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## Francis Bacon's Signatures

IN THE

## Shakespeare Plays.

"MIl Vimer and Memor" I liorer to the Future lates. wftov some time has amperest."

$$
\rightarrow+\cdots \cdot \frac{\rho}{9}
$$

By C. M. P.

$$
-\frac{6}{6} \cdot 2 \cdot \sqrt{0}
$$

1.ONTON:

IOBERT BANKS \& SON゙, RACQEFT COERT, FI, EFT STIEFT, F.r.
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## $7!$ $26+1$ <br> $\because \therefore-2$

## Francis Bacon's Signatures

IN THE

## Shakespeare Plays.

"Thou shalt not . . . hold thy stumps to Hear'n nor make a sign, But I of these will wrest an alphabet, And, by still practice, learn to know thy meaning."
(Tit. And. iii. 3.)

The object with which the following pages are written is to endeavour to gain help in verifying and elucidating certain anagrams, and the records which seem to be afforded by their means, at the end of each of the Shakespeare plays in the folio of 1623 .

Learned men seem to be deterred from pursuing this investigation by a notion that the whole thing is sain and purposeless. They think it inconceivable that the Sage of Verulam, or his friends, should have wasted time and money in tontriving and printing mere puzzles, containing information known to those who had the key to such ciphers, and therefore, to the initiated, useless; but information, inscrutable to the uninitiated, and therefore to them also useless.
Such arguments, though plausible, ignore the point upon which the whole question of ciphers turns. The very idea of secret writing includes, and draws after it, the iden of writers and readers, as well as printers of that secret writing. This idea involses a theory or belief in the existence of a secret society, and it will readily be believed that a great expense of time, money, and trouble wonld not have been incurred, excepting on behalf of a very large momber of initiated readers, members of a fraternity bound to hand down the knowledge and traditions (perhaps verbally) received.

This paper makes no attempt even to sketch the history and methods of that secret society of which we believe Francis Bacon to have been the centre and moving spirit, if not the true foumder; but it may be said, in passing, that the same books and scmps of evidence which lint at these partienlars-now and then lifting the eurtain to give ns a glimpse of the "concealed man," the "concealed poet," " magician," or " Proteus," whom we believe him to be-tell ns, eren more plainly, that the mystery should not endure for ever. There secms to be hut little doubt that Francis Bacon plamed and desired that the revelation shonld take place at the end of an age- 100 years; then the veil should be withdrawn, and from behind his enrtain the great poet-philosopher should "pace forth" and be known as himself.

How much would have happened, how much did happen in that 100 years! We do not stop to discuss the complications which may, or must have, prevented the consummation at the appointed time, of the intended revelation; but it is evident that, at any moment from the insertion of those magrams to the present day, the initiates of Bacon's secret society (by whatever name it may now be called) would be furnished with simple and ready means whereby to vindicate the claims of their "Great Master." Should controversy arise (and the prophetie sonl of our poet innst have foreseen that snch controversy wonld at some future time be inevitable) his Sons of Science could, by means of such anagrams, prodnce mathematical proofs of his authorship not only of Shalespeare, lont of all the rest of his multitudinous but unacknowledged works.*

Opinions on matters of this kind can have no value mbess the critic have taken some pains to master the prineiples upon which these anagrammatic ciphers are worked. Only by experiment and experience can any one be capable of establishing or disproving the accuracy of

[^0]the examples here given, and of the genuineness of the method by which they are evolved.

The first proposition which presents itself for consideration is this : " Are these anagrams producible from certain given pages of the 1603 folio of Shatespeare, upon a uniform system such as is here deseribed?"

When this question shall have been decided, it will be soon enough to inquire, secondly, " Can the letters of these anagrams be arranged so as to form other sentences besides those of the kind here produced? If so, what other sentences can be framed?" It is a mistake, often made, to put this question first.

The third stage of inquiry must be relegated to mathematicians, who will doubtless be able to demonstrate the true scientific principle underlying these interesting puzzles, and regulating their construction.

It will readily be believed that belief in the existence of anagrammatic records thronghout the whole of Baconian literature has not been reached at a bound. On the contrary, nearly ten years have passed since the curiosity and interest stirred by Mr. Donnelly's wonderful pioneer work and cipher discoveries, led to a close observation of the typography and pagination of Baconian books in general. The patient and ingenious researches also of Mr. James Cary and his successful results by means of the "wheel" cipher seemed to prove that the words and dates produced are subject to arithnetical principles. But with regarl to

## The liecuris Containeil in the Anagrays.

let it be elcarly mulerstood that there is herer mu y yestion of omy stor:y or natratice. The sentences croved are all of one kind-their aim persistent, and miform-namely, to keep green the memory of Francis Bacon, and perpetually to hand down records of his true and universal anthorshrp-to embalm within his own works that Fame or "good Name" which, he said, was the only farthly thing worth striving after.

Anagrams, similar to these in Strulkesperire, seem to he ubiguitons in books of "the Elizabethan period," which (from totally different canses) have betn attributed to Prancis Bacon. The same method
which deciphers one deciphers all, with only such slight variations as show that they were composed upon a system understood by a great number of persons, and intended to be handed dorn traditionally. So long as books and literature shall endure, so long shall the records thus transmitted remain " all one, ever the same," rehearsing the statement that "Francis Bateon, Lorl Verulam, urote this play," "poem," \&c.

Slight, then, and trivial as these anagrams may at first appear, they suggest to a thonghtful mind, possibilities almost too bewildering to contemplate. But without indulging in speculations, let us at least approach this inquiry with a due sense of its importance, and of the truth of Bacon's dictum, that

## " Most poor matters point to most rich ends."

## How the Anagrams are Formed.

In the first place, the letters have to be collected, from which the cipher alphabets are to be formed. There may be 3,4 , or any number of such letters up to 9. These letters we call "keys," and they are markerl out, or pointed at, by some definite, though not conspicuous lines on the page, which lines, prolonged by means of a pencil and ruler, will reach certain letters in the text-i.e, will reach the "keyletters."

The key-letters indicate the arrangement of a series of alphabets, of which the corresponding letters are interchangeable, one being the true, the rest the cipluer alphabets.

Those who were at the pains to examine into former statements concerning secret marks, and the "Tau" cipher, will remember that, following the clues given (in the former case by Marks, in the latter by the letter $T$ ), lines are ruled from point to point, and the letters through which the lines pass are written down, and form the material for the anagram. The "Tau" is most frequent in (though not peculiar to) title-pages, and since innumerable experiments seem to show that all sneh devices are for the purpose of secretly perpetuating the name and fame of Francis Bacon, the letters of this name, together with one or both of histitles, are in deciphering by means of the T , filled in, over and over again, until the necessary letters are exhausted. From the residue the decipherer proceeds to finish the sentence, being guided by the wording of the title-page itself, or by marks or clues observable in the type.

The residue usually forms itself readily into phrases such as "urote this treatise," "these prayers," "poems," "plays," or whatever the subject may be.

In old books we sometimes find, twice or thrice repeated, the name of the reputed "author," as the publisher or producer of the work, and so forth. In modern books Francis Bacon appears as having written "the first" in this kind, whatever it may be.

These "Tau" ciphers are mere anagrams, such as a child might spell out from a box of letters. They frequently leave a surplus of T s, and sometimes a row of oooo o, or of other letters which form no word. Although there are fixed rules for deciding upon the startiny points (i.e., the T's to be ruled from), no rule has yet been found to guide the decipherer as to the orter in which the letters are to be used.*

It is different with the apparently more scientific anagrams by means of which Francis Bacon or his friends have signed his name at the end of his works. These signatures are not made by the re-arrangement of a jumble of letters; they are formed by exchanyes of symbols for letters; in fact, they are wheel-ciphers.

## Wheel Ciphers and Their Working.

The construction and use of a "wheel" in ciphers are generally understood. Yet, because these pages may fall into the hands of some one unacquainted with this simple means of secret writing, let us begin from the beginning, and explain the thing as though it were new.
(1) The old English alphabet consisted of twenty-four letters only: $i=j, u=v$.
(2) This alphabet of twenty-four letters is written round a dise or "wheel," which it fills, as the figures on a clock fill the dialplate.
(3) Upon a smaller dise the same aiphabet is similarly written.
(4) A pin or pivot is passed through the centres of the dises,

[^1]enabling them to revolve upon each other. Any one of the twentyfour letters of Alphabet 1 ean be bronght into juxtaposition with any letter of Alphabet 2. A word written in the cipher letters of the latter can be translated into the true letters of the former. To take an easy instance, say that we have found $C$ and $A$ to be "key letters." If, under the $C$ of Alphabet 1 , we place the $A$ of Alphabet 2, we can translate or decipher the meaning of the letters $d p y l a g q$ z y a m l, and we find that they spell out, on Alphabet 1 , the words

## Francis Bacon.

This is a simple wheel eipher. Sometimes it is spoken of as "Wheatstone's," bnt Bacon mentions it in his Adveancement of Learning, and it is described in books which seem to have been penned by himself. Mr. James Cary has made large use of the wheel, though chiefly for the purpose of extracting single words, or for resolving numbers into letters, and vice verset. Others, following in his track, have gained nseful hints from clusters of letters as they oceur together on the wheels, and which snggest words or sentences phonetically spelt.

In the cipher now brought forward it is hoped that further advance has been made, and that cryptographers, however differently they may set about their work, may find hints or aid in these anagrams, which are a development of the whee principle.

Only two alphabets have been spoken of; this was for the sake of simplicity in explaining. There is no need to restrict ourselves to two aphabets, and the examples given further on show that from :? to ! alphabets are gencrally used. * Now the eye becomes perplexed by so many concentric circles of letters, and, although it is somewhat weurisome to write ont the alphabets over and over again, in straight lines, yet this plan is found in the long run to save time and puzzling. The decipherer should therefore begin by writing out the old English alphabet from $A$ to Z . Upon this alphabet the letter which stands first among the cipher-keys should be marked, and beneath this marked letter the other keys should be written in a column-one under the other. For instance, suppose the letters M, E, T, I to be the keys, write thus :

[^2]
e
t
i

The line with m , being filled up as the true alphabet, we proceed to till in the next line from e, continuing f $g$ h i, \&e., until $\mathrm{r}^{\prime}$ comes under z . Then, returning to the beginning of the line, under a we place s, and so on, again finishing with $z$ under $g$, and the letters a bed to join c. Here is the principle of a wheel cipher, thongh in the present case our alphabet might be joined end to end on a cylinder, instead of being joined end to end round a dise.

Alplabets $: 3$ and 4 are, of cousse, treated in precisely the same manner, the result leing four complete alphalbets, of which it is best to number the lines, and of which the first mine letters must nour ber cut off from the rest. (The cause for this cutting ofl will presently appear.)

It has been found best at this stage (esjecially with lon! anagrams) to write out a!phabetically the list of letters thus cut offi from the rest, numbering each letter with the number of the line from which it is drawn. The following is now the state of the work:-

Nine letters.

(Letters to be Cherket.)


$$
\begin{array}{llllllll}
\because & y & \because & 1 & y & 4 & 3 & 4 \\
V & w & x & x & y & y & Z & Z
\end{array}
$$

Next, we must write down a sentence which, if the rules of the eipher be complied with, will be prrently produced from the rows of letters cut off. As each letter is taken and matched to its fellow, it should be cancelled on the group of letters cut off from the alphabets, or, better still, it should be cancelled on the atphushetiral
list ** Of the construction of the anagram sentences, or formule, more will be said; but for the present let the patient eryptographer continue mechanieally, and without reasoning, to fill up the letters of the sentence with their corresponding symbols. From the four alphabets we are then to make (usiny only the first nine letters of each alphabet) the following sentence of thirty-six letters:-
"Francis Bacon, Lord Verulam, wrote this play."
The cryptographer can take F from line 1, and cancel it on his list. There is no r on the list, but amongst the "equivalents" in the column under $r$ he sees $k$; there is a $k$ in the list, so he uses it to represent r . Next he cancels $\mathrm{a}, \mathrm{n}, \mathrm{e}, \mathrm{i}$, s , which are all in the list, and thus "Francis" is completed. Now for "Bacon." B, a, c, and o are on the list, but there is no second n. The decipherer looks again amongst the "equivalents" under $n$ and finds $f$. The second f is therefore eancelled, and the word "Bacon" completed.

For "Lord," l, o, d are in the list; but, for the r , we take its "cquivalent" (z). So, for "Verulam," v and e are in the list, and the last $z$ takes the place of $r$. $\mathrm{U}_{\mathrm{p}}$ to this point all has been easy and straightforward ; but now the small amount of observation and common sense necessary for working these ciphers will be called into play. After " Ver" comes another v or u; but none is on the list, neither is there an unused "equivalent" in the column under v. But what are the "equivalents" for v? F is the first. The decipherer then looks to the column of equivalents for $f$, and perceives $y$, of which there is one unused in the list. So y is substituted for f in "Francis," and the f is removed from "Francis," and made to do duty for the second v in "Verutum." L, a, and m are ready in the list to complete that word. For the word "wrote," w, t, and e are to hand. For the r a second z must be used, for the $o$ the equivalent g .

After " ver" comes another v or u; but none is on the list, neither there an unused equivalent in the column under v. But what are the equivalents for v ? N is the first; but the only n has been used. However, F from "Francis" can be made to do duty for V in "Verulam"-a y being placed as equivalent for $F$. To fill up

[^3]"Verulam" an a and m are ready; there is no l, so in its stcad we use dor h .

So we go on, using first the letters of the ordinary alphabet; when these are exhausted, their equivalents. If these also fail, we must shift or exchange the letters.

It is well to note letters in the list which would be superfluous were they not exchangeable.

In the example abore given there are $g, k, q, x, x, y, y, z, z$, none of which are in their own persons needed.

On the other hand, the list contains only three a's-the sentence requires four. There is no $r$ in the list, but four r's are in the sentence. Wc have found it a good plan at an early stage of the deciphering to apply these otherwise useless letters to the filling up of letters of which the supply is insufficient. We may confidently rely upon the sentence thus worked being completed, with neither lack nor residence of letters.

Many words are needed to explain these things, and the multitude of explanations gites an air of difficulty and profundity. The same is the case whenever a mechanical process of construction has to be accurately detailed in writing, whether the explanation concern the making of a rabbit-lutch or of a rice pudding. But the business itself is, in fact, simple enough, demanding only a little time, patience, and method. The case is just such as Bacon speaks of, wherein, as he says, until the thing be discovered, men pronomee it to be impossible; but when it is discovered, they marvel that it had not been observed before.

Let us now turn for a few minutes to a consideration of
The Use of Number ! in tife Constrection of Sentences.
Nine (or its multiples) occurs so often as a result in cipher problems that the writer has long felt assured that the mathematical principle ruling these anagrams would, in the end, prove to be comnected with the properties of that remarkable number. Accordingly, when experimenting upon .) alphabets, of which the key letters are r, o, i, n, d,* it was resolved that attention should be focussed upon this subject.

[^4]The 5 alphabets were duly written out and the first 9 letters out off in a mamer already described. In ordinary Baconian anagram was written down, agreeing in the number of its letters with the $5 \times 9=45$ thus ent off. We then attempted to construct the sentence precisely on the plan jnst described, when with some surprise and greater pleasure we found the sentence evolving itself to perfection:-
"Francis Bucon Ld. Verulum und Anthony B. urit these plays." Another attempt prodnced:
"Francis Bacon and his brother Anthony "rote this play."
Sentences of from 21 to 81 letters $(: 3 \times 9$ to $9 \times 9)$ were then framed in progressive order, and with equal success, no change being made in Names or Titles, or in the general form of the record.

These experiments seemed to prove that Anthony was indeed as his brother termed him, his "consorte," and that he had a hand in the plays of the "first period," at least. Later experiments suggest that he helped in the plots or first sketches of nearly all, but for the present we must dismiss this part of the snbject. The sentences were, from the first attempt, built up in a regular manner, exhansting every letter in the cipher collection, and leaving neither surplus nor deficit.

Thenceforward the key letters of the Shukespeare folio and of many other works were systematically collected, and (when the rules for deciphering are duly complied with) have never failed to yicld siniilar results, however different may be the key letters, or whether these keys be few or many, and the sentence, consequently, short or long.

To most people who interest themselves in arithmetie and cipher work, it is probably known that any ! consecutive numbers, when added together, will prodnce a sum equal to a multiple of 9 , and that the sum will also add $u_{p}$ to to Thus:-

$$
\begin{array}{ll}
1+2+3+4+5+6+7+8+9=45 . & 4+3=9 \\
2+3+4+5+6+7+8+9+10=54 . & j+4=9 \\
3+4+5+6+7+8+9+10+11=63 . & 6+3=9 \\
4+7+6+7+8+9+10+11+12=72 . & 7+2=9 \\
j+6+7+8+9+10+11+12+13=81 . & \therefore+1=9
\end{array}
$$

And so forth in a progression of 9.

Now, if we number the letters of the alphabet in regular order, it follows that the sum of the volues of these letters must follow the same rule:-

$$
A^{1}+b^{2}+c^{3}+d^{4}+e^{5}+f^{6}+g^{7}+h^{8}+i^{9}=45 . \quad t+5=9
$$

And so forth. Hence, thongh in these ciphers we seem to be dealing with letters, we are in truth dealing with numbers, and this is why, floundering about and soon ont of our depth, we call mathematicians to the rescue.

A point shonld here be examined, with regard to precise limitation of the number of letters to be taken as cipher keys. It is clear that when a line is ruled towards a group of letters, that line must pass through one or hetreen two letters. In the latter case it seems almost equally clear that, if tonched, both letters must be used, otherwise many of the shorter anagrams wonld remain imperfect.

But, again, where is the ruled line to stop:' This question can at present only be answered by observation and experience. No seientific law has yet been discovered which decides it, and if any reader of the present notes can discover such a law he will confer a great boon upon the writer, and on eryptographers in general, by commmicating his discovery. Meanwhile, we can but fall back upon the two faithful friends above mentioned, Experience teaching us that Truth, however hidden, will be discovered by Observation, and Observation teaching us to keep a sharp look-ont for hints such as these:-
(1) Changes of type-Roman, Italic, \&c.
(2) Broken or deformed letters.
(:) Misplacement or crowhing, which may long together the letters to be used.
(1) Breaks or fanlts in the rertical lines whleh divide the columms.*
(.) Horizontal bars or stops.
(6) Verbal hints in the text : "Stop," " Heere," " Eind," " Do not pass," "Stay behind."

Such seem to he true instructions to the eryptographer, and probably they were imparted rerbally to the duly initiated.

[^5]That we may not worry or become puzzle-headed over these simple though ingenious anagrams, it is well to mention that precautions have been taken to prevent slight errors on the part of the decipherer, slight deviations in the ruling of a line, difference in the thickness of the pencil used, or an error in the length of a line, from materially affecting the general resnlt of the deciphering.

Many experiments have been made with the special object of testing this matter, and these seem to show the type-or, rather, the calculations based upon the proportions of letters in the English alphabetto be so nicely adjusted as to prevent any venial slips from altering the record. No one who serionsly works at these anagrams will fail, for instance, to find that, by prolonging the lines, he merely prolongs or repeats part of the sentence; he does not interfere either with its construction or its general tenor. The names and titles may be in full or abbreviated. The name of Anthony, "his brother," may be included or omitted, but nothing changes the purport of the sentence, if worked on the plan described above. For ever it continues to reiterate that

## "Francis Bacon Lord Verulam Wrote These Plays."

Is it then unimportant which letters are pointed out for use? Wonld any other letters equally well suit the case, and produce the required sentence? Surely not. Afcer giving a few examples of the gradual development of the anagram from early stages until it reaches perfection in nine times nine letters, we will endearom to summarise all that has yet been found, which may enable beginners quickly to distinguish the key letters and to discriminate between the true and the false.

It may assist the work of other decipherers if we here append a table of the progressive stages of development through which the sentence passes in proportion as the key letters are increased in number: in other words, as we add on the extra 9 letters and their additional value, 9.

The shortest Baconian anagrams ("Fran. Bucon" $=9$ letters, and "Fr. Bucon wrote this book," "poem" or "play" $=18$ letters) have not been met with in the particular class of records with which we are
now concerned. Nevertheless, since they are found elserwhere, we include them in the following table:-

| Alphabets. Letters. | Sentences. |
| :---: | :---: |
| 9. " | "Fran. Bacon " or " Mr. Fr. Bacon." |
|  | con writ this play," |
|  | "Fran. Bacon wrote this." |
| 3-27. ' | "Francis Bacon wrote these plays," or- <br> "F. and Ant. Bacon wrote these plars." |
| -36. | "Francis Bacon Lord Verulam wrote this play," or, <br> " Francis and Anthony Bacon writ these plays." |
| -45. | "Francis Bacon Ld. Verulam and Anthony B. wrote this play." |
| 6 - 54. | "Francis Bacon Lord Verulam Visct. St. Alban and Anthony Bacon wrote this play," or- |
|  | "Francis Bacon Ld. Verulam and his brother Anthony wrote this play." |
| 7-63. | "Francis Bacon Lord Verulam Visct. St. Alban and Anthony Bacon wrote this play." |
|  | "Francis Bacon Ld. Verulam" Vct. St. Alban and his brother Anthony writ this play." |
| 8-72. | "Francis Bacon Lord Verulam Viscnt. Saint Alban and his brother Anthony wrote this play." |
| $9-81$. | "Francis Bacon Lord Verulam Yiscount Saint Alban and his brother Anthony Bacon wrote these plays." |

No anagram of this kind has yet been fom which extends beyond the nine alphabets, or which would be improved by the addition of a tenth: 9 times 9 are 81 . 'This is the number of the Witches' charm in Macleth:-
" Weary sev'n nights, ! times !, Thrice to mine, and th:ice to thine, And thrice again to make up 9 Peace ! the charm's womed up."

It is questionable whether the anagrams are intended to be worked out by means of 3 alphabets only $(=27)$. No such anagram has been
fomed, to which it would not be equally fair and reasonable to add a th letter. On the other hand, most of the sentences from 3 alphabets require an exchange of analogous letters: $\mathrm{k}=\mathrm{c}$ or $\mathrm{q}, \mathrm{s}=\mathrm{z}$, \&c., according to the "license" which "Camden's" anagrammatist accords himself. There are nevertheless a few combinations of ?: alphabets which prodnce the sentence of 27 letters, "Francis Bacon urote these plays," and many more such alphabets form sentences inchuding abbreviations of the name Anthony, or Antonie. The following are specimens of these varieties.

With regard to the key letters, it may be well to say that, if the same letter occurs on any two or more of the lines ruled from the pointers, it must not be again used. In many instances, anagrams of only ? or 4 alphabets may be extended, eren to the completion of the sentences, but in every case reppoterl lofterss slomlid bo nmittorl.

## Thrle . Ifphabets-27 Letters.

(1) E.rperiment.

| 1 | abedefg hi | kl moop ¢ |
| :---: | :---: | :---: |
| - | ghiklmnop | ¢ 1 |
|  | prosty wxy | z |

 mggdiph qpeon wrekt ixesl fbayh Francis Bacon wrote these plays
(2) Love's Labomr's Lost.

|  | $a \mathrm{l}$ |  |
| :---: | :---: | :---: |
|  | f g hiklmoto | pyrstrwxyzabede |
|  | vwxyzabc | def $\mathrm{g}^{\text {h }} \mathrm{i} \mathrm{k}$ |

(3) The Tirn Gen. Ter. (Key letters o, t, h, as above).
'The same as above from Lotw's Labour's Lost.

Four Alphabets-36 Letters.
The Merchant of Venice.
(Key letters e, s, o, w).

|  | a 1 |  |
| :---: | :---: | :---: |
|  | o | y z |
|  | k 1 | tvwxy zabcd |
|  | , |  |


prauqsg botox Lard verizaw wfets
Francis Bacon LordVerulam wrote

| 4 | $\mathbf{l}$ | 3 | 3 | 4 | 3 | 3 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $t$ | $h$ | $x$ | $s$ | $p$ | $y$ | $k$ | $1 m$ |
| $\mathbf{t}$ | $\mathbf{h}$ | $\mathbf{i}$ | $\mathbf{s}$ | $\mathbf{p}$ | $\mathbf{l}$ | $\mathbf{a}$ | $\mathbf{y}$ |

Or the following-


|  |
| :---: |
|  |  |
|  |  |

Richuril III.
(Key letters s, i, h, o).


veadyysxwyecbeh\% vaig \& be ewrdte
Francis BaconLordVerulamorote
$\begin{array}{llllllll}1 & 2 & 1 & 3 & 3 & 4 & 3 & 3 \\ \mathbf{t} & \mathrm{x} & \mathrm{i} & \mathrm{s} & \mathrm{p} & \mathrm{b} & \mathbf{1} & \mathrm{y} \\ \mathbf{t} & \mathbf{h} & \mathbf{i} & \mathbf{s} & \mathbf{p} & \mathbf{l} & \mathbf{a} & \mathbf{y}\end{array}$

## Five Alphabets =4.5 Letters.

The Comedy of Eirrors.
(Key letters: col. 1, r, o, i; col. $2, \mathrm{n}, \mathrm{d}$ ).


| $x z t e o i y b w d f t w p d a s g x m y$ <br> Anthony B. wrotethisplay |
| :---: |
|  |  |
|  |  |

Or-

```
1315 5 1 5 2 2 2 1 2 1 1 3 4 5 5 4 2 5 5 1 3 3 1 3
crances bayfz gd vbrmcxd qist et
Francis Bacon Ld. Verulam Vist. St.
\begin{tabular}{|c|c|}
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{xxywzwdotefzap bha Alban wrotethistala}} \\
\hline & \\
\hline
\end{tabular}
```

Six Alphabets=jt Letters.

A Milsummer Niphli's Dream.
(Key letters: col. 1, t, e, n; col. 2, a, $9, \mathrm{~s}$ ).
Note in the original the break in the perpendicular rule between the column at s.

|  | abedefghi |  |
| :---: | :---: | :---: |
| 2 | 1 moopqrst | vwxyzabc |
|  | trwxyza | defoghik |
| 4 | ghiklmnop | Ifrstrwx |
|  | noptrstyw | x |
|  | mabcdefgh |  |

$\begin{array}{lllllllllllllllllllllll}2 & 2 & 1 & 2 & 2 & 1 & 1 & 1 & 3 & 3 & 2 & 4 & 2 & 4 & 5 & 5 & 3 & 1 & 3 & 5 & 4 & 5 & 5\end{array}$



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




| 6 | 6 | 4 | 3 | 5 | 4 | 6 | 6 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| $\varrho$ | $h$ | $i$ | $z$ | $p$ | $k$ | $z$ | $e$ |
| $\mathbf{t}$ | $h$ | $i$ | $\mathbf{s}$ | $p$ | $l$ | $\mathbf{a}$ | $\mathbf{y}$ |

## Seven Aldphafets=(i; Letters.

Hemiy V.—p. 9\%.
(Key letters: col. 1, a, e; col. ?, i, n, w, t, o).
The stops are made by the italics: col. 1, tlomish; col. 2, Henry.


$\begin{array}{lllllllllllllllllllllllllll}7 & 6 & 2 & 3 & 5 & 3 & 3 & 4 & 4 & 5 & 5 & 6 & 7 & 4 & 3 & 2 & 6 & 6 & 4 & 4 & 6 & 2 & 5 & 4 & 6 & 5 & 7\end{array}$

St. Albanand Anthony Baconwrote

$$
\begin{array}{cccccccc}
6 & 7 & 6 & 6 & 4 & 6 & 7 & 3 \\
\mathbf{y} & 1 & \mathrm{x} & \mathbf{x} & \mathrm{P} & 7 & \mathbf{o} & \mathrm{~m} \\
\mathbf{t} & \mathbf{h} & \mathbf{i} & \mathbf{s} & \mathbf{p} & \mathbf{l} & \mathbf{a} & \mathbf{y}
\end{array}
$$

## Eigit Alphabets $=72$ Letters.

The Tiwo Gentleman of Verona.
(Key letters: col. 1, none ; col. $\mathcal{Q}, \mathrm{c}, \mathrm{u}, \mathrm{i}, \mathrm{n}, \mathrm{e}, \mathrm{t}, \mathrm{s}, \mathrm{l}$ ). The letters are all italics. Stop at the original rule, or bar.

|  | a |
| :---: | :---: |
|  | stywxyzab edefg |
| 3 | ghiklmuop yr strwxyza |
| $\pm$ | lmnopqrst rwxyzabcde |
| 5 | c defghiklm |
| 6 | stvwxyza bedefghik |
|  | qratvwxyzabedef |
|  | iklmnopqr |


mrancis bacon lormverflas visrnt
Francis Bacon LordVerulamViscnt


| $\begin{array}{lllllllllllllll}5 & 6 & 5 & 8 & 6 & 6 & 8 & 7 & 6 & 8 & 2 & 6 & 7 & 7\end{array}$ |
| :---: |
| gwlyxpy okxtplazz l |
| Anthony wrote this pla |

Nine Alphabets $=81$ Letters.
(Key letters: col. 1, e, a, o, n; col. 2, l, f, r, t, m).
Stop-the horizontal rule under the head-line.

| 1 | abcdefghi |
| :---: | :---: |
| 2 | wxyzabede |
| 3 | klmoldyrs |
| 4 | iklmuopyr |
| 5 | g hiklmnop |
| 6 | bedefghik |
| 7 | uopurstrw |
| 8 | p¢festvwxy |
| 9 | hiklmoopq |

klmıopyrstvwxyz
fghiklmnopqrat v tvwxyzabcdefghi
strwxyzabcdefgh
qretywxyzabcdef
lmoopqrstvwxyza
xyzabedefghiklm
zabcdefghiklmo
rstvwayzabcdefg

 skinp g gbbx pwm hio prkpheg hwpqxiy
Saint Alban and his brother Anthony

| q hydn fzdpe pimel lmkto |
| :---: |
|  |  |
|  |  |

It is time to return to the question, " Is it mimportant which letters are taken for use in these anagrams?" or, "Will all or any letters suit the case, and produce the required sentence ?" Again the answer is, "Surely not."

The following few observations may aid inquirers. The writer heartily wishes that they were more conclusive; but, in the beginnings of discovery, each new particular should be, Bacon says, as " a thread to be spun upon." May others more able, taking up these loose ends, spin and weave them into stuff so tough as to be indestructible by any effort to wrest or rend it.

Hints and Suggestions Concerning the Constitution of the Cipher Auphabets.

1. In endeavouring to diseover some underlying principle in the construction and application of these wheel eiphers, let no one be discouraged if, at a first glance, he fail to perceive any chain of con-nection-any bond of union amongst the detached letters collected by the "pointers." These so-called key letters are, after all, mere ingredients in so many alphabets, and we submit (with much diffidence) the suggestion that, not so much the keyletters as the initial letters of the alphabets, their proportional disteme from each other, and their sums (as well as the sums of the cipher letters which they control), are the points upon which the whole matter will be found to turn.

In all these calculations we continue to encomoter mmber 9 and its multiples, and here also we have to remind ourselves that we are dealing with a wheel cipher, and that we must be prepared to continue
counting round the wheel, so that A will sometimes have a value, not of 1 but of $25: \mathrm{B}=26, \mathrm{C}=97$, and so forth.
2. The sum of the first 9 letters of the alphabet is a maltiple of 9 .

$$
\mathrm{A}^{1}+\mathrm{B}^{2}+\mathrm{C}^{3}+\mathrm{D}^{4}+\mathrm{E}^{5}+\mathrm{F}^{6}+\mathrm{G}^{7}+\mathrm{H}^{8}+\mathrm{I}^{9}=45 \quad(4+5=9)
$$

3. If the first letter ( $\mathrm{A}^{1}$ ) be dropped, and if the cipher alphabet be made to begin at $\mathrm{B}^{2}$, the 9th letter will be $\mathrm{K}^{210}$; so that, practically, 1 has been subtracted, and 10 added, which is equal to the addition to the first alphabet of 9 only.

$$
\mathrm{B}^{2}+\mathrm{C}^{2}+\mathrm{D}^{1}+\mathrm{E}^{5}+\mathrm{F}^{6}+\mathrm{G}^{7}+\mathrm{H}^{8}+\mathrm{I}^{9}+\mathrm{K}^{-10}=5+(5+4=9) .
$$

Proceeding in this fashion, we drop at the beginning of each new series, a number which, subtracted from the value of the letter added at the end, forms invariably a multiple of $!$. This continues until we reach the 16 th series, begimning with Q .

But here (if the letters: be valued as liefore, $\mathrm{A}=1, \mathrm{~B}=2, \& c$. .), the regularity ceases. The alphabet whose initial letter is $R$, including $A$ as the 9 th letter, does not add up into a multiple of 9 , and the sums of the succeeding alphabets to Z are irregular, as may be seen by the following table:-

$$
\begin{aligned}
& \mathrm{r}^{17}+\mathrm{s}^{18}+\mathrm{t}^{19}+\mathrm{v}^{20}+\mathrm{w}^{21}+\mathrm{x}^{22}+\mathrm{y}^{23}+\mathrm{z}^{24}+\mathrm{a}^{25}=165 \quad(1+6+5=12) . \\
& \mathrm{s}^{18}+\mathrm{t}^{19}+\mathrm{v}^{20}+\mathrm{w}^{21}+\mathrm{x}^{22}+\mathrm{y}^{23}+\mathrm{z}^{24}+\mathrm{a}^{23}+\mathrm{b}^{26}=156 \quad(1+i)+(i=12) \text {. } \\
& \mathrm{t}^{19}+\mathrm{v}^{20}+\mathrm{w}^{21}+\mathrm{x}^{22}+\mathrm{y}^{23}+\mathrm{z}^{24}+\mathrm{a}^{1}+\mathrm{b}^{2}+\mathrm{c}^{3}=185 \quad(1+3+5=9) . \\
& r^{20}+w^{29}+x^{22}+y^{23}+z^{24}+a^{2}+b^{2}+c^{3}+d^{4}=120 \quad(1+2 \quad=3) . \\
& \mathrm{w}^{21}+\mathrm{x}^{22}+\mathrm{y}^{23}+\mathrm{z}^{24}+\mathrm{a}^{1}+\mathrm{b}^{2}+\mathrm{c}^{3}+\mathrm{d}^{4}+\mathrm{c}^{5}=105 \quad(1+5 \quad=(\mathrm{i}) \text {. } \\
& \mathrm{x}^{22}+\mathrm{y}^{23}+\mathrm{z}^{24}+\mathrm{a}^{1}+\mathrm{b}^{2}+\mathrm{c}^{3}+\mathrm{d}^{4}+\mathrm{e}^{5}+\mathrm{f}^{6}=90 \quad(9+0 \quad=9) \text {. } \\
& y^{23}+\mathrm{z}^{24}+\mathrm{a}^{2}+\mathrm{b}^{2}+\mathrm{c}^{3}+\mathrm{d}^{4}+\mathrm{e}^{5}+\mathrm{f}^{6}+\mathrm{g}^{7}=75 \quad(7+5 \quad=12) . \\
& z^{24}+a^{1}+b^{2}+c^{3}+d^{4}+e_{5}+f^{6}+g^{7}+h^{8}=60 \quad(6+0 \quad=6) .
\end{aligned}
$$

It should, however, be noted that, where these sums do not simyly amount to 9 or its multiples, two successive sums do so-e.y., $12+6=18,: 3+6=9$.

We further observe that if (instead of continuing after the end of the first alphabet, to reckon as before $\mathrm{A}=1, \mathrm{~B}=2,8 \mathrm{sc}$.) we continue the uumbering ouward after the first z , and reckon $\mathrm{A}=25, \mathrm{~B}=2(6, \mathrm{C}=27$, and so forth the progression of 9 continues as a matter of course in the sums of the cipher letters.
4. A long conrse of experiments seems to have proved that no com-
bination of letters producing alphabets whose initials are all included in the first or the last 9 letters (ato ior (q to $z$ ), nor even a series of alphabets in which these initials are in the majority, will produce the anagrams in question. In the sentence of 2 Z letters-" Francis Baton urote these plays "- 10 to 16 letters have, in every attempt, remain momatched. One or two such nonconformist alphabets may be introduced amongst a majority of others complying with the rest of the conditions seemingly exacted by the cipher rules; but of themselves (so far as present experiences shows) they do not suflice to produce the signatures of Fraucis Bacon or his brother Anthony, neither do they produce any anagram to the purpose, nor approaching in completeness to the examples which have been produced by (what seems to be) the correet method.
5. Further, it appears that these anagrams are not producible from alphabets in sequence, within the first ! letters; indeed, many seguent letters from any part of the alphabet seem (so far as has heen tried) to fail in forming the anagrams. An effort to test this point has been made in the case, first, of the short sentences, by taking as initial letters the progression of three alphabets from $A$ to $Z$, alphabets of which the initals are $\mathrm{A}, \mathrm{B}, \mathrm{C}, \mathrm{B}, \mathrm{C}, \mathrm{I}, \mathrm{C}, \mathrm{I}, \mathrm{E}, \mathrm{de}$; but in no case has it been found possible to form a perfect amagram: indeed, ont of the 27 letters first experimented nion, from 10 to 17 letters remained in each case munatched. It will casily be beliered that similar attempts mon the enlarged sentences, including : $36,45,51,63,72$, and 81 letters, were equally failures.
(6. We have seen that the value of any serics of 9 letters, begiming at $\lambda^{\prime}$ and ending with $Y^{24}$ has the sum of a multiple of 9 . We have also seen that the sums of any! letters begiming with $\mathrm{r}, \mathrm{s}, \mathrm{t}, \mathrm{r}$, w, $x, y, z$, are "irregular," and, for the most part, to not form multiples of !

It now becomes a question how many of these noneouformist aphabets may be admitted into a series of cipher alphabets withont ulsetting the anagram? We also inguire whether, where two or more such irregular successions of letters occur, any compensating circumstances can be found to counterbalance them?

Without pretending to lay down rules, or to dogmatise on any point, we arain venture to give the results of many experiments, all
tending to show that where the irregular series (with initials $r$ to $z$ ) are introdnced, the anagrams will still work ont well, if there be a distance of 9 between two or more of the initial letters of the cipher alphabets. Take, for instance, the anagrams of 4 alphabets from the Jerchent of Venice and from Richard III. (p. 17).

In the former instance the value of the 9 letters in line 4 is $=165$. In the latter , , , , , , , , , ==105.
Neither of these lines has a sum equal to a multiple of 9 (although the sum of the digits equals 18 ); but the letters $r$ and $w$, with which they respectively commence, occur both together in the series of 5 alphabets from the Comelly of Errors (p. 18). In the example of 8 alphabets from the Two Gentlemen of Verona (p. 20) the irregular initials $r$ and $s$ also appear. Yet all these collections of letters work out correctly, and form their respective anagrams.

Wheu such is the case, a compensation seems to be found in the distances of the initial letters from eaeh other, in the ordinary alphabet. To illustrate this, let us take the 8 initial letters from the Two Gentlemen of Verona (p. 20). They are these-a, s, g, e, c, r, q, i. On examining their distance from each other, we see that


In the 4 alphabets from the Merchont of Venice the 4 th line is irregular but then

The distance from $r$ to a (inclusive) is 9.

$$
, \quad, \quad, \quad \mathrm{r}, \mathrm{k} \quad, \quad 18 .
$$

Such is the usual experience, yet the rule does not always hold good. In the 4 alphabets from Richard III. there is an irregular line begin-
ning with w. In this case we find no distance of 9 between any of the letters, yet the anagram works out rightly. Again we seek for some extenuating or compensating circumstance, and find one fact, of the value of which others must judge.

We find that, of all the "irregular" alphabets, that beginning with $w$ is the only one in which the letters from the first turn of the wheel, the first alphabet (i.e., $w^{21}, \mathrm{x}^{22}, \mathrm{y}^{23}, \mathrm{z}^{34}$ ) add up to a multiple of 9 $21+22+23+2 t=90$.

The signatures to all the Shakespeare plays, as well as many others, have been worked out, and can be produced when required; but for the present we refrain from multiplying examples, for he who will not be at the pains to consider these few pages will surely not be persuaded to become industrious by the sight of many. On the other hand, these few hints and instances will suffice to encourage the true inquirer, who will speedily multiply his own experiences.*

Let us sum up the points which seem needful for the construction of the cipher alphabets.

1. The added values of the first 9 letters shonld amount to a multiple of 9 -i.e., $27,36,4.5,54,63,7 \cdot, \mathrm{~s} 1$.
2. The initial letters of these alphalbets must not be capable of being arranged in sequenre.
3. They must not all be drawn from the first 9 letters or from the last 9 letters of the English alphabet.
4. If they infringe these rules, the defect must, it seems, be compensated by ensuring that the distance between some two of them, at least, be equal to 9, inclusive, or 一
5. The initial letters should have values whieh, added together, make a sum of 9 .

It now only remains that we bricfly state the difficulties and objections which have been raised to what some are pleased to call our "theory." It is easy in a few words to propound a question or a difficulty which it would require many pages to answer. We have endeavonred briefly to reply to the ammadversions or contentions of
friends and foes, and, to meet some of the thorniest points, have appended a few illustrations of anagrams within the plays, and hinis for extracting them.

Queries, Obimections, and Axswers.
Objections and eriticisms have been invited, and many have been received with regard to the present paper. These objections all range themselves under one or another of the following propositions:-

1. That the thing is impossible, to which we can only reply that, if a thing can be done, it is not impossible. We claim that it has been done.

2 . The second objection is more reasonable, and demands a reply, proving as it does that the objectors have mismderstood the principle upon which the anagrams are supposed to have been inserted. Our explanation, then, cannot have been clear. "It is," say our friendly objectors, "inconceivable that the poet can have written his lines so as to ensure that certain letters shall be cut by lines ruled from the pointers, or by any such device. Tlink of the tronble, complication, expense, \&c., \&e," all assuming the type to be elaborately marshalled so as to be cut by lines from the pointers, whereas, according to our own belief, the pointers were chiefly, and as a rule, placed so as to point to serviceable letters after the type was set up.

If we write the word FINIS on a slip of card, and place it under the last line in a page, we see how easy it is (knowiny ullut combinutions of letters to aroid) to make the uprights or pointers, F, I, I, direct the course of a ruler to letters serviceable for the cipher alphabets; or, at least, the slighest spreading out, or compression of the type, a slight pushing of a whole line to right or left will bring about the desired result. For instance, in the names of the aetors at the end of Measure for Measure, printed in italies, the whole number of ! letters is ruled through in col. $\leadsto$, from the second I. The first I and the F point only to blank space. The same thing happens in The Merry Wices, Hamlet, and Cymbeline, and in the downucard lines from F , I, at the end of Othello, where no letters are renuired in col. 1, becanse the required 9 key letters are fomen in col. $\because$.

On the contrary, at the end of the Toming of the Shrew no key
letters are needed from col. 2. The second I, therefore, is shifted, so as to be placed immediately under the vertical line uthich divides the columns. It consequently points to no letters.

That these arrangements are the result of contrivance, and done with an object, seems indubitable, and our convictions on this head are not diminished by a consideration of the way in which FLSIS is squeezed inat the end of Much $A d o$ and Fixis in the Winter's Tale. We do not, however, pretend to prove this matter by any one particular; rather, it must prove itself by a multitude of small pieces of evidence, and chiefly by its results.
3. The next, and perhaps most common, objection is that the alphabets which make our series of sentences will "make anything "-that it would be as easy to produce a record that William Shakespere wrote the plays as that Francis Bacon did so. In fact, many eritics have produced such records, which they consider as "guite satisfactory," or "aceurate enough for a puzzle."

Such statements, although incorrect, have in them some grains of truth. The cipher alphabets will not make "anything," but they will make a great varicty of sentences in no way to the point, having no relation whatever to the matter in hand. We have succeeded in concocting a variety of scntences, all differently worded, and in no form of progression, declaring that Victoria the Good, Queen of Great Britain and Empress of lndia, has reigned for sisty years, that we celebrate her Diamond Jubilee, that we wish her long life and many blessings. We have been able to declare that she wrote the shakespeare plays, and that Ben Jonson wrote them. We have also been able to write a portion of our own name and address. But to what purpose are such things? They are useless, excepting to strengthen the evidence that the amarams are constructed mpon mathematical principles and by calcolation fonnded upon the eompnsition of the English alphabet.

But the far-seeing Bacon must have seen enough to "create a perfect guess" that, hereafter, controversies mast arise concerning the mighty works, the vast library which he was preparing in seeret, to berfueath to posterity. With regard to the shakespeare plays, he would know for certain that if the authorship were ascribed to any one,
excepting himself, it would be to the man whose name approached to that on the title-page. He and his friends seem, consequently, to have contrived that by no means shall the record that William Shakesperc, of Stratford-on-Aron, wrote these plays be producible in any perfection, or in any progressive form, from our cipher alphabets.

This point about William Shakespere has, we need hardly say, exercised the brains of opponents and friends alike. The following anagrams appear to the decipherers "very fairly perfect-quite sufficient to show the drift," or "eminently successful," that is, in the sense of proving that anything can be made, and that there is as much against as in favour of the Baconian anagrams.
(1) Will. Shaxpurre writ these plays (27 letters-3 couples unmatched.
(2) Will ${ }^{m}$. Shakp ${ }^{\text {re }}$. wrote these plays ( 27 letters- 4 couples unmatched).
(3) Will. Shaxper, of Stratford, writ these plays (36 letters6 couples unmatched).
(t) The immortal Willm. Shakespeare wrote al l these plays ( $=45$ letters- 10 couples unmatched).
(6) William Shakespeare, the sweet Swan of Avon wrotceall $++\quad++$ of these plays ( $=54$ letters- 10 couples unmatched). $++++++$
(5) Willy Shaxper, the sweetest of poets, wrote these $++\quad++\quad+++$ pIays $(=45$ letters-9 couples ummatched).
$+\quad+$
And so on, the imperfections usually increasing with the increase of the number of letters; whercas, in the Baconian anagrams the facility of working the anagrams to perfection, becomes greater in proportion as the 9's are added on.

[^6]Only one anagram of this kind has been submitted to the writer, which is, so far as it goes, complete. It is this:-
" Will. Shakespeare wrote these plays l'mself '(-36 lecters).
But here the very sentence proclaims itself mocle up; it is no part of a progression or gradual development of sentences, and the imperfect word "h'mself" is, to say the least, superflnous.
4. Since the above paragraphs were written, a further objection has been raised which may take the following form: "Your idea of the importance of the number 9 in this matter is merely fanciful. Any other digit would equally well answer the purpose, and produce similar sentences."

To this our answer is threefold :-
(a) The statement is incorrect. Haring worked ont with the same key letters as in our example anagrams with squares of $8,7,6,5,4,3$, we have found that about 1 in 6 of such attempts have been quite perfect. For the rest the average of faults, or ummatched letters, is from 2 to 6 or $\overline{7}$, according to the numbers of letters used.
(b) By no means could the perfect sentence, "Francis Bacon Lord Verulam Viscount Saint Alban and his brother, Anthony Bacon, wrote these plays," be produced by any digit but 9 , seeing that the sentence contains $9 \times 9$, or 81 letters.
(c) Sentences from other digits must after all follow the rules for the anagrams of the square of 9 .

The writer, before seeking for criticism or help, worked out, in order to obtain satisfactory evidence on this matter, upwards of 70 anagrams in which (with due varicty of spelling or abbreviation) we endeavoured to make the anagram declare that Will, William, or Willm., Shaksper, Shakspere, Shıkspur, Shakspurre, Shakesper, Shakespere, Shaxpur, Shaxpure, Shaxper, or Shaspere (with many more variations and modifications) "wrote these plays." We attempted to make sentences in a progression of 9's, bringing to our aid epithets such as "greatest," "most fumous," "heuven-born" "poct," and with the addition of "uctor," " menctyer," "Strutforcl," and "Strutford-on-Avon." Rarely was the effort successful, and the successful instances are " male up" and not "progressive" sentences.

If any have courage to pursue this investigation a stage further, and to try the result by a progression of anagrams (which, beginning as usual with 27 or 3 ; letters, advance through all the stages until they reach completion), he may have a better reward for his labours by introduciny a neyative.

He must, however, in the advanced sentences, introduce not only the address and avocations of the man, Will. Shakspere, but some unpleasing epithets found elsewhere in comection with him, and with which we at present refrain from shocking the eyes of our readers.

Those who weary of the terminal records may perhaps be better pleased with some, arranged on precisely similar principles, excepting that the key letters are given, seprrattely or in one wort, and which are seattered throughout the plays. Let them consider, for instance, the letters M, O, A, I, by which the langhing waiting woman contrives to hoax Malvolio in Twelfth Night (ii. 5): " M, O, A, I," he soliloquises, "What should that alphabetical sequence portent?"

In the present instance, as in the examples given, it is sufficient to set the letters on the wheel, and the sentence will appear-
> "Francis Bacon Lord Verulam wrote this play;" or, "Francis and Anthony Bacon wrote these plays."*

At the end of the same play (Twelfth Night, v. 1) is another suggestive sentence-
"Amh so the uhirligig of time lirimgs cubout its revenyes."
A whirligig is a wheel; and the "revenges" of time, for all that the author has undergone, are brought about when we place T, I, M, E, on the wheel. Then again the oracle declares-

## "Francis Bacon Lord Verulam wrote this play."

In the Turo Gentlemen of Verona we read-

* We are indebted to Dr. I. Hull Platt for noting that anagrams in early quartos eannot have been intended to inelude the titles in the first of the forms given above, and see below the first instance from Hamlet where the spelling seems to suggest the earlier date.


## "Then may I set the roorld on wheels."

Before thus setting the cipher letters on the wheels, we made a host of experiments which proved how excellently the Name of the great Proteus is capable of "being transformed and made to turn in the wheel."

The letters $\mathrm{t}, \mathrm{h}, \mathrm{e}, \mathrm{w}, \mathrm{o}, \mathrm{r}, \mathrm{l}, \mathrm{d}$, add up in the following sequences of $9:-$

$$
\begin{aligned}
& \mathrm{e}^{5}+\mathrm{d}^{4} \quad=9 \quad \mathrm{e}^{5}+\mathrm{l}^{11}+\mathrm{r}^{17}+\mathrm{w}^{21} \quad=54 \\
& \mathrm{~d}^{4}+0^{14} \quad=18 \quad \mathrm{w}^{21}+\mathrm{r}^{19}+0^{14} \quad=54 \\
& \mathrm{e}^{5}+\mathrm{h}^{8}+\mathrm{o}^{14} \quad=27 \quad \mathrm{l}^{11}+\mathrm{o}^{14}+\mathrm{r}^{17}+\mathrm{w}^{21} \quad=6 ; 3 \\
& \mathrm{~h}^{8}+\mathrm{t}^{19} \quad=-27 \quad \mathrm{~d}^{4}+\mathrm{e}^{5}+\mathrm{l}^{11}+\mathrm{o}^{14}+\mathrm{h}^{8}+\mathrm{w}^{29}=6 ; 3 \\
& \mathrm{~h}^{8}+\mathrm{l}^{11}+\mathrm{v}^{17} \quad=36 \quad \mathrm{~d}^{4}+\mathrm{l}^{11}+\mathrm{r}^{17}+\mathrm{t}^{19}+\mathrm{w}^{21} \quad=72 \\
& w^{21}+1^{11}+d^{4} \quad=\because ; \quad \mathrm{c}^{5}+\mathrm{d}^{4}+\mathrm{l}^{11}+0^{14}+\mathrm{r}^{17}+\mathrm{w}^{21}=\mathrm{a}^{2} \\
& \mathrm{e}^{5}+\mathrm{t}^{19}+\mathrm{w}^{21} \quad=4.0 \quad \mathrm{e}^{5}+\mathrm{l}^{11}+\mathrm{r}^{17}+\mathrm{h}^{4}+\mathrm{t}^{19}+\mathrm{w}^{21}=81 \\
& w^{21}+1^{11}+\mathrm{h}^{8}+\mathrm{e}^{5}=4 . ;
\end{aligned}
$$

The distances also are-From e to $W=9$.

(Besilles ertica roments buchacurds).
The upshot of the whole calculation is the statement that-

## "Francis Bacon Lord Verulam Viscount Saint Alban and his brother Anthony Bacon wrote this play."

One more instance, and we have done. In Hormlet, where Ophelia comes in demented, she utters these strange words: "You must sing dourne-u-towne, and you call him a-downe-u. Oh, how the wheele becomes it!"

Again, we find how excellently well the wheel does " become" or fit
this word " a-lowne." Here, once more, the sums of the letters form multiples of 9 , having a maximum of 54 .

$$
\begin{array}{llll}
d^{4}+e^{5} & =9 & w^{21}+0^{14}+a^{1} & =36 \\
a^{1}+d^{4}+n^{13} & =18 & w^{21}+o^{14}+e^{3}+d^{4} & =45 \\
w^{21}+e^{5}+a^{1} & =2 \overline{4} & w^{21}+n^{13}+e^{5}+d^{4}+a^{1}+a^{1}=45 \\
w^{21}+n^{13}+a^{1}+a^{1}=3 ; & w^{21}+o^{14}+n^{13}+d^{4}+a^{1}+a^{1}=54
\end{array}
$$

The distances are-From E to $\mathrm{N}=9$.

$$
\begin{array}{lllll}
, & " & ", & , N \\
" & " & " & ", & W=9 . \\
" & " & " & ", & \mathrm{D}=\mathrm{W}=18 . \\
" & " & " & ", & 0, \mathrm{~A}=18 .
\end{array}
$$

From the six alphabets (not repeating the A) we once more receive the messages, handed down for the information of future ages-
"Francis Bacon and his brother, Anthonie Bacon, wrote these plaies."
"Francis Bacon Lord Verulam Viscount Saint Alban wrote this play."


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## 

$$
\begin{aligned}
& \text { PR } \\
& \text { 2sLL } \\
& \text { perfu }
\end{aligned}
$$




[^0]:    * It is only fair to other students to state that anagrams on the same principles as those which are here treated of are common to nearly all other great works of the Elizabethan age. Some Baconians consider that undue prominence has been given to the mere Bacon-Shakespeare controversy, and that this, which is but a branch of the subject, has been made to appear of paramount importance. Nevertheless, since, for the majority of readers, "Elizabethan literature" is embodied in Shaliespeare, we depend upon that charmed name to conjure up interest in this question.

[^1]:    * This is the same difficulty which, in the first instance, Mr. Donnelly experienced. Since writing the above, we have been rejoiced to hear that he has vanquished this difficulty.

[^2]:    *It ean hardly be doubted that initiates were spared much of the time and trouble required by the processes here described by being furnisbed with ready-made tables of progression, or keys of some kind.

[^3]:    * It is needless to say that perhaps no two decipherers will check off the letters in the same order.

[^4]:    *See forward the specimen from the Comedy of Errors.

[^5]:    *N.B.-These elues have been removed in the "Halliwell Phillipps" reduced fac-simile (pul. : Chatto and Windus). In other respects, discrepancies between the original folios and their fac-similes have been found.

[^6]:    * Since the above was written we have made simpler and more perfect anagrams of the kind; but they do not admit of regular progression.

