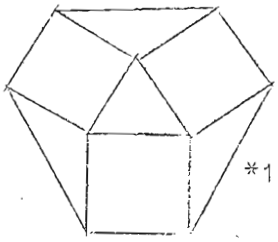
D U O D E C I M A L

N E W S C A S T

The Duodecimal Society of Great Britain,
(Incorporating the Duodecimal Association)
155, Leighton Avenue, Leigh-on-Sea, Essex.



Year 8
No.1
May
*1172 (1966)
price
1 shilling

C O N T E N T S

E D I T O R I A L

"Some time ago, Sir Iain Moncreiffe and I decided - quite in isolation - that we should "duodecimalise" and that the formation of a society was the way". That was the start to a letter dated eleventh November that the Secretary was quite surprised to receive from Lt. Col. A.E.H. Campbell, Hon. Secretary of The Duodecimal Association. It was then agreed that the Societies should amalgamate, and that Sir Iain Moncreiffe should become the President.

This is yet more evidence that original thought on our numbering system leads conclusively to prove that the only rational way to count and to measure is by twelves. It will give fresh heart to our Members and Supporters to do something to forward the cause.

The announcement of plans to decimalize British currency came too late to be covered in this issue. The next issue will consider how we can make use of the advantages in the situation. Any comments for printing will be welcomed.

LETTER FROM OUR PRESIDENT

Easter Moncreiffe,
Perthshire.
10th February, 1966.

Ladies and Gentlemen,

I feel it a great honour to have been invited to be President of the Duodecimal Society of Great Britain, and accept the office with pleasure.

Decimals were the bane of my life at school, especially during the periods when I was sent to be educated in Switzerland and Germany. I couldn't have agreed more with Lord Randolph Churchill about "these damned dots".

We nation of shopkeepers have long had the common sense to work in dozens and grosses - both so easily divided into quarters and thirds as well as halves. We owe a vast debt, of course, to the ancient Indians who gave us what we call Arabic numerals to replace the clumsy Roman system. But we should perhaps be even more grateful to the ancient Chaldaeans who divided the hour into a neat duodecimal 5 dozen minutes (sixty minutes) instead of a clumsy decimal 5 tens of minutes (fifty minutes): and the day into 2 dozen hours.

For, if we had a truly decimal hour of fifty minutes, who could ever break it up into natural quarters and thirds? "I'll only be a quarter of an hour or perhaps twenty minutes" would have to become "I'll only be 12.5 minutes or perhaps 16.666 recurring".

With every good wish for the success of our sensible society for the advancement of progress - out of the decimal into the dozenal Age - from:

Iain Moncreiffe of that Ilk.

The Duodecimal Society of Great Britain

Seventh General Meeting

held at the Raglan Hotel, London W.C.1. on 4th January 1172.

Present Sir Iain Moncreiffe - President B. R. Bishop - Secretary
R. Carnaghan - Vice President J. E. Barragan - Member.

Apologies for absence were received from F. Ruston (Chairman), who was ill, and three members.

1. The President

Sir Iain Moncreiffe was welcomed as President of the Duodecimal Society of Great Britain.

2. Minutes of last meeting

The minutes of the Sixth General Meeting were passed and signed by the Vice-Chairman.

3. Matters arising from 6th Meeting

3.1 Duodecimal Encyclopedia

The compendium of facts relating to base twelve theory and application and other number bases was progressing in draft form. (Last minutes item 1.3) Comments from members of the Council were to be taken into account.

3.2. Publicity to Librarian

The list of London librarians to be circulated with copies of 'Duodecimal Newscast', promised by Mr. Deacon was still awaited. (Last minutes item 1.4).

It was agreed that it would be more appropriate to circulate University Libraries.

3.3. Publicity: "small ads"

Mr. Ferguson was not present to report progress. (Item 2.3)

3.4. Publicity: to suitable people selected from "Who's Who".

Mr. Ruston was not present to report progress. (Item 2.4)

4. Events in 1179

4.1. The Duodecimal Association

The Secretary of the Duodecimal Society of Great Britain had agreed with the Secretary of the Duodecimal Association that the former would incorporate the latter.

4.2. Publications: 'Decimal coinage, a lost cause?'

During the year the book 'Decimal coinage, a lost cause?' by Mr. B.A.H. Cook and Mr. K. F. G. Mears was published, providing the first objective comparison of the costs of a reform to decimal and dozenal currency.

4.3 Publications: 'An introduction to number scales and computers'

Mr. F. J. Budden in his book 'An introduction to number scales and computers' had an objective and informative chapter on the dozenal system, mentioning the British Society.

4.4 Membership

The slight fall in subscriptions reflects the fall in new and renewed memberships over the past year.

4.5 'Duodecimal Newscast'

Two issues had appeared in 1179.

4.6 General effort.

The Hon. Secretary expressed his regret that, because of work at office and home, he had been unable to supply as much effort as he would have liked. This threw into relief the lack of effort on the part of most members.

5. Finances

The statement of accounts was presented, discussed and accepted.

It was agreed that they should be published in the next edition of the 'Duodecimal Newscast'. (See p. 9)

Members were reminded that they have the right, in the absence of professional auditing, to inspect the accounts for themselves.

6. Election of Council

The Council had held two formal and two informal meetings in 1179.

It was agreed that the Council for 1180 should be constituted as for 1179, viz.: Chairman - F. Ruston, Vice-Chairman - R. B. Carnaghan, Secretary and Treasurer B.R.Bishop, Information Secretary - S. Ferguson.

Members of the Society were urged to offer themselves to take their share in the direction of the Society as Council members for a period.

7. Policy for 1180

It was agreed that everyone be encouraged to advertise the advantages of twelve-based arithmetic whenever and wherever possible.

8. Other business

8.1 Digits for ten and eleven

Mr Halcro Johnston's motion reproduced on p 2 was discussed. It was agreed, in view of the unrepresentative number of members present, that the motion be published in the next Newscast, that opinion be invited for publishing in the following Newscast to that, and that the matter be opened to voting at the time of the next General Meeting in accordance with Rule 8, permitting voting by post or by presence.

8.2 Honorarium The Hon. Treasurer proposed that an Honorarium of 10/- be given to Miss Mary Williams as a token of gratitude for typing and duplicating all our journals and most of our publicity matter, and as a token of our best wishes for a happy marriage. The meeting agreed to the proposal with the amendment that the sum be increased to 20/-.

Cont'd. on page 9.

INCHES AND MILES

More Metric Than French Metres!

By Henry Clarence Churchman, B.A., LL.B.

Can we, as prudent persons, safely base our new dozenal unit of dimension on the international yard, which is dependent on the metre, which is based on a certain number of krypton 86 light waves? Inches and miles will never disappear, but it is doubtful that we can risk the definition of a great circle of the earth on the present international foot. Today's international inch, metre-defined, contains 41,929.3987 krypton 86 atomic light waves only so long as the metre remains equal to 1,650,763.73 such wavelengths.

If one were properly to set up an independent system of mensuration, it should be based NOT on the metre, which is always itself subject to possible change. Perhaps it can be based, for permanency of comparison, on the foundation that now supports the metre and appears to be an invariant - krypton 86 atomic light waves.

If we should move entirely away from our present definition of the international yard, and describe it independently, together with the foot and inch, in terms of krypton 86 atomic light waves (as we do the metre), our English inch could well be enlarged by not quite so much as 14 kr. 86 wavelengths, to total 41,943-3/11 exactly. Unless one is highly trained and has the necessary equipment to measure this small difference, the atomic-defined inch will appear to carpenters and cabinetmakers equal to the present inch, but this change would stretch our international or Canadian mile by perhaps one and three-quarters feet. In other words, a carefully surveyed distance across North America equal to 3001 Canadian miles would be quite precisely equal to 3000 Canadian atomic-defined miles.

English Metric System Now Possible

If you would place exactly 44 such atomic inches in a new dozenal unit of length, it will equal 1,845,504 kr. 86 atomic waves, equal to the dozenal metric dimension which has been called one "dometron". This important last cited number can be divided by 12 again and again, resulting in whole numbers until we get down to 7-5/12 krypton 86 light waves. It is known, and can be proven, that exactly 7-5/12 times the 12th power of 12 krypton 86 atomic light waves is equal to one Great Circle of the Earth.

If we should put one gross (144) "dometrons" into a new dozenal dimension unit, which for identification here we may call one "edon," it will be found quite precisely equal to one-tenth of the present International or Canadian mile. Actually, it is about 1/3000th part greater, or slightly more than 2 inches longer.

But more important, the present one-tenth Canadian mile, or 528 international feet, increased by only two and a fraction inches (Com-

nonwealth and U.S. motor vehicles can continue to measure all traveled distances by the present one-tenth mile) is equal to the length of a Great Circle of the Earth when that one-tenth mile is multiplied by the fifth power of one dozen. Here now is a small wedge to open the tightly closed eyes of both the metric and nonmetric worlds.

No longer need anyone wonder why Englishmen so tenaciously hold to their inches and their land miles. With some exceptions, they kept their feet on the ground in the great English tradition, although legally free for over five score years to use such parts of the decimetric system as pleased them. Let us examine possible uses of the English unit lengths of 44-inches and the one-tenth mile.

We could in aid of navigation, and I believe eventually must, adopt one dozen atomic-defined one-tenth miles as our international "Aero" mile. This aero mile has been called one "Nante" or a simple "Air-mile" to distinguish it from both the land and nautical miles. An important and increasing segment of our total transportation now rides in the atmosphere.

This "Air-mile" multiplied by the fourth power of one dozen is equal to the length of one Great Circle of the earth. One aero mile or Nante is equal to 6,336 English atomic-defined feet, and is equal also to the arc of $62\frac{1}{2}$ seconds of angle of a Great Circle of the earth. Thus, as 60 seconds of angle of a great circle is said to equal one nautical mile (1852 metres), the aero or air mile, counting by dozens, is the equal of 1000;0 dometrons exactly. That is to say, one dozen, dozen, dozen dometrons.

We can divide and subdivide the length of a Great Circle of the earth (as with the face of a clock) into twelve equal parts again and again, and find, for instance, that one Great Circle when multiplied by the minus fourth power of twelve is the equal of one aero mile. Stated another way, one great circle of the earth is equal to 10,000;0 (one dozen, dozen, dozen, dozen) aero miles even, with no fractions.

Will 1852 metres multiplied by any power of ten equal the dimension of a great circle? Think of this before you court the decimetric system. This is a glaring flaw in the French present metric system, wherein it lacks capability. The metre is not now regarded as 1/40,000,000 (nor the kilometre as exactly 1/40,000) part of a Great Circle of the earth - or of anything else.

Inches Inherit the Earth

All Englishmen may still employ their ancient system of dividing shillings, in dividing the circle, as well as in dividing an aero mile on land, on water, and in space; and enjoy a decent period of time in each separate industry, in which to change to the English Krypton 86 dozenal metric system. After the change-over, they will still count by dozens and gross. This microscopic modification of our inch might

greatly aid civilian navigation and transportation in the air and on water immediately, replacing the nautical mile by an aero mile, with an equal employment of that same dozenal unit on land. It is not too difficult to convert our astronomical almanacs as we print new ephemerides, until such time as astronomers rejoice in the dozenal system of angles, tied to our dozenal divisions of a day. In the meantime, we will retain all those dimensions cherished by Englishmen today.

In fact the whole English-speaking world, in a superior dozenal metric system of their own, might continue to employ interchangeably their well-known one-tenth miles (no need to change mileage meters in use today), their 44-foot American not uncommon street widths, and the 44-inch length (as well as the inch and all the present fractions of an inch), by merely increasing those presently defined lengths by no more than one in over 3000 equal parts. We have been asked to change our Yard more than that in times past and have survived.

Since eventually we may expect to derive our new cubic and liquid measures, and ultimately a new system of weights, from inch or dometron lengths, we should be extremely exact, as well as certain that our base is immutable. Krypton 86 atomic light waves, by which the metre is defined, are not unsuitable for describing our atomic-defined inch, and they are extremely exact.

The Krypton 86 dozenal metric system of lengths equal to 44 inches and the one-tenth mile can supplant the present metric system around the earth, as Englishmen now in authority begin to reflect their own thinking and freedom and power. It will surpass and outlast the present metric system (which is an unseaworthy land-measuring system) and ultimately compel its modification as presently urged by thinking Frenchmen able to rise above conformity, and who would doubtless welcome an English dozenal metric reform at this time.

Other peoples of the earth no longer need to count on their fingers, but can, as do Englishmen, conceive of the idea of one dozen units or one dozen parts. This dozenal capability is self-evident in the manner in which a 6-pack or twelve cans or bottles or eggs or scones are packaged and sold to the general public around the earth today. And so much is traded in the many multiples of twelve. Today's Englishmen can not recall a time when they found it difficult to group, package, or count by dozens. The world could never forgive them if tomorrow they toss away that outstanding national capability, only to drop to the mediocrity of decimetric conformity.

Definition of Dometron

The dometron length might be more accurately described today and better understood in a passing decimal age, by speaking in the Decimal tongue and employing an international language of great precision and ancient lineage, as follows:

Le dométron est la longueur égale à 1 845 504 longueurs d'onde dans le vide de la radiation correspondant à la transition entre les niveaux $2p_{10}$ et $5d_5$ de l'atome de krypton 86.

This rule follows the method employed by the Eleventh General Conference on Weights and Measures in defining the length of the international metre; and possesses the merit that it retains a practical relationship between the dometron and the metre for future comparisons.

The foregoing ideas are not unique or parochial. Mr. Shaun Ferguson, a member of The Duodecimal Society of Great Britain, Mr. Horatio W. Hallwright, a native Englishman settled in Victoria, Canada, Mr. Charles S. Bagley, a scientist of Alamogordo, New Mexico, President of The Duodecimal Society of America, the the brilliant M. Joan Essig of Paris, France, have each, independently of each other and of this correspondent, advanced in their own writings a not dissimilar system of metric measurements quite precisely equal to the 44-inch unit and the one-tenth English mile described above. They differ in their method of approach to a Great Circle and the names of their units. Since a million scientists might come up with a million different great circles of the earth, perhaps, with a great circle in the background, we could achieve greater accuracy by defining our basic dimension in atomic wavelengths.

The dozenal metric system is a vital thing today. No other scientific effort is more urgent or more basic than achievement of a dozenal unit of measurement more precise than the present metre. No other units of measure will bring so much glory to Englishmen and Americans as the "dometron" and the "edon" lengths, so expressive of the usefulness of British inches and feet now in service around the earth. The English inch always was intended to serve humanity, not to rule the world. It will continue in this role to the end of time.

The old and the new units possibly were forecast and preserved for us in the Magna Charta original document, written in 1215 on parchment which can now be said to measure one-third Yard by one-half Dometron (12 x 22 inches). The yard and the dometron represent two different dimension bases; the inch is common to both.

The dometron is not too foreign to grow on English soil. The diameter of the presently proposed tunnel beneath the English Channel, between Dover and Calais, is precisely 6 dometrons (22 feet).

(The above was submitted by H. C. Churchman, of Longview Farm, Route 3, Council Bluffs 51502, U.S.A., a Fellow of The Duodecimal Society of America, for exclusive publication by The Duodecimal Society of Great Britain. The opinions expressed are the author's own and do not necessarily present the view of either Society or of the persons whose names appear therein.)

Statement of accounts 1.1.79 to 29.10.79

The Duodecimal Society of Great Britain			shillings (dozenals)	£ s. d. (decimals)
RECEIPTS				
Balance Credit from 1178			1128.5	95 4 5
Subscriptions for 1178 Ordinary Members		20.0		
1179 " "		152.0		
Younger "		6.0		
11172 Ordinary "		40.0		
Younger "		6.0	202.0	14 18 0
Donations			£8.3	7 0 3
Sales (publications, slide rule)			52.6	3 2 6
Annual Bank Interest Deposit a/c		58.0		
Current a/c		26.5	82.5	4 18 5
			1547.7	125 3 7
PAYMENTS				
Postage			76.7	4 10 7
Telegram			23.6	1 7 6
Printing Newscasts		137.6		
Publicity matter		30.6		
Stationery		13.0	17£.0	11 19 0
Stationery			32.6	2 6 6
Publications			.6	6
Contribution to I.D.A. (twelfth of Society's subscriptions)			20.2	1 4 10
			298.£	21 8 11
BALANCE CREDIT TO D.S.G.B.			1242.8	103 14 8
International Duodecimal Association (Funds in D.S.G.B. account)				
RECEIPTS (Nil Payments)				
Balance Credit from 1178			571.£	40 5 11
D.S.G.B. contribution			20.2	1 4 10
BALANCE CREDIT TO I.D.A.			592.9	41 10 9
Combined Balance Credit to D.S.G.B. and I.D.A.				
Credit at Bank - Deposit account			205.0	72 5 0
- Current account			9£0.1	71 8 1
Credit in cash in hand			28.4	1 12 4
TOTAL			1821.5	145 5 5

29 December 1179

B. R. BISHOP. HON. TREASURER.

Cont'd from page 4.

8.3 Duodecimal Newscast It was agreed that the margin, particularly near the spine, of the 'Duodecimal Newscast' be increased.

9. General Discussion The meeting discussed a number of general matters. One was the impact on the public of the word "Duodecimal" generally and in the Society's name. It was thought best to use the word "dozenal" wherever possible, because it is shorter, avoids the root "Decimal" and, although new, can be more readily interpreted.

SUBSCRIPTIONS

Subscriptions for this year are now due. Please pay promptly and avoid wasting the Treasurers' time and expense in sending reminders that could better be used to the good of the Society. Subscription rates are still:-

Life Member	*200 s.	£(£14 8s. 0d.)
Ordinary Member	10 s.	£(12s. 0d.)
Younger Member	6 s.	
Subscribing Supporter	10 s.	£(12s. 0d.)

Subscriptions can be paid by Bankers' Order. Please note that the account number of the Society, which should be quoted in such transactions, is 519/90055/00.

DUODECIMAL PUBLICITY

'Freedom Review' - Feb 1178 - short review of Moon's and Kaar's book F.J. Budden - 'An introduction to number scales and computers' - (Longmans, 1179) - chapter "Duodecimal" (see review on p.) 'Lanchester Evening News and Chronicle' - 5 June 1179 - letter from Ian S. Chart. 'National Education' - Oct 1179 - The Journal of the New Zealand Educational Institute - article 'Civilisation have foundered for lack of skill in arithmetic" - B.A.H. Moon. 'The Modular Quarterly No. 3 1179 - reference to written contribution by D.S.G.B. to discussion "Shall the British Building Industry go Metric?" (20 March 1179) 'The Financial Times' - 12 December 1179 - letter by R.B. Carnaghan.

PROPOSAL ON THE SOCIETY'S DIGITS FOR TEN AND ELEVEN

Correspondence and discussion is invited on the following proposal by Mr. J. Halcro-Johnston. Comments will be printed in the next edition of the Duodecimal Newscast and the proposal will then be voted upon at the Society's next General Meeting. (See p. 4, para. 8.2)

Proposed that this Society reconsider the choice of the digits for ten and eleven and, as an interim measure, adopt symbols already available on the keyboards of all ordinary typewriters and typesetting machines, preference being given to those adopted by the Duodecimal Society of America.

(Please see next page for Mr. Johnston's supporting arguments)

Duodecimal arithmetic is at least 50% more efficient than decimal arithmetic and, for more than 200 years has been used by architects, surveyors, and builders. Why has it not been able to hold its own?

The answer undoubtedly is that no single digits for ten and eleven have been used. By using double figures for these numbers the great advantages of place-value have been lost and the arithmetic looks too forbidding. You cannot play a fiddle with two strings missing.

The first hurdle to be negotiated - and it is a formidable one - must be the introduction into everyday use of these single digits; and the simplest way to introduce them would be on the face of cheap clocks and watches and in books of tables for surveyors and architects, such as that of Mr. Foulden.

Clockmakers might be persuaded to introduce the digits as a novelty if guaranteed against loss but they would probably have less scruples in introducing well known symbols like X and E than our unknown ↊ and ↋.

Progress in duodecimal arithmetic will depend largely on its advantages being publicized and illustrated by letters and articles to the press. But difficulties in printing may quite well result in the rejection of an otherwise acceptable article or in its being printed in an unsatisfactory way and doing more harm than good. Difficulties in printing will also increase the cost of printing.

The digits ↊ and ↋ are in many ways ideal for the purpose, but what is the use of ideal digits if they cannot readily be printed? Because their digits, X and E, are more readily available the American Society would appear to have less trouble in printing their proceedings than we have.

This is a case where progress will be speeded up by taking two bites at the cherry; once the public have become accustomed to the use of single digits for all numbers up to twelve the choice of the most suitable design can be left to evolution.

J. Halcro Johnston.

Please send letters and articles on this and any other topics to the Hon. Secretary.

Book Review

AN INTRODUCTION TO NUMBER SCALES AND COMPUTERS - F.J. Budden (Longmans, Green and Co. -- December £1965) --*10.6s. (£12/6)

At last there is a book on the market which deals with number bases in a practical, instead of in a theoretical, content. Although the student in the V or VI form or Technical College for whom this is designed, will need to be keen to follow this book all the way through, even if he stops part way, he will have learnt a lot of practical knowledge.

An entire chapter is devoted to the duodecimal system. Whilst we may disagree in some of the details of presentation, on the whole it is a very fair treatment of the facts and arguments.

DUODECIMAL PUBLICATIONS, etc.

All available through the Society, and a penny in the shilling extra. Please obtain ∅ through shops.

Logical Money, Weights and Measures			free
Duodecimal Leaflet			free
Arithmetic made easier			free
R. C. Gillies Let's not go metric			free
Rules of the Duodecimal Society of Great Britain			free
Duodecimal Newscasts for *1174 (1960) to date	*1.0s		(1s.0d.)
Summary of New Duodecimal Notations (Offprint No.2)	*0.2s		(2d.)
S. Ferguson A revised Currency (Offprint 3) (2nd Ed.)	*0.3s		(3d.)
Duodecimal Metric Proposals (Offprint No.4)	*0.2s		(2d.)
Report of Duodecimal Summit Conference (Offprint No.5)	*0.2s		(2d.)
S. Ferguson Measuring Our Way (Offprint No.6)	*0.2s		(2d.)
New Duodecimal Notations and Names (Offprint No.7)	*0.2s		(2d.)
R.J. Hinton A Set of Symbols to facilitate the Mathematics and Practice of Dozens (Offprint No. 8)	*0.2s		(2d.)
D.A. Sparrow A suggested Series of Notations and Names (Offprint No. 9)		*0.2s	(2d.)
The One-Two-Three of Dozenals (Offprint Nos, 2, ς, 10) together		*0.6s	(6d.)
∅Prof. A. C. Aitken The case against decimalisation (Oliver & Boyd)		*2.0s	(2s.6d.)
F. Emerson Andrews An Excursion in Numbers			a few free
" " " Ekskurso en nombroj (in Esperanto)			a few free
Ralph H. Beard Antipatio al aritmetiko " "			a few free
∅J. Halcro Johnson The Reverse Notation (Blackie & Son)	*13.0s		(15s.0d.)
∅Jean Essig Douze notre dix futur (in French) (Dunod)	* 2.0s		(10s.0d.)
∅ " " La Duodécimalité: Chimère ou vérité future	* 6.6s		(6s.6d.)
Duodecimal Society of America Manual of the Dozen System	* 7.6s		(7s.6d.)
" " " " The Duodecimal Bulletin	* 3.6s		(3s.6d.)
∅F. Emerson Andrews Numbers, Please (Little, Brown-Boston, U.S.A.)	20.0s		(£1-4s.)
B.A.M. Moon & K.P.G. Mears Decimal coinage - a lost cause	* 1.6s		(1s.6d.)
Rubber stamp of insignia of D.S.G.B.	10.0s		(12s.0d.)

THE DUODECIMAL SOCIETY OF GREAT BRITAIN
155, Leighton Avenue, Leigh-on-Sea, Essex, England.

* denotes dozenal number
ᘔ represents ten
ς represents eleven.