## Technical and Bibliographic Notes/Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- [ ] Coloured covers/ Couverture de couleur
- [ ] Covers damaged/ Couverture endommagée
- [ ] Covers restored and/or laminated/ Couverture restaurée et/ou pelliculée
- [ ] Cover title missing/ Le titre de couverture manque
- [ ] Coloured maps/ Cartes géographiques en couleur
- [ ] Coloured ink (i.e. other than blue or black)/ Encre de couleur (i.e. autre que bleue ou noire)
- [ ] Coloured plates and/or illustrations/ Planches et/ou illustrations en couleur
- [ ] Bound with other material/ Relié avec d'autres documents
- [x] Tight binding may cause shadows or distortion along interior margin/ La reliure serrée peut causer de l'ombre ou de la distortion le long de la marge intérieure
- [ ] Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/ Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

- [ ] Coloured pages/ Pages de couleur
- [ ] Pages damaged/ Pages endommagées
- [ ] Pages restored and/or laminated/ Pages restaurées et/ou pelliculées
- [x] Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- [ ] Pages detached/ Pages détachées
- [x] Showthrough/ Transparence
- [ ] Quality of print varies/ Qualité inégale de l'impression
- [ ] Includes supplementary material/ Comprend du matériel supplémentaire
- [ ] Only edition available/ Seule édition disponible
- [ ] Pages wholly or partially obscured by errata slips, tissues, etc., have been refilmed to ensure the best possible image/ Les pages totalement ou partiellement obscurcies par un feuillet d'errata, une pelure, etc., ont été filmées à nouveau de façon à obtenir la meilleure image possible.

- [x] Additional comments:/ Commentaires supplémentaires: Irregular paging : [1] - 7, 10 - 17, 20 - 27, 30.

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

| 10X | | 14X | | 18X | | 22X | | 26X | | 30X | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 12X | | 16X | | 20X ✓ | | 24X | | 28X | | 32X |

ire
détails
es du
modifier
er une
filmage

es

e

errata
i to

t
e pelure,
on à

32X

The copy filmed here has been reproduced thanks to the generosity of:

National Library of Canada

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol —► (meaning "CONTINUED"), or the symbol ▼ (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:

L'exemplaire filmé fut reproduit grâce à la générosité de:

Bibliothèque nationale du Canada

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole —► signifie "A SUIVRE", le symbole ▼ signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.

| | | |
|---|---|---|
| 1 | 2 | 3 |

| |
|---|
| 1 |
| 2 |
| 3 |

| | | |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |

Copy Deposited
No 4456.

Can: Nixon, W. S.

# THE CREATOR'S

# DECIMAL SYSTEM.

ITS EXISTENCE THROUGHOUT THE ANIMAL AND VEGETABLE KINGDOMS.

DARWINIANISM EXPLODED AND A REVOLUTION IN FIGURES PROPOSED.

BY W. S. NIXON.

HAMILTON:
E. BARKER, BOOK AND JOB PRINTER, 8 JOHN STREET NORTH.

1888.

# INTRODUCTION.

IN order to show that some radical reformation is necessary in our decimal and tabular systems, one has only to glance at the financial and market reports of the monetary and commercial centres of the world, as they appear reflected in the leading daily newspapers. A very small fraction in the upward or downward tendency of the articles quoted in the money, stock or provision markets, means thousands—aye, millions—of dollars to the buyers and sellers. The reader will often, therefore, notice such quotations as "11 99-100ths." and 47 11-16ths." With the introduction of the decimal system proposed in this pamphlet, all these irregular figures—difficult, too, as they are to be understood—would be entirely dispensed with, and any price could be quoted in plain, simple figures. The use of eighths and sixteenths in the market reports is an unintentional application and introduction of this system—just as the pecking of an incubated chick at the shell surrounding it leads to daylight and freedom. Music and dancing have long been subservient to the quadratic and octave systems, and so have military manœuvres and the simplest squad movements. The quadratic and octave systems are the only means the printer has to numerate and keep track of the folios of his book, and without the square Archimides and Euclid would have cut a sorry figure, and Kepler, the great German astronomer and mathematician, would never have been enabled to compute the distances and dimensions of the surrounding heavenly bodies. Man, since the early dawn of civilization, has been constantly appropriating ideas from Nature, just as the first weaver took lessons from the spider, or as the first millwright modelled his dam after the plan of the beavers. So, too, are we only imitating the works of the Creator in adopting a decimal system that can be found in every pathway of Nature. The human thumb is not by any means a finger; it has a different direction of action, and has one joint less in its construction. If the thumbs had therefore been omitted in the simple reckonings of primitive man, the world and civilization would not now have to face the work of reorganizing mathematical calculations that for a time must lead to some confusion. The sooner, however, the work is commenced, the better it will be for future generations, as there is every prospect that, before a century or two, the English language will be the universal, as it is now the commercial language of the world. To improve it and make it perfect should therefore be the aim of every one who wishes to leave the world a few strides ahead of when he came into it.

THE AUTHOR.

# THE CREATOR'S DECIMAL SYSTEM.

The greatest drawbacks to the advancement of civilization are the legacies of the ignorance of the past, and it is only in new and progressive countries that any successful effort can be made to leave aside the highway of ignorance in order to adapt the requirements of the age to a better path. I was never more forcibly struck with this fact than in the year 1870, while ascending the Kaministiqua River, near Fort William, at the head of Lake Superior. An Indian path, leading to the high ground above the falls, wound its devious way through the forest for a distance of about three-quarters of a mile. The Indians had been in the habit of traversing this path from time immemorial, and along it they carried their canoes and luggage. In the year I speak of the Royal Engineers in Her Majesty's service shortened the distance by about half its length, by cutting a straight path up the hill. In many similar respects the world is held back by the customs and habits that have been handed down to us from prehistoric times.

In no respect can this be better illustrated than in what I now propose to explain. The world owes its present numerical system to the simple-minded calculations of prehistoric man in the remote ages previous to the invention of letters, and we received our units and tens from the digits on the hands of the calculators—from men who existed at so remote a distance from civilization that their minds were not sufficiently expansive to comprehend any large sum without the aid of their fingers. From the fingers and thumbs came 10; and, as calculative power advanced, so 10 tens became 100. As a proof of what I here assert it is only necessary to refer the reader to any one who has travelled in the far East, where numbers and civilization are supposed to have originated. The simple-minded Asiatic of to-day, as he sits in his bazaar, can be seen calculating on his fingers, as did his ancesters of 5,000 years ago. Even here in our own country, the little children of the schools, whose budding minds are nearly as fertile for calculation as the grown adult of the Orient, the same simple mode of calculation can be observed.

"But," an inquirer would ask, "is not 10 the proper round decimal, and how are you going to improve it?"

My answer is, No, and I now propose to take the reader into confidence and explain the result of a long and deep research into this matter—and let me here say, that the result of my discoveries, for the first time now made known, is the basis of all the calculations of the Creator in His construction of the Universe.

Had prehistoric man omitted his thumbs in his first calculations, he would have saved the world a vast amount of misery, and we would be to-day working out all systems of calculation on the basis adopted by the All-wise Architect of the Universe in the fabrication of the simplest worm that crawls, as well as in the architecture of His masterpeice—man. And the facts which I am here going to state are ample proof that the modern theory of evolution is rotten to the core, and without any foundation to stand on.

Had, as I said before, early man left out his thumbs, we would have had eight for 10, and sixty-four for 100 —that is, there never would have been the figures 8 and 9; we would simply count 1, 2, 3, 4, 5, 6, 7, 10, 11, 12, 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 27, 30, 31, 32, 33, 34, 35, 36, 37, 40, etc. By this simple arrangement sixty-four would be 100; thirty-two would be 40; sixteen, 20; and eight, 10. The half of ten would be, 4; the half of four 2; and the half of two, 1. The orignal 1 could be divided into decimals of 8, and the decimal of eight into sub-decimals still lower—in fact as low as you like to go, but always with octave numbers that would give equal parts.

You now would ask, "What is to be gained by all this? Can we not subdivide or multiply now in order to get any proportion we wish?"

To this I will say that you can; but you get irregular numbers in the simplest kind of calculation, and then you are carried into irregular fractions that lead to endless trouble. I hold that the introduction of my system into all tables of measures (and it can be easily done), will simplify calculations to such a degree that a child will become proficient in figures in one-quarter the time at present devoted to arithmetic. There would also be less brain-taxing and less insanity in the land, and the time saved from a simplification of figures could be devoted to the study of something else.

The reader may then say; "In the startout you say you have the authority of the Creator for your revolutionary proposition?" To this I answer that I have. And why is it that nearly everything that lives is constructed on a quadratic or octave basis? Why is every animal given four legs?—nearly every insect eight legs? Why has the caterpillar and the crayfish eight legs? Why has the centipede sixty-four legs? And why has his lesser type—the earwig—sixteen? Why has the octopod or cuttlefish eight arms? And why has each arm sixty-four suckers? Why has an ear of wheat, barley or other grain nearly always four rows? And why has an ear of corn nearly always eight rows? It sometimes has, in extraordinary growth, twelve and sixteen rows; but very seldom ten. Why has the armadillo eight shields on his back, and why are the sections of a turtle or tortoise shell octagonal? Why has man thirty-two teeth, divided into sections of four and eight? Why has he twenty-four ribs? Why has . horse and many other animals sixteen teeth, divided into sections of four? Why do we find the quadratic and octave systems adopted in the formation of the frame work of all living creatures? Why do the arm bones of man and their attachments number 64? Why do the leg bones and attachments number the same? Why are there just eight pieces in the breastbone of a young child? Why have we eight fingers? Why have most animals four or eight hooves? Why have all animals two, four and eight teats? Why have the numbers four, eight, sixteen, thirty-two and sixty-four so great a place all through the works of the Creator? Does it not show that His calculations are founded on a basis of equalization that cannot be improved? Then why should not man, His humble imitator, adopt a system that has the approval of the Almighty?

All species of Mollusca have eight legs, and nearly all birds have eight claws. If we go into the varieties of fruit and nuts we find that the pawpaw, the orange, the citron, the lemon, the pomgranate, the apple and hundreds of other varities of fruit and nuts are subdivided into fourths and eighths, while the foilage of almost all flowers is controlled by the same law. The canine and feline species of animals have. as a rule, sixteen toes, and the weather shells of nuts open into four sections. No matter where you search in Nature the same rule seems to hold good, and the more you search the more will you be satisfied that the quadratic or octave formations have been generally adopted. If the Creator has therefore taken four or eight as the basis of calculation in the formation of His wondrous works, how can man improve on it, or why should he deviate from so perfect a system?

If, then, there is a mathematical calculation in the construction of all living creatures, how can there be any connecting link between the species? If there are a given number of bones in the framework of a certain species, how can any connection exist between such a species and one whose framework is formed by half the number? As well might we endeavor to build a full-rigged ship with the same number of timbers, ropes, spars and spikes as would be required for a sloop; or build a four-story house with the same quantity of stones or bricks, timber and planks as would erect a one-story cottage. Evolution is a splendid fallacy to think over, but the history of Nature, as read in its own pages, is strongly adverse to it. The numbers of bones, etc., are the same in all living species where a freak of Nature has not taken place. Uniformity is the rule; irregularity the exception.

These are facts which Darwinianists cannot disprove, and these are facts which show the utter impossibility of a graduated evolution in the origin of species. When facts are sustained by figures there is no getting over them, and Darwinianism cannot upset the figures I here give, and which are palpable to everybody with their eyes open. If you want a confirmation of what I here state, go and examine for yourself. It took me years to make the discovery. The proof is now all around you.

"But," says one, "your proposition is very revolutionary. It upsets everything in the way of modern calculation.".

All right. Let modern calculation be upset, if it is founded on a wrong basis, and the sooner the better. It is about fifty years since Benjamin Pitman formulated his shorthand system. It lingered along under reverses for many years; but now it is taught in a great many schools. I, too, can wait fifty years. Pitman's system was very revolutionary; but revolutions that sweep away the cobwebs of the dark ages are necessary. The Western States of America are more progressive than any other part of the world, simply because they are not held back by existing legacies of former days. I know that the system I propose to introduce will be held in check by existing habits; but I am willing to wait. There is one thing about this system, however, that gives me encouragement. It is so simple and so easily understood, and it will save so much labor, that architects and engineers, and all others who are compelled to make very fine calculations, will very soon adopt it. It will be in their own interest that they do so. The riddance of irregular fractions, and the miscalculations they are apt to lead up to, will be a sufficient incentive in favor of my system.

I also know that, like many others who have trod the path of original discovery, I will be pestered with an army of improvers and imitators—these banes of genius, and pirates of originality. I am not afraid, however. I feel satisfied that my system will be so unique as to obviate the perils of discovery which have held back other original thinkers. But I do not claim to have originated anything. I have only solved the key which controls the calculations of the Great Architect of the Universe, from whom all good comes.

The main object at which I aim is the simplification and assimilation of all measurements, so that the world can go along much smoother than heretofore, and have less use for insane asylums. All are not born with the same capacity for the analyzation of abstruse calculations, and a simple arrangement like what I here propose, and of which the Creator is the author, will obliterate all complexities in figures, both to the child and to the adult. By changing the decimal to octaves in all measurements, those that are not already in that shape will be assimilated to those that are, and a uniformity will then exist in everything.

In the simplification of the subdivision of coin or money, how much better would it be to take the present dollar as a standard and divide it into sixty-four cents. Thirty-two cents would then be a half-dollar, 16 cents a quarter, 8 cents an eighth, 4 cents a sixteenth, and 2 cents the thirty-second part. The dollar would not be reduced, but the cent simply enhanced. The cent could be subdivided into 8 mills, and these mills into eighths, which would be one-sixty-fourth of a cent. In all equal divisions of any sum the subdivision would then be a regular amount, and all irregular fractions would be avoided.

In a similar manner a square mile of land could be taken as a basis, and subdivided into eighths. This would do away with such horrible measurements as that "$30\frac{1}{4}$ square yards make one square perch," and all the complexity that such measurements lead up to.

The degrees of the circle is another basis which requires reorganization. When one gets below an eighth of a circle, or 45 degrees, he is submerged into the mazes of irregular fractions, and this leads the mechanical engineer, the marine architect and many other skilled artizans into a vortex of endless trouble.

We owe the dollar and centime to the French and their revolution of the last century, and they also made many improvements in scales of measurements. That the dollar and cent was a considerable stride in the way of reform is evidenced by the fact that many young and rising nations have since adopted it. But it was not a perfect decimal system, and not until we copy after the Great Author of All will we have a system that will be faultless, and in this system eight is the basis, and not ten. As a proof that the old ten was unsuited for degrees of measurements, it is only necessary to refer to the old degrees of the tables of measurements—in none of which does it take a prominent part. The hundred weight of 100 lbs. is of modern origin, and was adopted in order to conform with 100 cents in the dollar, which is also of modern origin. There must, then, have been strong reasons for ignoring the old ten in lineal and all other measurements, and these reasons are found in the fact that when you get below the quarter of a hundred (25), you are immediately into a maze of fractions.

I now propose to give what I consider a perfect and uniform system of measurements—a system which will simplify all calculations, and one which will not only be understood by the youngest child, but which will give comparative proportions throughout, and therefore show the relations of calculation between different articles, be they liquid or solid, lineal or cubic, or the monetary proportions to the quantities of all. Before giving the tables, I will give a multiplication table on the octave basis, carried up to 20, or the old-time 16·

In carrying out multiplication so far, I consider it is a step in advance of stopping at the ordinary 12, as the child, being relieved of all former complex tables of measurements, can easily afford to tax its memory with a little extra multiplication. Of course, in this table the figures 8 and 9 become obsolete, and 10 takes the place of the former 8. The new multiplication table, as here given, will seem odd to the reader at first, but as the mind becomes accustomed to it the oddness will disappear. The eradication of the figure 9, too, will be a blessing in more ways than one:

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Twice | 1 | are | 2 | Three | 1s | are | 3 | Four | 1s | are | 4 |
| " | 2 | " | 4 | " | 2 | " | 6 | " | 2 | " | 10 |
| " | 3 | " | 6 | " | 3 | " | 11 | " | 3 | " | 14 |
| " | 4 | " | 10 | " | 4 | " | 14 | " | 4 | " | 20 |
| " | 5 | " | 12 | " | 5 | " | 17 | " | 5 | " | 24 |
| " | 6 | " | 14 | " | 6 | " | 22 | " | 6 | " | 30 |
| " | 7 | " | 16 | " | 7 | " | 24 | " | 7 | " | 34 |
| " | 10 | " | 20 | " | 10 | " | 30 | " | 10 | " | 40 |
| " | 11 | " | 22 | " | 11 | " | 33 | " | 11 | " | 44 |
| " | 12 | " | 24 | " | 12 | " | 36 | " | 12 | " | 50 |
| " | 13 | " | 26 | " | 13 | " | 41 | " | 13 | " | 54 |
| " | 14 | " | 30 | " | 14 | " | 44 | " | 14 | " | 60 |
| " | 15 | " | 32 | " | 15 | " | 47 | " | 15 | " | 64 |
| " | 16 | " | 34 | " | 16 | " | 52 | " | 16 | " | 70 |
| " | 17 | " | 36 | " | 17 | " | 55 | " | 17 | " | 74 |
| " | 20 | " | 40 | " | 20 | " | 60 | " | 20 | " | 100 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Five | 1s | are | 5 | Six | 1s | are | 6 | Seven | 1s | are | 7 |
| " | 2 | " | 12 | " | 2 | " | 14 | " | 2 | " | 16 |
| " | 3 | " | 17 | " | 3 | " | 22 | " | 3 | " | 25 |
| " | 4 | " | 24 | " | 4 | " | 30 | " | 4 | " | 34 |
| " | 5 | " | 31 | " | 5 | " | 36 | " | 5 | " | 43 |
| " | 6 | " | 36 | " | 6 | " | 44 | " | 6 | " | 52 |
| " | 7 | " | 43 | " | 7 | " | 52 | " | 7 | " | 61 |
| " | 10 | " | 50 | " | 10 | " | 60 | " | 10 | " | 70 |
| " | 11 | " | 55 | " | 11 | " | 66 | " | 11 | " | 77 |
| " | 12 | " | 62 | " | 12 | " | 74 | " | 12 | " | 106 |
| " | 13 | " | 67 | " | 13 | " | 102 | " | 13 | " | 115 |
| " | 14 | " | 74 | " | 14 | " | 110 | " | 14 | " | 124 |
| " | 15 | " | 101 | " | 15 | " | 116 | " | 15 | " | 133 |
| " | 16 | " | 106 | " | 16 | " | 124 | " | 16 | " | 142 |
| " | 17 | " | 113 | " | 17 | " | 132 | " | 17 | " | 151 |
| " | 20 | " | 120 | " | 20 | " | 140 | " | 20 | " | 160 |

| Ten | 1s | are | 10 |
|---|---|---|---|
| " | 2 | " | 20 |
| " | 3 | " | 30 |
| " | 4 | " | 40 |
| " | 5 | " | 50 |
| " | 6 | " | 60 |
| " | 7 | " | 70 |
| " | 10 | " | 100 |
| " | 11 | " | 110 |
| " | 12 | " | 120 |
| " | 13 | " | 130 |
| " | 14 | " | 140 |
| " | 15 | " | 150 |
| " | 16 | " | 160 |
| " | 17 | " | 170 |
| " | 20 | " | 200 |

| Eleven | 1s | are | 11 |
|---|---|---|---|
| " | 2 | " | 22 |
| " | 3 | " | 33 |
| " | 4 | " | 44 |
| " | 5 | " | 55 |
| " | 6 | " | 66 |
| " | 7 | " | 77 |
| " | 10 | " | 110 |
| " | 11 | " | 121 |
| " | 12 | " | 132 |
| " | 13 | " | 143 |
| " | 14 | " | 154 |
| " | 15 | " | 165 |
| " | 16 | " | 176 |
| " | 17 | " | 207 |
| " | 20 | " | 220 |

| Twelve | 1s | are | 12 |
|---|---|---|---|
| " | 2 | " | 24 |
| " | 3 | " | 36 |
| " | 4 | " | 50 |
| " | 5 | " | 62 |
| " | 6 | " | 74 |
| " | 7 | " | 106 |
| " | 10 | " | 120 |
| " | 11 | " | 132 |
| " | 12 | " | 144 |
| " | 13 | " | 156 |
| " | 14 | " | 170 |
| " | 15 | " | 202 |
| " | 16 | " | 214 |
| " | 17 | " | 226 |
| " | 20 | " | 240 |

| Thirteen | 1s | are | 13 |
|---|---|---|---|
| " | 2 | " | 26 |
| " | 3 | " | 41 |
| " | 4 | " | 54 |
| " | 5 | " | 67 |
| " | 6 | " | 102 |
| " | 7 | " | 115 |
| " | 10 | " | 130 |
| " | 11 | " | 143 |
| " | 12 | " | 156 |
| " | 13 | " | 171 |
| " | 14 | " | 204 |
| " | 15 | " | 217 |
| " | 16 | " | 232 |
| " | 17 | " | 245 |
| " | 20 | " | 260 |

| Fourteen | 1s | are | 14 |
|---|---|---|---|
| " | 2 | " | 30 |
| " | 3 | " | 44 |
| " | 4 | " | 60 |
| " | 5 | " | 74 |
| " | 6 | " | 110 |
| " | 7 | " | 124 |
| " | 10 | " | 140 |
| " | 11 | " | 154 |
| " | 12 | " | 170 |
| " | 13 | " | 204 |
| " | 14 | " | 220 |
| " | 15 | " | 234 |
| " | 16 | " | 250 |
| " | 17 | " | 264 |
| " | 20 | " | 300 |

| Fifteen | 1s | are | 15 |
|---|---|---|---|
| " | 2 | " | 32 |
| " | 3 | " | 47 |
| " | 4 | " | 64 |
| " | 5 | " | 101 |
| " | 6 | " | 116 |
| " | 7 | " | 133 |
| " | 10 | " | 150 |
| " | 11 | " | 165 |
| " | 12 | " | 202 |
| " | 13 | " | 217 |
| " | 14 | " | 234 |
| " | 15 | " | 251 |
| " | 16 | " | 266 |
| " | 17 | " | 303 |
| " | 20 | " | 320 |

| Sixteen | 1s | are | 16 |
|---|---|---|---|
| " | 2 | " | 34 |
| " | 3 | " | 52 |
| " | 4 | " | 70 |
| " | 5 | " | 106 |
| " | 6 | " | 124 |
| " | 7 | " | 142 |
| " | 10 | " | 160 |
| " | 11 | " | 176 |
| " | 12 | " | 214 |
| " | 13 | " | 232 |
| " | 14 | " | 150 |
| " | 15 | " | 266 |
| " | 16 | " | 304 |
| " | 17 | " | 322 |
| " | 20 | " | 340 |

| Seventeen | 1s | are | 17 |
|---|---|---|---|
| " | 2 | " | 36 |
| " | 3 | " | 55 |
| " | 4 | " | 74 |
| " | 5 | " | 113 |
| " | 6 | " | 132 |
| " | 7 | " | 151 |
| " | 10 | " | 170 |
| " | 11 | " | 207 |
| " | 12 | " | 226 |
| " | 13 | " | 245 |
| " | 14 | " | 264 |
| " | 15 | " | 303 |
| " | 16 | " | 322 |
| " | 17 | " | 341 |
| " | 20 | " | 360 |

| Twenty | 1s | are | 20 |
|---|---|---|---|
| " | 2 | " | 40 |
| " | 3 | " | 60 |
| " | 4 | " | 100 |
| " | 5 | " | 120 |
| " | 6 | " | 140 |
| " | 7 | " | 160 |
| " | 10 | " | 200 |
| " | 11 | " | 220 |
| " | 12 | " | 240 |
| " | 13 | " | 260 |
| " | 14 | " | 300 |
| " | 15 | " | 320 |
| " | 16 | " | 340 |
| " | 17 | " | [illegible] |
| " | 20 | " | 400 |

### LIQUID MEASURE.

Liquid measure is now adapted to a quadratic or octave scale, and will therefore require very little alteration; but in order to make it correspond with dry measure a few slight changes are made. As the best wheat now averages 64 lbs. to the bushel, a bushel or cental of 100 (64) lbs. should be taken as the basis of all grain measurements. The following table is given as an improvement on the old system:

Ten (8) gills one pint.
Ten " pints one gallon.
Ten " gallons one cental, (64 lbs.)
Ten " centals one hogshead.
Four hogsheads one ton.

### AVERDUPOIS MEASURE.

Dry—

Ten (8) grains one scruple.
Ten " scruples one dram.
Ten " drams one ounce.
Ten " ounces one pound.

Liquid—

Ten " pounds one gallon.
Ten " gallons one cental or bushel.
Ten " centals one hogshead.
Four hogsheads one ton.

### COIN MEASURE.

In order to give a proper decimal division of all coins, and in order to obviate fractions in all fine calculations, I propose to divide the present dollar into 100 (64) cents, the value of the cent to be enhanced, but the dollar to remain as it is. Another benefit to be derived from this change will be that, as all other measures will correspond in the scale of divisions, the value of any quantity can be found much easier than by the old system. If the pounds in a bushel or feet or inches in a scale, or any other form of measurement, correspond with the divisions of coin, it will be a very simple matter to find the relative value of any article, either in small or large proportions. And as the new system subdivides any number into equal proportions, no fractional calculations will be required. Table:

Ten (8) mites one mill.
Ten " mills one cent.
Ten " cents one dime.
Ten " dimes one dollar.

The execrable pounds, shillings and pence could also be simplified by adapting other divisions of coin to the half-crown, which is the eighth part of a pound.

CIRCLE MEASURE.

It was a great mistake to divide the circle into 360 degrees. The degrees of the circle sho' ld correspond with the hours of the day. In all mechanical calculations, when any division below the eighth of a circle is required, the scientist or artisan is at once dropped into irregular fractions, which not only gives him endless trouble, but also renders it impossible for him to make true calculations. In order to remedy this I propose to adopt the following scale:

100 (64) seconds one minute.
100 " minutes one degree.
400 (256) degrees one circle.

TIME MEASUREMENT.

100 (64) seconds one minute.
100 " minutes one hour.
40 (32) hours one day.

By such an arrangement ten (8) degrees of circle measurement would be equal to an hour of time, or the 40th (32nd) part of a day, and a navigator could tell, when the sun is at its zenith, not only the exact time of day, but also the point of longtitude at which his vessel was located. In all measurements of circles, too, correct distances could be struck, because if it was necessary to make a finer calculation than the second gave, it could be sub-divided into infinitesimal octaves, as so desired.

### ANNUAL MEASUREMENT.

By the present irregularity of the months of the year, the first half of the year is three days shorter than the second. In order to make an equalization I propose to run them as follows:

| | | | | | |
|---|---|---|---|---|---|
| January | 36 (30) | days. | July | 36 (30) | days. |
| February | 36 (30) | " | August | 37 (31) | " |
| March | 37 (31) | " | September | 36 (30) | " |
| April | 36 (30) | " | October | 37 (31) | " |
| May | 37 (31) | " | November | 36 (30) | " |
| June | 36 (30) | " | December | 37 (31) | " |
| | Total, 266.(182). | | | Total, 267.(183). | |

with leap year added to January.

### BUILDING MEASURE.

It will be a great advantage to Architects and Builders to have the lineal measure scale slightly modified. There is no sense in having 12 inches in a foot, or 3 feet in a yard; but as the foot has been adopted throughout the English-speaking world as a standard, I find it impossible to throw it out in order to adopt the decimal sub-division of a land-measure mile, as given further on. The existing foot must therefore be scaled as follows:

Ten (8) rays one line.
Ten " lines one inch.
Ten " inches one foot.
Ten " feet one rod.

### CUBIC MEASURE.

As cubic measure will necessarily have to be adapted to building measure, so will it be necessary to take the present foot measurement, with a difference of 10 (8) inches in the foot instead of the former subdivision of (12) inches. The table will therefore read as follows:

| | | |
|---|---|---|
| 1000 | (512) | cubic lines one cubic inch. |
| 1000 | " | cubic inches one cubic foot. |
| 1000 | " | cubic feet one cubic rod. |
| 100 | (64) | cubic feet one cube. |
| 200 | (128) | cubic feet one cord. |

LINEAL AND SQUARE MEASURE.

The old divisions of measurements for lineal, square or cubic measure are the most unreasonable and complex of all the relics of the dark ages that have been handed down to us, and the wonder is that no reformation has been attempted ere this. In order to relegate to the shades of obscurity such monstrosities as 9 square feet, 30¼ square yards, 5½ yards, etc., I have proposed the following scale as an improvement:

| | | |
|---|---|---|
| Ten | (8) | nails one link of $15\frac{15}{32}$ old inches. |
| Ten | " | links one chain. |
| Ten | " | chains one perch. |
| Ten | " | perches one furloug. |
| Ten | " | furlongs one mile. |

SQUARE MEASURE.

For land or square measure:

| | | | | | |
|---|---|---|---|---|---|
| 100 | (64) | square | nails one | square | link. |
| 100 | " | " | links one | " | chain. |
| 100 | " | " | chains one | " | perch. |
| 100 | " | " | perches one | " | furlong. |
| 100 | " | " | furlongs one | " | mile. |

It will be seen by all the foregoing tables that the octave principle is completely carried out, and that therefore all complicated amounts are completely thrown out. Such a reformation in all measurements would be a wonderful change for the better, and all multiplication, division or subtraction could be done in simple decimal that would save a vast amount of figuring and hard brain work. As simplicity is the thing most needed in mechanical measurements, there is no reason why there should be any delay in the general adoption of the octave principle as here given. It is all very well to say that our present scales were handed down to us from the Pyramids. Many other changes for the better have been made within the last few centuries that had no connection with the Pyramids, and every day the world is brought face to face with discoveries, inventions and revolutions in all the branches of science that leave the Pyramids and all other ancient relics in the dim distance where they should very properly be left. A certain amount of respect for the relics, as relics, of the past is all very well; but that we should still continue to worship these monuments of ignorance and folly, because they were worshipped by the taskmasters of the Jews, is the height of nonsense. In an age like this we should endeavor to keep pace with the march of improvement, in figures as well as in everything else. Our figures have already stuck too long in the old groove. It is time they were turned into new channels.

Although the world has progressed very rapidly during the last half a century, there is yet room for considerable improvement, and will be until the end of time. Eight and nine are figures that we can very well dispense with—substituting ten for the former and annihilating the latter. Three is so often mixed up with 8, and 8 with 3, that we will be gainers by disusing one of them. As for 9, it is an awkward number to add, multiply or divide with, and it, too, is often taken for 7 in writing; and in print, if it becomes reversed, it creates confusion by making a very good 6. In using 10 for 8 we create a decimal that, with a little practice, will be found much more handy, and which will be better suited to the requirements of monetary and commercial transactions, and particularly to transactions on a large scale. The Decimal System of the Creator, as here set forth, is a perfect one, and cannot be improved upon. The old decimal system was good enough in its way for times gone by; but now, when everything has a money value—when even the water we drink and the air we breathe has its monetary valuation, we need something better. There was a time in the world's history—and not very long ago either—when the fingers were the ready reckoners of three-fourths of the inhabitants, and the habit still exists to a great extent on three continents.

The interior tribes of Africa are not very bright, so far as calculation is concerned, and the Denkaras, of the Gold Coast, as well as many of those along the Congo, cannot comprehend any greater amount than five, so crude is their minds in this respect, and it is strange that although the Arabs of Africa receive the credit of the origin of numbers in the remote past, that at the present day, not far from Arabia, there can be ound people who cannot comprehend a greater sum than the fingers and thumb of the right hand.

All scales of measurement have had their origin in bygone centuries, and at the present day, outside of the English speaking communities, there are no two countries in the world that use the same measures, for either coin, liquid, solid or lineal measure. In the interchange of commodities all these different measurements lead to confusion, and if the English-speaking nations can introduce a scale that will be perfect in every respect, it is bound to supercede and expunge them all. Language follows in the wake of commerce, and the mother tongue of Shakspeare and Milton is bound to absorb or eradicate all other languages before another century has passed over the world's history. With our language, too, must go our system of calculation, and for this reason, if no other, it should be made perfect.

A word, now, about evolutionary theories, and their contradiction by the mechanical modes of the working of Nature, as we find them illustrated all around us. A spontaneous outgrowth of animal, insectiverous or piscatorial life would not be uniform; and if uniform in certain sections, could under no conditions of chance be uniform throughout the world. The great Author of Creation, who gave only two toes to the ostrich; who gave four feet to all quadrupeds and four hooves to many—who divided the hooves of some into eight, and placed eight rows on an ear of corn and eight legs under the simple caterpillar—who gave sixteen toes to nearly all animals and sixteen teeth to many others—who supplied the vain peacock with a uniformity of twenty-four feathers in his brilliant tail and counted out two dozen ribs to man and a great many other animals —who gave man thirty-two teeth and the same number of finger joints—who gave the centipede exactly sixty-four feet—does nothing by chance or spontaniety. The bear of Borneo or Africa has all the peculiar features of his gigantic relation at the North pole, and his conformation is exactly similar. The Madagascar cat is closely allied to the feline species of North America, and the skeletons of the hipopotami and rhinoceros species found in the beds of the coal mines of England and the Paris Basin are similarly constructed to those now found in the Upper Nile and in other parts of the world, and have the same number of bones. The descendants of the baboons and monkeys who constituted, with the Australian rat or jungle pig, the only animals found on many of the solitary islands discovered in the Indian Ocean during the Sixteenth Century, and where man had never heretofore trod, are just the same as the baboons and monkeys that gambol in the woods of South America and other parts of the world. The physical perfection of the New Zealanders, when they were found, had in no wise differed from the men who assisted the Pharoahs to rule Egypt and who had been carefully laid to rest four or five thousand years ago. If evolution had any record in fact, surely some slight transformation would have taken place in that time. True, the physical proportions of man are found to vary considerably in different parts of the world, but these proportions are attributable to climatic causes, and to food and habits. The Bushman of Australia, like his woolly brother of the continent of Africa, lived in the secluded fastnesses of dark forests, where the inter-tropical sun never shone, and therefore, like the Cockney of London, or the canaille of Paris (who also see very little sunlight), he was stunted and squat. On the same principle the Objibewa of the woody region north of Rainey Lake, in Canada, bears no comparison to the Plain Indian of the prairies, close by. The former is stunted, with ill-formed legs from constant occupation in his canoe, while the Plain Indian towers above the ordinary stature, and is well formed. With fair allowance for local causes, as far back as man can be traced, whether in historic or prehistoric times, he is found to be the same creature, and no connecting-link has or can be discovered, that will ally him in the remotest degree to any other species, or can any other known species of animal be traced to another. The same law of Nature which says, "Thus far shalt thou go and no farther," still holds, and has always held good. As I said before, the mathematical calculation in the construction of the different species of animals and plants is a barrier that cannot be overcome, and never will. Hybridized animals and plants can only go a certain distance; then they revert to original species. This barrier was as complete thousands of years ago as it is now.

But, although, physically, man is about the same as he was four or five thousand years ago, intellectually he has made rapid strides, every succeeding generation having benefitted by the efforts and advancements of the preceding ones, until now, when science and invention are making such swift progress that the nation or people that fails to keep pace with the times is sure to be left in the race.

I will now close the present pamphlet with the hope that those who feel disposed to criticize its contents will weigh well the arguments given, and the reformations proposed, before they arrive at a hasty conclusion that so revolutionary a step in the reorganization of our figures is impracticable. Take square or cube root, and try a few examples with the annexed multiplication table. Test it in any other way, and see if it is not a great stride in the way of improvement on the old system. With the pounds of the bushel corresponding with the decimal of the system, see how easy it is to calculate in any shape or form on a large or small quantity of wheat or grain. The cental system is the only proper system by which grain should be measured. In illustration I will state that, in the spring of 1888, when oats was so dear and other grains so cheap, if people had understood the weight relation of oats to wheat, barley, rye or other grains, they would have ceased throwing away their money on it and purchased grains that had three times the feeding capacity. The feeding capacity of a bushel of wheat should be at least equal to three bushels of oats of 34 lbs. each, and so on with other grains. With a square mile as a land measure basis, see how easy it is to divide oft any section or sub-section of the land without the aid of a professional surveyor. Or, with the foot measure divided into eight inches instead of twelve, see how much easier it is for the carpenter or timber man to make fine calculations on a portion of a building, or on the dimensions of a log or stick of timber, or how much easier it will be for an architect to reduce the plan of an elaborate building to paper, so that the operatives can understand every detail in following its lines. To the mechanical engineer or pattern-maker, the proposed changes herein given will be as the dawn of a new creation, and no longer will portions of engines fail to fulfil the mission for which the designer intended them. A uniformity in the subdivision of the circle will be the key to straighten out all former miscalculations, and to give perfection where formerly imperfection was most likely to result. And even if a stubborn world forever refuses to adopt the octave decimal system herein given, it can at least adopt on octave uniformity in tables of measurement to the old system of decimals that will be a great stride in the way of improvement on the old usages.

87