issue of the BULLETIN.

DOZENAL SOCIETY OF AMERICA

Minutes of the Annual Meeting

Saturday, May 9, 1191; (1981)
Nassau Community College
Garden City, NY 11530

Meeting opened at 2 p.m. by Treasurer, Prof. James Malone.

In attendance were--

Board Members: Gene Zirkel class of 1983
Henry Webber (proxy) 1983
Robert McPherson (proxy) 1983
John Selfridge 1982
Anton Glaser (proxy) 1982
Eugene Scifres (proxy) 1981, and
Jim Malone 1981; and

Members: Dudley George,
Dr. Angelo Scordato, and
John Earnest

Guest: Ms. Ethel Rathbun, Executive Secretary, Dept.
of Mathematics University of Michigan.

In the absence of a nominating committee, the body acted as a committee of the whole chaired by John Selfridge.

We reluctantly accepted the decision of Board member Eugene Scifres not to run for re-election. The committee nominated Jamison Handy, Jim Malone, Dudley George, and John Earnest for three year terms as the class of 1984, and Tony Scordato to a one year term to fill the vacancy left by the death of Tom Linton in the class of 1982.

It also nominated:

Chairman of the Board - Charles Bagley
President - Gene Zirkel
Vice President - Tony Scordato
Secretary - John Earnest
Treasurer - Jim Malone.

The committee's report was accepted, and since no other nominations were forthcoming, Handy and Malone were

re-elected to the Board and George, Earnest, and Scordato were elected to the Board.

Meeting of the Board

In accordance with our Constitution, the membership meeting was briefly adjourned while the new Board of Directors met for the first time. This meeting was also chaired by Treasurer Malone.

The Board quickly re-elected Bagley and Malone, and then elected the other three officers without opposition.

The membership meeting was then reconvened under the Chairmanship of President Gene Zirkel.

Correspondence was read expressing sympathy over the death of our President, Tom Linton. Letters were received from the U.S., Great Britain, and New Zealand. A moment of silence was then observed by all present in memory of Tom. A motion was approved to send copies of all letters referring to Tom to his widow, Vivian Linton.

A Nominating Committee was appointed consisting of Dr. Scordato, Prof. Malone, and John Selfridge.



(L-R) Jim Malone, Treasurer; John Earnest, Secretary; Gene Zirkel, President; Tony Scordato, Vice President--all elected at the 1981 DSA meeting, Garden City, NY

A Constitution Committee was appointed to look into updating our Constitution and bylaws. It is chaired by John Selfridge and includes Earnest and Scordato.

A proposal was approved to continue to help finance the Journal which is sponsored jointly by the DSA and DSCB.

A proposal to initiate a newsletter was approved.

With regard to next year's meeting, John Earnest was appointed Program Chairman. The meeting was set for next Spring at Nassau Community College. The same format of Friday night social, Saturday working session, Saturday evening dinner was decided on. Everyone agreed that attending the college production of Eugene Ionesco's "Rhinoceros" Friday evening was very enjoyable part of the meeting. The possibility of the 1983 meeting being held in Michigan or elsewhere was discussed.

Many other items of interest were discussed, including the gathering of our archives from Iowa and California at Nassau Community College.

We adjourned the meeting at 4:30 p.m. to the John Peel Room where the wives and guests joined us for a festive dinner.

Respectfully submitted,
John Earnest, Secretary

FROM THE PRESIDENT'S DESK:

Trying to stand in the shoes of the President of the DSA is difficult. Looking back at the names of my predecessors is awesome: Andrews, Robert, Beard, Camp, Bagley, Churchman, and Linton.

It is obvious that the Society is not at a high point in either numbers or activity. The work to be done is time-consuming, and I am not retired as were some past leaders. What I would like to do is to continue the policies of the past. As I read the old Bulletins and files I see the repeated call for a national office, for publication of the Bulletin, for a permanent library, for new members.

Under the guidance of Tom Linton, we established our headquarters at Nassau Community College, where we have hired a student as a part-time secretary. The College Library has agreed to house a special collection of Dozenal material. And now the Bulletin is being reprinted once again!

Tom had long desired to go to Iowa and gather the papers and books of Beard, Seelbach, and Churchman which were being stored at Churchman's farm there. My wife Patricia and my son, George (our newest member!) joined me this summer, and the three of us fulfilled Tom's goal. We visited an ailing but vitally alert Henry Churchman, and with the help of his cordial son, John, packed dozens of cartons for shipment to NY. Then we flew to California where Tom's gracious widow, Vivian, helped us to box the materials from Tom, Kingsland Camp, and the Society. More than four dozen boxes of valuable Society records, books, old Bulletins, and the like now rest in room B-12 in Nassau Hall where they are slowly being sorted.

It is both very exciting and also very sad for me to go through these papers. Exciting to read the history of the Dozenal greats found in their own notes and files and books. Exciting to come across a book autographed by Camp, or annotated by Andrews or Terry. Sad, because I knew many of these men and I have fond memories of their kindnesses to me.

Soon we will have a permanent Dozenal collection of books, periodicals and pamphlets in the College Library here. These will be available via inter-library loan for research. We will also have our own archives and records. The dreams are slowly becoming a reality.

Where is your role in all of this? How can you help? In many ways. Do you have any old Dozenal books, back issues of the Bulletin, or Dozenal Doings, or Dozenal Essays that you are no longer using? Are they just gathering dust on your shelves? Why not pack them up and donate them to our library collection or to our archives? Can you write a short article for the Bulletin or for the Journal? Can you attend an Annual Meeting and support us with your presence and your ideas? When was the last time you recruited a new member? Could you give a talk at a local school or organization? Give someone one of our brochures? Finally, of course, we can always use your tax

deductible donations to keep our educational activities going.

The Society is YOU. If you ask what are we doing, the answer is whatever YOU are doing. As Ralph Beard always said, "Each one teach one."

See you at the Annual Meeting,
Gene Zirkel, President

THE ANNUAL AWARD - 1980

After President Tom Linton died we discovered among his notes a resolution passed at the Sept. 1980 meeting in Boulder, Colorado, giving the Society's Annual Award to:

HENRY CLARENCE CHURCHMAN

an attorney from Council Bluffs, Iowa.

Henry has served well both the cause of duodecimals and the Society for many years. Since 1957 his name appears in the Society's records as a Member of the Board of Directors; Vice President; Associate Editor and then Editor of this BULLETIN; and President. He is the principal author of our By-Laws, and had a key role in the last revision of our Constitution. Henry also created the comprehensive Doremic system of Dozenal weights and measures. A prolific writer, his articles have appeared in the BULLETIN since 1955. He also was responsible for publication of a series of pamphlets called Dozenal Essays for several years.

It is with great pride that the Society recognizes the efforts, good will, and advice of this pillar of the dozenal movement. Anyone who knows Henry knows of his warmth, his smile, his kindness, and that he is truly the "perfect gentleman." It is fitting that his name is the twelfth on the list of those so honored by the DSA.

A Simple Approach to Duodecimal Counting

By

Prof. James Malone, N.C.C.

With the advent of the computer, numeration systems with bases other than ten have become more than just a "fill-in" topic. Rather they are a matter to be examined with care, not only by those entering the computer field but also by those of us who have just a passing interest in the computer because of its influence on so many facets of our lives.

To introduce the fundamental ideas of numeration systems I have come across a presentation using the duodecimal system that students seem to find interesting and easy to grasp. I'd like to share it with you, making no claims to originality. Here is the "story" I tell.

Many years ago, I was traffic manager for one of the largest wholesale egg dealers in the Northeast United States. My job consisted mainly in seeing to it that each delivery truck that left our depot was directed correctly and was loaded with sufficient eggs. Each deliver carried with him the order forms which had been picked up the previous afternoon by our salesmen. Since our deliveries were made between 12 midnight and 6 a.m., these orders had to be most exact; the store managers had little chance to see the driver and even if they did there were no extra eggs on the truck to increase an order.

DUES ARE DUE

Your annual dues of \$6 are due January first. You can save us lots of work and lots of postage by sending them in now so that we don't have to send you a reminder. If you can afford a little more - remember it's a tax deductible gift. Send your check now to our Treasurer, Prof. Jim Malone, c/o Math Dept., Nassau Community College, Garden City, LI, NY 11530.

After some months of observation, I decided that order forms need not be picked up ahead of time but could be left taped on the doors of those places receiving deliveries. The drivers and I were able to estimate, quite accurately, the number of eggs each delivery would need and hence the total number of eggs each driver would need to carry.

Our order form had the following configurization;

CRATES	GROSS	DOZENS	EGGS

wherein twelve eggs equals one dozen, twelve dozen equal one gross and twelve gross equal one crate. So a supermarket might leave an orderblank which would look like:

CRATES	GROSS	DOZENS	EGGS
3	4	0	0

which calls for a delivery of 5760 eggs. Because the business was owned by the same family for three generations, there were a few customers who were accorded

FOR YOUR INFORMATION....

*In line with an editorial decision which was approved by the DSA Board of Directors during the last years of publication of the Bulletin, we are substituting * and # as the symbols for decimal numerals 10 and 11. These will replace X and £, in page numeration and editorial comments. We have made this decision because these symbols are becoming widely known, and because they are in use commercially. - PZ*

the privilege of home delivery. Many of these were elderly and their orders were small. One of these might be:

CRATES	GROSS	DOZENS	EGGS
		1	4

which calls for a delivery of sixteen eggs.

Wanting to simplify our systems, I decided to eliminate the order form completely and have each customer simply tape a slip of paper on his door and on the paper write a four digit number. The digit furthest right would tell the driver how many loose eggs he should leave, the digit to the left indicated the numbers of dozens and so on; our first order would appear as: 3400 and our second as 0014. This worked well until at one of our private home customers the driver left three hundred eggs! The customer was irate, the driver defensive and I was confused. Looking at the order made everything clear. Here is what was taped to the door: 00210. The customer wanted two dozen and ten loose eggs. The driver, very correctly, interpreted the order as no loose eggs, one dozen and two gross. Something had to be done! The problem was created by the occasional need to use ten and eleven. So we, the management and I, invented symbols to represent these numbers when they were needed. We chose * to represent ten and # to represent eleven. Our "problem" order would now be: 002*. A supermarket order would now appear as: 12*0. The store manager and my driver both understood this to mean an order of one crate, two gross, ten dozen and no loose eggs.

See EGGSACTLY, page 25

DUODECIMAL SOCIETY OF AMERICA

Annual Meeting Report 1974Quality Inn North
Jacksonville, FLBoard of Directors Meeting (October 12, 1974)

Charles S. Bagley, Chairman of the Board of Directors of the Duodecimal Society of America (DSA) declared the Board meeting in session at the Quality Inn North, Jacksonville, FL at 9:00 a.m. on Saturday, October 12, 1974. Also present were Henry C. Churchman, Tom Linton, Frieda Butler, and Miriam Bagley. Churchman moved and Linton seconded that we dispense with reading of the minutes.

Board members' terms expiring this year are: Paul Henry Beaver, Jr., Ralph H. Beard, Charles S. Bagley, and Robert R. McPherson. Churchman nominated these four be re-elected as officers in DSA; Butler seconded. Bagley moved the nominations be closed. Carried unanimously. Churchman previously declined nomination to the Board in the words of Calvin Coolidge: "I do not choose to run". Churchman nominated the following members to serve as officers on the Board: C.S. Bagley as Chairman of the Board; Tom Linton, President; Frieda Butler as Secretary; Eugene M. Scifres as Treasurer. Bagley moved the nominations cease; Churchman seconded. Discussion: Linton made a motion to recess and call the Treasurer (Scifres) to ask if he would serve on the Board; for a financial statement; have the dues notices gone out; and about the financial report. Seconded by Churchman.

(Recess discussion followed reflecting the concensus that money is managed well, but raising questions concerning then-current dispensation of funds -- are they in savings, in bonds? Etc. -- Ed.)

Bagley called the meeting to order. Linton reported on his conversation with Scifres. "Skip" will redo the 1974 billings and mail them out soon, at \$6.00 for regular and \$3.00 for student members. In April 1975, the 1975 billings will be mailed out. Churchman will mail out the April 1974 Bulletins as soon as he returns to Iowa (he gave out a number at this meeting). Scifres will mail the President

and Chairman of the Board a financial statement as of December 31, 1974.

(It was further agreed that dues notices should be mailed to the membership yearly as of January 1st, and no later than April 1st.

Bagley appointed Churchman as Editor of the Bulletin for 1975...the Board further discussed encouraging the membership to write articles for the Bulletin -- Ed.)

Churchman moved the Chairman be authorized to appoint three members of a new Finance Committee with authority to receive financial reports from the Treasurer and other sources for the Society, to audit accounts as necessary and to make reports to the Chair from time to time. Seconded by Linton. Bagley will make the appointment later. The Treasurer will report to the Chair, and Bagley will tell the officers and Board Members, who at his discretion are in the "need to know"...

(Linton reported on various communications from members unable to attend this meeting, including Paul Beaver, F. Emerson Andrews, and Joseph Celko.

A long discussion followed on the status of a dozenal [or multi-base] calculator [later found to be not economically feasible - Ed.]. Meeting was recessed for dinner at 7:20 p.m. and re-convened at 9 p.m. Discussion ensued on the subject of Jean Essig's book, Douze: Notre dix futur. [Eng. tran., Dozen: Our Future Ten - this book is now part of our permanent collection at Nassau Community College, Garden City, NY]

Discussion returned to the subject of a dozenal calculator -- Ed.)

Linton moved we provide a budget of \$300.00 to accomplish the initial pre-design investigation of the electronic dozenal calculator. Churchman seconded. Discussion: Part of the funds to member McPherson to assist the engineer in this project. If they come up with a calculator, we should canvas the membership by separate first class mailing with a return questionnaire to see how many would be interested in purchasing the finished product. Motion carried. Linton will make all the arrangements.

Bagley announced his appointment of Andrews, Churchman,

and Linton to the Financial Review Committee. Linton passed around his journal of cash intake and output, mailing expenses, monies received, and secretary's expenses.

Bagley adjourned the Board Meeting at 10 p.m.

Frieda Butler

General Meeting (October 13, 1974)

DSA President, H.C. Churchman called the general meeting in session at the Quality Inn North, Jacksonville, FL at 10 a.m. October 13, 1974. Tom Linton was thanked for making arrangements for this meeting...

Having heard read the minutes of the Board of Directors of DSA October 12, 1974, Churchman moved that the general meeting of DSA approve the actions of the Board of Directors in each and every detail. Bagley seconded, Carried...

As recommended by the Board, Bagley, McPherson, Beard, and Beaver were elected as Board members in the class of 1977.

Linton moved, Bagley seconded that we hire an Accountant/Bookkeeper to audit and put annual sheets in order from his Journal of expenses and receipts. Approved. \$50.00 was designated for this purpose.

Linton called on all members to submit long or short technical articles to the Editor for the Bulletin. These will be published 'as is', space permitting.

(Discussion followed on a dozenal calculator. Reference is made to an Editorial in the Bulletin, Vol, 25, No.1, April 1974, p. 17 -- Ed.)

Linton read the note from Ralph H. Beard, Society co-founder, stating he would be at this meeting. Concern prompted placing a call to his home in Winchester, KY. The telephone was answered by a tenant, who had been instructed by Beard's son-in-law, Robert Lloyd of Maryland to receive all calls. Beard had left home to visit friends at San Marco Island, FL. On Monday, October 7, 1974, his car collided with a Trailways Bus in Naples,

Florida. His untimely death saddened us all. It is thought he would be buried by his only daughter, and leaves four nephews. Linton will write Mr. Lloyd to express our sympathy to the family and to inquire about any DSA material which is left to the Society, etc. As soon as we have this information verified, the Editor will write or ask Andrews (or others) for an article for the next Bulletin. (See Obituary following this report.) Linton was authorized to move any DSA books, records, etc. to his home at 4728 Cielo Drive, Huntington Beach, CA 92649. This brought up discussion of donations, leaving an estate to, or adding a codicil to one's will.

(Ed. note -- a sizable legacy was left to the DSA under the terms of Beard's will)

Linton read the letter from Andrews stating, regretfully he would not be able to attend the meeting, but reminds us his latest book Foundation Watchers has a chapter on our Society in which he concludes: "But for me this detour into numbers has been a fascinating excursion, bringing unexpected sidelights, interests, friendships, and the idea itself is absolutely valid. Counting by dozens is better. Selah! Andy".

Linton moved, Bagley seconded the general meeting adjourn. Carried.

Respectfully submitted,
Frieda Butler, Secretary

P.S. The members drove past the pine and oak trees, ferried across the St. Johns River a dozen or so miles to the Naval Station at Mayport, Florida. Linton had made arrangements for a guided tour of the USS Franklin D. Roosevelt, an attack aircraft carrier. She was launched in 1945 and is a sea-going city four blocks long, whose major industry is a naval air base with two major runways, and has a population of more than 4,000 men. From here the group journeyed down the scenic route to the Turtle Inn and a lovely buffet dinner, while watching the many waves of the Atlantic Ocean. We continued down the coast to St. Augustine, Florida. This was the first town in the US, has over 80 sightseeing points of interest, (among them, Ponce de Leon's Fountain of Youth). It was like traveling back nearly 200 years. As Voltaire said "One could almost feel the satin slippers going upstairs

and the hob-nail boots coming down" in colorful St. Augustine, Florida.

This was a memorable day: the beauty of the countryside, ocean, history, and fellowship is now one of my most cherished treasures. - FB

CONTINUATION OF THE DSA BOARD MEETING AT GAINESVILLE, FL,
OCTOBER 1974

The newly elected officers of DSA, Tom Linton, President and Frieda Butler, Secretary motored to Gainesville, FL at 10 a.m. on Monday, October 14, 1974 to meet with member Robert R. McPherson and some of his friends at the University of Florida campus. We toured the Business Administration class rooms. McPherson ran one of his programs through the IBM Data Processing System 1620 (which ties in to the 1622 Card Read Punch). (A good reference book for this computer is: "Programming the IBM 1620, the hands on approach - by Eric A. Weiss - Sun Oil. Co., McGraw Hill copyright 1965"). McPherson has the freedom of use of this computer and is in a position to keep up to date in this area. He attends many graduate seminars on campus. We sat in on a short lecture by Dr. S. K. Chang from IBM research on the "Principles of Electronics Instrumentation - how do you allocate keys." We met the head of the Electrical Engineering school, and also Eugene Shinert, a consultant and professor.

McPherson asked that the University of Florida, Ray C. Jones, Librarian, Gainesville, FL 32601 be sent a complete set of DSA materials with a note: "Hold for consultation with R. McPherson". After the material arrives, he will explain it to the librarian. Editor should add this name to his mailing list of future Bulletins.

Linton & McPherson talked of the new proposed calculator. McPherson more than willing to be our technical consultant and help as he can with the pre-design, programming, displays, etc. He suggests possible assembly of the bread-board by students at the University. Linton told him the Board had allowed him \$50, for telephone calls and postage for work on the calculator, with Alley Malacosta of Costa Mesa, CA.

At the present, McPherson does have some time to review technical articles before their publication by the Editor, and he also volunteered to answer inquiries received by the Secretary concerning the metric system, DSA, etc. Linton will forward copies to him for reply as applicable.

The afternoon passed all too quickly, we dropped McPherson off at his home at 1030 NE 3rd St., Gainesville, and visited a short time with his charming mother Ruth, a retired elementary teacher. We are going to miss the tree-lined streets and brick University complex, the bushy palms and pine trees, and friendly Floridians.

I will remember the 1½ hours delay at the Los Angeles International Airport before our 747 Delta was allowed to depart (because there was no water aboard); the 1½ hour delay landing at Jacksonville, (because there were deer on the runways); and the interlude at Las Vegas, Nevada at 2 to 7 a.m. due to the closing of the Los Angeles Airport and fog on the return trip to California. All is well that ends well though. The meeting was a joy and worth while.

Respectfully submitted,
Frieda Butler, Secretary



(L-R) Charles Bagley, Chairman of the Board; Henry Churchman; Frieda Butler, Secretary; Miriam Bagley-- shown at the DSA meeting in Jacksonville, FL, Saturday October 12, 1974.

*The following was composed in 1974
by F. Emerson Andrews:*

RALPH HERBERT BEARD, 1890--1974

Early in the morning of October 7 Ralph Beard was driving on Florida Route 90 on his way to the annual meeting of the Duodecimal Society in Jacksonville. About 35 miles north of that city he collided with a Trailyways bus. There were massive internal injuries and cranial damage; death was probably instantaneous. Mr. Beard would have been 84 three days later, on October 10. His car was demolished. There were no injuries requiring hospitalization on the part of the bus driver or the passengers.

His son-in-law, Robert C. Lloyd, made the necessary funeral arrangements in accordance with directions Ralph had left in a letter to his estate executor. Burial is in a crypt with his daughter Betty at the Lorraine Park Mausoleum in Baltimore. A family memorial service was held at the home of a grandson in Durham, North Carolina, on October 18. One of the tributes at that service ended with these words:

A remarkable man is gone. His impact on all of us will live on... He usually sent you off from a contact or visit with a "God Bless You." As Ralph Beard proceeds to his new journey, we offer to him a God Bless You--and keep you all the days.

Born in York, Pennsylvania in 1890, Mr. Beard spent most of his business life with the New York Telephone Company, where he was a telephone service engineer.

Though Ralph Beard had many interests--including being the first Staten Island president of the world federalist movement and promotion of Esperanto--his heart and nearly all his free time were given to the Duodecimal Society during his final thirty years. He was a member of its Board of Directors from the Society's first meeting in April 1944 and was on his way to the 1974 Board meeting in Jacksonville when he met his death. He was secretary (and in the early years also treasurer) for 17 years; president for two, 1953 and 1954; and editor of The Duodecimal Bulletin from its first issue in January 1945 through 1949, and again from 1955 to 1965.

How all this came about the Society's records and some of my own correspondence make clear. In 1941 Ralph chanced upon a copy of my book New Numbers and wrote to me via the publisher:

Dear Mr. Andrews:

In consideration of our mutual interest in duodecimals, I would like to have your response to certain questions that have occurred to me.

As a result of the current war, there will probably be established an international government of some type or other. This may reasonably involve the establishment of an international coinage, new standards of weights and measures, and an integrated telephone service. All of these stress the importance of making rapid progress in the education of the public in the advantages of duodecimals.

Hence, my questions. Is there an organization for this purpose? Can you give me the address of its correspondent? Is it national or international?

If no organization exists, I would like to help, unprofessionally, in starting one. I am forwarding letters similar to this to the names following. (Messrs. Terry, Seely, Perry, Rear Admiral Elbrow.)

Yours truly,

Ralph H. Beard

We informed Mr. Beard that since 1934 a small group of us had been regularly corresponding, informally called ourselves The Duodecimal Society of America, and one member George S. Terry, had in 1939 proposed more formal organization, a Bulletin, and agreed to finance its beginnings if we could find an organizer. In Mr. Beard the Society had indeed found its organizer, its human dynamo. By 1944 we were incorporated and fully operating. Ralph was executive secretary and editor of the Duodecimal Bulletin, the first issue of which was dated January-March 1945. By 1947 his work had been so outstanding that the Society unanimously voted him its annual award "for his significant contributions to duodecimal literature, especially in the field of weights and measures, and for his invaluable services to the Society as its Secretary Treasurer

and as founder and Editor of its Bulletin."

Both as secretary and as editor "Whiskers" (as he always signed himself to those of us who knew him) carried a tremendous correspondence. His office also supplied reprints of duodecimal articles and other promotional material to learned societies, to schools, to many individuals, running into the thousands every year. He made the arrangements for most of the annual meetings. The warmth and humor of his letters, and personal contacts when these were possible, have been invaluable in holding together the very diverse group which compose the Society membership.

Ralph Beard was himself a frequent contributor of mathematical articles to the Bulletin, which have numbered nineteen, two in collaboration, and totaling some 90 pages. The first of these appeared in the Bulletin's second issue, in June 1945, and was titled "The Do-Metric System: A Dozenal System of Weights and Measures."

In one of the last issues which he edited--Volume 17, Number 1, December 1964--he published his own "Duodecimal Perspectives," portions of which may serve as his own appraisal of the progress and problems of the movement to which he made a contribution which is beyond praise.

My own close involvement with the active development of the dozen base spans a period of about two dozen years. As that period began a surge of creative activity had been under way among a small group of duodecimal enthusiasts for a little more than six years. But the general mathematical literature held little comment about duodecimals, and they were largely disregarded in mathematical instruction.

The picture is far different today. We can appropriate credit for a considerable portion of the enlarged public acquaintance with the 12-base to ourselves. But most of the intensified emphasis on the preferred bases for numeration is clearly traceable to the fantastic development and growth of the calculating machines...

Offsetting this type of recognition, is the noticeable trend to decimalization of the national currencies. We dozenophiles are quick to react to this as a regrettable error that will some day need

to be corrected...The source of the error lies in the gigantic miseducation of the general public in the idea that the decimal base has some scientific advantage of its own...

There has been no great flood of publicity for duodecimals recently...We need your voluntary support and your initiative in the production of original ideas.

--F. Emerson Andrews



Ralph Beard in 1969.

NEWS FROM GREAT BRITAIN

Shaun Ferguson, Secretary of DSGB and Editor of the JOURNAL, writes to say that it will be out soon. He also informs us that the new Secretary/Treasurer/Editor will be Don Hammond. Congrats.

Arthur Whillock, the Information Secretary of DSGB, also wrote to add that Shaun is hard pressed with teaching and a young family. They both send regards and best wishes to all in the DSA.

DUODECIMAL SOCIETY OF AMERICA

Annual Meeting Report 1975

4728 Cielo Drive
Huntington Beach, CA

General Meeting (December 28, 1975)

The 1975 meeting of the DSA was called to order at 1:20 p.m. by Tom Linton, President at 4728 Cielo Drive Huntington Beach, CA. Also present were members Charles S. Bagley, Frieda R. Butler, Jamison Handy, Jr. and guest Miriam Bagley, and Matthew Kennedy.

The President recently received dues from Tim Rozena, Henry Weber, and Lois Brualdi. Susan is still mailing out the Excursions. What Tom pays her includes postage. The Huntington Beach office checking account has a balance of \$240.84. A total of 683 Bulletins and Excursions were mailed out in 1975 (less than the previous year).

Information received from Eugene M. Scifres, Treasurer is that the Denver funds are the same as last year plus interest. Linton moved and Bagley seconded that the Treasurer send out membership renewal bills annually beginning in November and before February of each year...

Bagley paid his 1976 dues to Tom Linton. Handy reported his new address as: 17726 Castellamare Drive, Pacific Palisades, but requested that all mail for him be sent to P.O. Box 1111, Pacific Palisades, CA 90272.

The Society has had no word from Emerson Andrews this year. Hays & Hays (attorneys in the Beard estate) need his (Andrews) Social Security Account number. Tom Linton moved Bagley seconded that members' social security account number be added to the application blanks in the future. Discussion: Butler suggests we have Churchman review the Privacy Act of 1974 (5 USC 552a, PL 93-579) and its effects on the personal information we require of members. Specifically, if we have the right to ask for the social security number and what phrasing of this request for personal information should be on our membership application. Churchman is to report back to the President.

Linton read a letter from Churchman suggesting a bigger meeting in April or May of 1976. The Board class of 1978

is Andrews, Churchman, Handy, and Scifres.

The President read the minutes of the October 13, 1974 meeting in Florida. Bagley and Churchman were re-elected to fill the Beard & Beaver spot on the Board in 1974. Linton proposed that we accept the general and board meeting minutes as read.

Handy moved Bagley seconded that a nominating committee be appointed by the Chairman to fill Beaver's and Beard's vacancy on the Board. Handy was named as Chairman of the Nominating Committee. It was suggested that the following members be contacted: James Dixon, Gene Zirkel, Theodore Baumeister, Joseph Celko, Peter Andrews, Thomas Goodman, and Marian Kron to ask if they would accept nomination. Handy will contact these and/or other members and report back to the Board.

Nominations are also sought for the position of Secretary. Due to many other commitments, Butler has submitted her letter of resignation from this position. She was asked to fill this vacancy temporarily, pending replacement...

By arrangement of Churchman and telephone approval of the Board, all DSA material was moved from Beard's home in Kentucky to 10 State Street, Council Bluffs, Iowa. The Society was named 1/7 beneficiary of the estate of the decedent along with his six relatives. The latest information received was that the estate had been sued by a man and his wife who were on the Trailways bus at the time of the Beard accident. This has and could tie up settlement of the estate indefinitely. It was suggested that Churchman contact Hays & Hays for recent developments in this matter.

The other action items from the 1974 meeting still pending were referred to the 1976 annual meeting. Location and time of the April or May 1976 meeting will be finalized later. Handy suggests we continue the policy of having our annual meetings in various parts of the country. Any member interested in hosting a DSA meeting should contact the President. The meetings in San Diego, Santa Barbara, and the west have been well attended.

Respectfully submitted,

Frieda R. Butler

Help!

Does any member have information pertaining to the Annual Meetings of 1976 through 1980? Any assistance you may be able to provide would be most appreciated.

We have a smattering of material relating to the period: an agenda here, a list of Officers and Board Members there. But in no case are our facts complete, and we lack details, photos and informal chit-chat from all five gatherings. Copies of the minutes of these meetings would be very helpful. If you do not wish to part with your copy, a xerox would be quite adequate. We can arrange to return photographs, etc., upon request.

Data sent in to us will be compiled and published in subsequent issues of the Bulletin. Thanks very much.--PZ

WHAT'S IN A NAME?

At the annual meeting in NY in 1979, our then Vice President, Henry Churchman, spoke about the new symbols that the telephone companies had added to their instruments, namely * and #. We all knew that the former was named an asterisk, but no one could name the latter. We knew of its uses as a pound sign, a number sign, a musical sharp, and a proofreader's space, but none of us could name it.

Intrigued by this, I began what was to become years of research. I contacted the telephone company, music houses, printers, crossword puzzle editors, map makers, and etymologists. I looked in various dictionaries and many books on symbols. Nothing!

Now, finally, through the help of a friend who works for the telephone company, I have found it. It is called an *Octothorpe*. All the telephone companies seem to use this term with the exception of NY Telephone (which uses no name at all); and you have just joined the small percentage of people who now know this name.

The next question of course is *Why "octothorpe"?* "Octo" means eight, and "thorpe" means village. The eight probably refers to the eight lines extending from the central quadrilateral. But "thorpe"??? - Gene Zirkel

OBITUARY

F. EMERSON ANDREWS 1902 - 1978

F. Emerson Andrews, co-founder of the DSA together with Ralph Beard and George S. Terry, died at the age of 76 on August 7, 1978.

It was in 1941 in correspondence with Beard about Andrews' book New Numbers (Harcourt Brace, 1935), that the seeds of the Society were planted (See Beard Obituary this issue). Andrews' affiliation with the DSA was to last for the rest of his life. He was President of the Duodecimal Society from its founding in 1944 until 1950 when he became Chairman of the Board. During 1944 the first of the Society's Annual Awards was presented to him "...as a pioneer in the use of base twelve and as an author of many articles on duodecimals..."

For many years, Andrews was director of publications and philanthropic research at the Russell Sage Foundation. There he "...won a reputation as the country's leading 'foundation watcher', a man who probably knew as much as anyone in the country about how tax-exempt organizations worked and where they got and spent their funds." (NY Times, Aug. 9, 1978) Later he organized, and then was named Director and President of, the Foundation Library Center. He also served as a consultant for the National Science Foundation.

A native of Lancaster, PA, Andrews resided in Tenafly, NJ, and sat on that city's Planning Board from 1936 to 1962. He was a prolific freelance writer, and his over 30 books and countless articles dealt with a variety of subjects, not the least of which being his lifelong love of duodecimals.



F. Emerson Andrews at the 1967 DSA meeting, Council Bluffs, Iowa.

DOZENAL JOTTINGS

From time to time, we will excerpt points of interest from letters and other sources -- so here goes....

ANTON GLASER writes from PA State U. that he has resumed active research into NON-DECIMAL NUMERATION. His History of Binary and other Non-Decimal Numeration will be published in revised edition by Tomash Publishers. He also has begun a masters degree in computer science. (But what does he do with his spare time?) Good Luck, Tony...

CHARLES S. BAGLEY wrote with some thoughts contra metrication from Alamogordo, N.M...it seems WILLIAM C. SCHUMACHER had similar thoughts in Cherry Hill, NY...SHAUN FERGUSON writes from Carisle for the DSGB that he is hard at work on their Journal...In New Zealand, BRUCE MOON and H.W. STEELE Contributed thoughts to the ongoing debate over symbols for decimal 10 and 11...HENRY CHURCHMAN'S son JOHN wrote from Council Bluffs, Iowa, that "Dad...was elated when I told him that all of the (DSA) material would now be in a central place." (See "From the Presidents' Desk", this issue)...

The National Council of Teachers of Mathematics requested and received Dozenal material for their convention held at Honolulu, Hawaii, this summer...DUDLEY GEORGE wrote of his recent move to Vashon, WA...Also heard from RITA GILLIGAN, Floral Park, NY and REV. JOACHIM WATRIN, Collegeville, MN...JOHN STEELE wrote from Saskatoon, Saskatchewan, Canada, and enclosed an example of musical notation, using dozens and the sol-fah method, which bears further study. Any dozenal musicians out there?...The name JOHN SELFRIDGE (DSA Bd. of Dir.) keeps popping up. Recent appearances included: The American Mathematical Monthly, Oct. 1981, Vol. 88, No. 8, p. 614; and Mathematics Magazine, May 1981, Vol. 54, No. 3, p. 141...

Many, many members expressed deep regret at the Society's recent loss of past President, TOM LINTON. Among the writers were RAYMOND FARR, Santa Ana, CA who had the sad duty of informing us of Tom's passing. Others were ANTON GLASER, CHARLES BAGLEY, BILL SCHUMACHER, ARTHUR WILLOCK (DSGB), and BRUCE MOON and H.W. STEELE, both of New Zealand.

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On a happier note, Let us hear from you as to studies, research and other Dozenal doings!

EGGSACTLY, *continued*

We had invented, so we thought, a new numeration system. Our "digits", with the corresponding decimal equivalents were:

1 2 3 4 5 6 7 8 9 * #

1 2 3 4 5 6 7 8 9 10 11

To convert a "base twelve" numeral to the "base ten" numeral naming the same number we simply took each "base twelve" digit and multiplied it by its "base ten" value. The number represented by 2*# twelve would be represented by 430_{ten}. This was arrived at by multiplying 2 by 144, and the # (11) by 12 and the * (10) by 1 and then adding the products.

To convert a "base ten" numeral to the "base twelve" numeral naming the same number was, for us, somewhat more complicated. We had to decide how many crates (1728 eggs) we could make up from our "base ten" representation of the number, then subtract this from the total number of eggs. From the eggs left, we would make up as many gross (144) as possible, from the remaining eggs as many dozens as possible and the number of eggs left gave us the rightmost digit. For instance, the number of eggs represented by 3300₁₀ is also represented by 1*#0₁₂. This is arrived at by noting that one crate, (1728), can be formed from 3300 leaving 1572, ten (*) gross can be formed leaving 132 to be accounted for. 132 make up eleven (#) dozens leaving (0) to be accounted for.

I was chagrined, some time later, to learn of a simple method for converting a base ten numeral to its equivalent in any other base.††

This "story" having been told, I introduce the name duodecimal, do some examples of conversion from one base to the other and finish up with some problems in addition and multiplication.

Continued

†† See Manual of the Dozen System, p.1*, DSA, NY

Introducing the students to number bases other than ten or twelve is now readily accomplished. They seem to now be able to "let go of" base ten and begin to "think" in any base that may be suggested. I have used this approach for many years and seldom have found a student not able to reach an understanding of number bases.

INCHES RETURNED TO THE AUSTRALIANS

The imposition of a ten-based metric system upon the Aussies has failed. Australia has joined with Japan and England in the repeal of legislation which outlawed the use of units other than the awkward ten-based metric units. We rejoice with our brothers and sisters "down under" as the 2½ years old ban is set aside. - CZ

Our Spring 1982 issue of the Bulletin will include:

An article by Jay L. Schiffman of Kean College in Union, NJ, entitled, "A Group Theoretic Application of the Number Twelve."

Reports of the DSA Annual Meetings of 1976 through 1978 (space permitting).

An article on some of the dozenal accomplishments of past-President, Tom Linton.