Hints for Deciphering

The Greatest Work

OF

Sir Francis Bacon

Baron of Verulam
Viscount St. Alban

MRS. HENRY POTT

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Hints for Deciphering the Biliteral Cipher

By Mrs. Henry Pott

(The small numerals refer to the Diagrams reduced to Four Sheets of Illustrations)

The purpose of this paper is to explain as simply as possible the manner in which the Biliteral Cipher may be worked by observant persons with good eyes. By no means is it proposed to fight the battles of Mrs. Elizabeth Wells Gallup; she needs no help; her own works of monumental patience are her best defenders. But discussion has reached a point at which it seems desirable to lay before the public things not generally understood, or perhaps intentionally ignored, but which are essential for this deciphering. Ignorance of such particulars seems to be at the bottom of the confused accounts given, and of the mistrust expressed concerning the existence and nature of this cipher.

Let it be realized, and acknowledged from the outset, that *Mrs. Gallup nowhere undertakes in her books to teach her own system of deciphering.* She quotes, and gives *facsimiles* of "Bacon's" explanation and examples. These concern the general method and fundamental principles which rule this kind of cipher. Mrs. Gallup goes no further in the way of instruction, neither does "Bacon." Such rules are all that are needed for the insertion of cipher into script (or engraved writing), such as is used for examples in the *De Augmentis.* But the Biliteral Cipher was destined to be inserted in *printed* books, widely read, and subject to constant observation and inspection.

Can any sensible person for one moment conceive that our most subtle and farseeing inventor, having contrived a method by which he could convey "the secrets of his over-charged soul," would then infold such secrets in the very book wherein he had fully explained how to decipher them? Is it rational to imagine that a man of his almost superhuman powers of mind, bent upon securing secrecy for his cipher, would publish so accurate and detailed an explanation of it "that any purblind eye could find it out"? Such notions are surely as thoughtless and unintelligent as that other

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(which yet extensively prevails) that, having contrived a cipher which he pronounced "worthy of preservation," having "the perfection of a cipher which is to make anything signify anything"—*he never used it.*

Since to some minds such views appear more than unreasonable—almost grotesque—we ask for a calm hearing whilst endeavoring to present a different view of the subject, a view for which none but the writer is responsible.

It should be borne in mind that, in the early works, or the early edition of those works, the deciphering is simple, and comparatively easy. As a rule, no tricks or stumbling blocks had then been introduced to confound the would-be decipherer; yet we seem to perceive indications of hints, marks, and signs, probably explained verbally to the uninitiated, and sometimes noted in the cipher itself.

After about 1616, it seems indubitable that extra devices were adopted, and from time to time varied, in order the better to screen the cipher then becoming dangerously ubiquitous. Our subject, therefore, divides itself into two parts: I—The simple and original method. II—The devices and difficulties introduced.

For the benefit of those who may not have access to the description of this Biliteral Cipher in Bacon's *De Augmentis*, lib. vi., it seems well to rehearse it here.

I—THE BILITERAL ALPHABET.

Francis St. Alban, three years before his supposed death, claims for this cipher that it enables a man to write *omnia per omnia*—anything by anything. By means of it, an author and his printer may imbed within a Play, Poem, or Speech, Treatise, Sermon, or what not, a message, or matter of a totally different kind, granted that there be five times as many *italic* letters in the printed book as there are letters in the words to be infolded. "Bacon's" explanation of his method is brief.

"It shall," he says, "be performed thus: First, let all the letters of the alphabet, by transposition, be resolved into two letters only. For the transposition of two letters by five placings will be sufficient for 32 differences—much more for 24, which is the number of the alphabet."[1]

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Here is his example of an alphabet made up of two letters, which he calls *a* and *b*. We might equally well distinguish them by any other names or signs, by *o* and + or dot and dash, as in the Morse alphabet, which Francis St. Alban practically invented. All that we have to understand is that, to compose each letter, 5 *a*'s and *b*'s variously arranged, have to be used.

Before attempting to decipher, this alphabet should be learnt by heart. To have to refer for each letter to a table or key is infinitely wearisome. We can make for ourselves some *memoria technica*; here is a simple table which has been found useful, and which shows that the biliteral alphabet is methodically planned.[2]

It is well to observe that font *a* is far more frequently used than font *b*. In the biliteral alphabet there are 68 *a* letters to 52 *b*'s. Moreover, the only letters which use so many as 4 *b*'s are the little-used Q and Z. On the other hand, one letter, A, is made of 5 *a*'s only and 5 other letters have 4 *a*'s each. We must therefore expect to find many more *a*'s than *b*'s in our deciphered letters. This is in some degree a guide in sorting out our two alphabets or fonts. The *most frequent* letters are likely to be *a*'s. The peculiar, rare, or deformed letters are likely to be *b*'s.

Also no letter in the Biliteral Alphabet begins with *two b*'s, and the largest number of *b*'s which can ever come together is *four*.

It is evident that secret matter could be written merely by means of this two-letter alphabet, but such a cipher would be extremely cumbersome; moreover, if once the idea of an alphabet formed of 5 cipher letters for each true letter were grasped, the whole secret would be divulged.

<div align="center">aabab ababa babba aaaaa babaa aaaaa babba</div>

Here are the words "Fly away." Thus written such a cipher would be, on a large scale, impracticable, and on a small scale unsafe. Our great cryptographer therefore had recourse to a further contrivance, which forms the next stage in this cipher system.

II—THE BI-FORMED ALPHABET.

We must now, for a while, lay aside the *Biliteral*, or two-lettered alphabet, and fix our eyes, bodily and mentally, upon this second alphabet, with

which the printer is chiefly concerned.[3] This "Bacon" calls the "*Bi-formed*" alphabet, because each letter is here represented by two different forms or shapes of italic type. Printers term their supplies, or sets of different kinds of type, "*fonts.*" From one supply, or font, the compositor will draw letters which are all to stand for *a;* from the other font, letters of a different shape to stand for *b*.

It is unimportant how many varieties of type there may be in each font, so long as the type in the *a* font differs recognizably from the type in the *b*. Variety creates extra difficulties for the uninitiated, but not for the initiated decipherer.

If this were well understood it would make a clean sweep of many bones of contention. For the present, however, we will pass over this cunningly devised obstacle, and return to the original script, in which (like the Biliteral alphabet) this *two-formed* alphabet is presented in the *De Augmentis.*

Although Francis St. Alban himself informs us that he invented this "perfection" of a cipher at Paris (when he was about 17 years old), he excludes any account of it in *The Advancement of Learning* published in 1605, merely alluding to it in his "enumeration of the private and retired Arts" of ciphering. A description of it appeared first in the completed Latin edition, 1623. In this year was published, with the pseudonym *Gustavus Selenus*, the great book of ciphers, and the much discussed "Shakespeare Folio," in which a mass of cipher is found to be infolded. Forty years, then, passed between the *invention and use*, and the publication of any particulars concerning this "perfection" of ciphers. When published, the matter was still muffled up in Latin, to veil it from all but the learned—the privileged "Sons of Science."

It needs but little penetration to discover why this cipher was presented to the eyes of the public in script or engraved writing rather than in type. The examples are supposed to be taken from a piece of writing. "The Exterior" letters which infold the illustrative passage, are from Cicero's 1st Epistle, "wherein a Spartan letter is involved." Had the demonstration been made in ordinary printer's type, anyone reading would be likely to observe the contrasted "forms," the mixture, the differences, and the strange irregularities which meet the observant eye at every turn in the

vast "Baconian" literature. Once observed, it would soon become impossible to ascribe these to "errors," or to printers' carelessness. Let us look a little into the earliest, simplest, and most easily distinguishable forms of italic type, the two kinds first chosen by the inventor, and which are easily recognizable in the specimen which he gave us. Until we can readily distinguish these elementary differences, all efforts to advance in this "retired art" must prove futile.

In early books the capital letters usually differ conspicuously in shape in the two fonts. They stare us in the face on almost every page, of the Shakespeare Folio (1623), especially in the head-lines. In books, however, after the "first period" in Biliteral ciphering, matters are complicated by introduction of a *third form* of capital, which was, *at the same date*, insinuated into a Paris edition of the *De Augmentis*.*

Small letters are more difficult to distinguish. Here are a few general observations applying to one example[4]:—

1. As a rule, letters of the *a* font are larger, rounder, more upright and robust than those of font *b*.

2. In C and E the curve stroke at the bottom projects in the *a* font as though to meet the top. In the *b* font the letter slopes away.

3. Letters with two or more limbs are squarer, more upright, usually less sharp in the *a* than in the *b* font.

4. Of the long-tailed letters we may say that the *b* font slopes the most, and usually has the longest flourishes.

5. O, and letters like Q, including an O form, are judged by the slope of a line drawn through the longest diameter of the O.

Having mastered these particulars, it is disheartening to find that now and then the alphabets are *reversed*, perhaps only for a letter, or for a few words, but just enough to put a beginner off the scent at first starting, or in very short pieces. Such change or reversal seems to be indicated by means of dots. One dot in a letter reverses that letter. If it properly be-

*See the London and the Paris Editions, differing, but published simultaneously. —Baconiana, Jan. 1901. [An error, London edition, 1623; Paris, 1624 edition.]

longed to the *a* font it must be reckoned as of the *b* font, and *vice versa*. Where *two* strange dots are found close together, the alphabets have their normal meaning. The erratic stops require looking into.[5]

Those who seriously desire to get to the bottom of this subject should not be content to hear or to read, and without further effort accept or reject other people's opinions. They should follow every stage of inquiry by painstaking experiments, comparing, measuring, tracing, until the eye of the observer is well trained to the perception of minute differences and their meaning. As an example of the practical method of inserting a secret message into any manuscript or print, no instance can be better than that given by Francis St. Alban himself.

He supposes a man desirous of communicating to friends in danger, a warning that they should "fly."[6] The letter is in Latin, so he hides the word "Fuge" (*fly*) in a phrase containing 5 times the number of letters which compose that word of 4 letters. In other words, he makes up a sentence of 20 letters at least, and this is the "exterior" sentence which he chooses:—

"Manere te volo donec venero." (*Do not go till I come.*)

This is the mere envelope to the true message, "Fuge" (*fly*). You see that it contains 23 letters, of which 20 (or 5 times 4) will be used, and 3 will be superfluous or "nulls."

Reduce the interior epistle to biliteral letters. "Have by you at the same time an alphabet in two forms; I mean one in which each of the letters in the common alphabet, both capital and small, is seen in two different forms. Then take the interior epistle reduced to the biliteral shape, and adapt to it letter by letter your exterior epistle in the biform character." [3 and 6]

Looking upon the cipher sentence, we may reflect somewhat after the fashion suggested in the following table. (It will be understood that by "straight" and "round" are meant the straighter and rounder of the two italic types). *See diagram.*

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Biformed Alphabet.	Reflections.	Biliteral Alphabet.	Result.	
M	—Straight......................	a		
a	—Straight, round................	a		
n	—Sloping, sharp.................	b	a a b a b = F	
e	—Straight, round................	a		
r	—Sloping, sharp.................	b		
e	—Greek ε......................	b		
t & e	—Straight, round...............	a a	b a a b b = U	Fuge
v o	—Pointed, flourished.............	b b		
l o	—Upright, unflourished...........	a a		
d o	—Sloping, flourish, loop..........	b b	a a b b a = G	
n	—Upright, round................	a		
e c	—Upright, round................	a a		
v	—Sloping, sharp.................	b	a a b a a = E	
e n	—Straight, round................	a a		
e r o	—All "nulls," too few to form a letter.			

So here is our secret word "Fuge," with 3 superfluous letters. In the original a large dot is placed under the *n* in *"venero,"* to mark the end of the cipher word. In this elementary example the cryptographer also divided his letters into groups of 5; so we know both where to begin, and where to end. In deciphering books this is rarely the case. It is easy enough to read from the script or engraved writing, with a pattern alphabet at hand for comparison; but it is a far more difficult task, without guide or pattern to extract the cipher from printed type. So much is the difficulty increased to untrained eyes, that we find people who, after some effort, still fail to distinguish the existence of the two italic types even in such glaring instances as the 1623 *De Augmentis*, and the 1623 Shakespeare Folio.

We cannot but admire the care and skill of the compositors who could so accurately set up those delusive types. An occasional slip must fairly be expected; but such slips are marvellously rare. The die-sinker, as will be seen, also plays an important part in the affair.

It has been frequently asserted that no printer could have set up type in the manner necessary for inserting the cipher. Printers, however, do not say so, and the requisites for such printing would be as follows:—

1. The cryptographer's MS. marked so as visibly to designate the font of type to be used.

2. Two fonts or stores of type, arranged so that the compositor can readily take his letters from either font, and place them on the line, according to the marked MS.

There is little more difficulty to the printer in using two kinds of italics than there would be in using arabic and roman numbers with letters, or roman with italics, which things are commonly done. The *trouble* is great, on account of the mixture occurring so frequently, from the use of both kinds of italics in the same word, and the work must have proceeded slowly in consequence, but there is no impossibility in the case.

Similarly it has been objected that no printer would have, *in one font,* such a variety of differently formed letters to represent *the same* letter, as may be seen in the *f*'s and long *s*'s* on Mrs. Gallup's Table of Alphabets, taken from the *Novum Organum.* But why not, if variety could be combined with the geometrical rules which control the form of the two fonts, and if such variety would conduce to the security of the cipher?

So much mystery surrounded the arts and crafts connected with printing that, in early times, these became associated in the popular mind with sorcery and diabolical machinations. Such notions were probably nourished by the great typographers in order to draw away attention from their accurate and business-like methods and purposes. That such subjects should not, at the time, have furnished matter for many books, to be printed even by these very typographers, and in their own printing houses, is hardly to be credited; but now, as formerly, mystery enshrouds all such subjects. Modern books cast little light into these dark places, and the old books whose names we may glean, are seldom shown in libraries to the uninitiated reader.

Nevertheless, no observant person will have examined in detail the type, the *individual letters,* of a large number of "Baconian" books, without satisfying himself that these letters, whether cut in the wood blocks, or cast in metal, were cut and cast with infinite skill and calculation. We must perceive a master mind regulating the cutting of those letters; we cannot believe that they were cut by chance, or roughly, for their irregularities are our guides; neither can we think that beauty or symmetry regulated their form, for many are crooked and deformed, *not* beautiful, or such as

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*Nevertheless, the long *s*'s present great difficulties. The writer has found it impossible by form alone to distinguish some of them. In the instances of double *s*, and where the letters are perhaps of different fonts, only the most careful measurement from the base of the preceding long letter has afforded any help. Often the writer has been forced to have recourse to the unsatisfactory "passing over" method described farther on. There may be some principle, as yet undiscovered, governing these letters.

the perfect printer delights in. Yet perfect printing was produced in the time of "Bacon"; we have only to examine the books shown in cases at the Bodleian and other great libraries to know this; and a remarkable thing is that the "worst" or most irregular italic type is visible in certain editions of the greatest works. We find, too, that the different great printers had not only each his own *regular*, but his own *irregular* type, and that this is one cause why, before beginning to decipher, we should study closely the letters used in the particular book under examination. The old decipherers were, we doubt not, spared such laborious research, by being furnished with a true and complete key. Perhaps it is unreasonable to believe that these keys to the front door are lost; but we, "the profane" without the pale, are unprovided with them, and must, therefore, try to enter the Palace of Truth by other means.

All this brings us to the subject of *Difficulties* in deciphering from printed type. That here we find many difficulties no one can deny, and the sooner we look them in the face, and try to master them, the better for everybody concerned.

Can we believe that our philosophic cryptographer, the very incarnation of "Method," who had a reason for everything that he did or proposed, would introduce difficulties, and cast stumbling-blocks here and there, haphazard, regardless of the Order which he esteemed as Heaven's first law? Or, having devised such artful means of securing his cipher from discovery, would he have left these new devices unexplained, and unexplainable by any definite rule?

It is surely more easy as well as more rational to suppose, when we meet again and again with some strange phenomenon, that, as Sir Hugh Evans says, "There is reasons and causes for it," causes discoverable by time and patience, and which are indeed not buried out of reach, but merely screened, though known to the traditional "handers-down of the lamp." The very repetition of the same "errors," the same strange particulars, enables us at last to marshal them into order, to classify them, to account for them, and in the end to proceed, as our Great Master would have us do, "from particulars to generals"—from facts to sound principles.

It seems a pity, when a thing is known, that so great an expenditure of time and labor should still be needful in order again "to do the deed done." It is a thing against which Francis protested, so the fault lies not

at his door. However, as things are, we must persevere, and make kindly excuses for each other when (as we all are likely to do) we stumble or bungle in efforts to frame hard-and-fast rules to harmonize the irregularities, or apparent contradictions, to be met with in certain editions of most Baconian books.

Excepting in the earliest specimens, the present writer soon found that the mere *form* of the letters is insufficient to decide the font of type to which each letter belongs; neither is it possible always to judge letters *apart from their neighbors*. Since these words were written we have been amused with the description given by a writer in the *Times* of a process in his own attempts at deciphering, in which he cut out letters very carefully, and pasted them on to a sheet of paper. It is perhaps needless to add that the decipherer's efforts were not rewarded with success.

At first it was found necessary in attempting to decipher, to pass over some doubtful letter, leaving a space to be filled in later on. This plan, although perfectly legitimate, is too unscientific, and too much open to adverse criticism to be altogether satisfactory. There must, we all feel, be some method absolutely incontestable, and which may be relied upon to carry us through all difficulties as well as to explain anomalies and discrepancies. Many men must have worked with this cipher; it was to be made the means of handing down to the future ages a marvellous history, for reasons of State suppressed, but, by him whom it chiefly concerned, designed to be read by many in his own age, and in all time. But men have not the patience of Mrs. Gallup, and even if they did possess this precious qualification, few can spare time for such laborious research, "tedious," "irksome," as the cryptographer himself terms it. There must surely be some easier path than that usually pursued—some short cut open to the initiated!

We submit to your consideration some notes made two years ago, but which we have found no cause to alter. They are summed up in the injunctions to go "by line and level," and to "act upon the square." In other words, the *unrecorded* principle is geometrical, and the thing a matter of angles.

III—OF ANGLES, AND HOW TO APPLY THEM TO THE BILITERAL CIPHER

(The decipherer should supply himself with a small quadrant or projector, a fine 4-inch rule, or some cards cut to right angles.)[7]

1. Roman type consists of letters standing perpendicular to the base.[8] italics slant from the right *downwards*. Italics of two different fonts differ, *not so much in form as in slope* or slant.[9] They are distinguishable most readily (in books of the later period at least), not so much by their shape, size, or thickness as by *the angle formed between their chief upright line and the base*. It appears to be a rule that alphabet *a* should have its chief lines sloping 10°, and alphabet *b* 15°, from the perpendicular.

2. In the letters of many old books we are struck by the irregularity of the *level* of the letters.[10] The words seem often to have been printed almost without regard to a base line. Still, there is a regular irregularity. We do not observe these things long before we become convinced that they are no matters of accident or of carelessness, but of premeditation and "cunynge," or skill.

The printer evidently did plant his letters upon a straight line, but the letters were so cut upon the die that, when arranged for printing, some should touch the base line, others be raised above it.

This is plainly visible in Spedding's Edition of "Bacon's Works" (1875; see vol. iv., pp. 446, 447). Here Cicero's epistle is translated into English, with the Spartan letter (also translated). This message, enlarged in modern type, shows how the irregularity of level helps us to decipher. It also proves how well the whole principle of the Biliteral Cipher is understood by a certain circle of literary men, and certainly by the printers of Messrs. Spottiswoode.

The difference of level is here seen very distinctly, but take heed that in the cipher books all such differences are *very slight*. The eye must be trained to distinguish them, for the width of a "line" is sufficient, and persons accustomed to drawing and measuring microscopic insects will be the most apt pupils for this work. But Francis has prepared us for this. "He that distinguisheth not in small things makes errors in great." That is a true saying, and the minute distinctions, although to an inexperienced eye

almost inscrutable, become, by study, readily perceived; for, again, "Everything is subtile till it be conceyved." Once "conceyved," or perceived, it is no longer so subtle as to escape comprehension.

Certain objects casually introduced into some old books persuade the writer that special instruments, or implements for measuring, were used by the old type-cutters and founders; and in scientific collections very delicate instruments may be seen which could measure levels and angles to an extreme nicety, and some of which were known in the Elizabethan age. Fellows of the Royal Society should help us in these matters.

Now see how difference of level affects the rule already given as to the angles or the slanting from the perpendicular.

Say that two or three of the letters of the same name come together, but that the exigencies of the cipher require one of these to be an *a* and the other a *b*, it would at once strike the eye if these letters differed conspicuously in *form*, or in *slope*. What, then, is to be done?[11] Well, we see that the *shape* of the two letters will be made very nearly the same, but the *b* letters will be slightly raised above the base line. The effect is to create what may be termed "*a false base*." A line drawn from the true base on which the previous *a* letters stand, and made to touch the bottom of the raised letter, must of course slope upwards from left to right, and that sloping line is the base of the raised letter. Taking this *false* base as true, we turn the paper so that the false base is horizontal, and erect upon it a perpendicular.[12] At once we see that the letter slopes fully 15° from its perpendicular; it is therefore a *b*. This simple device has been found valuable, and almost invariable in cases where form alone does not decide the question as to the font from which some letter is drawn. The application of the rule must, however, vary according to the letter to be concealed. The second *m*[14] is considered to be a concealed letter. In some books, as for instance in the first edition or the Folio of 1616 of "Ben Jonson's Works," in the 1629 edition of the "History of Henry VII.", in the "Davideis" of Cowley (1669), and in Evelyn's "Sylva" (1670) the form of *m* occurs, which has its first limb shortened or deformed. Such varieties are rare, and seem always to be *b*'s; but much more examination must be made before we venture to speak positively on such points.

In letters like *m* and *n*,[13] with more than one down stroke, the *b* font is often known by the shortening of the last member. In *i* the position of the

dot sometimes decides the slope. In letters with *o* in their composition, *a d g o*,[14] a line through the greatest diameter is a test. But quite as often the distinction is most easily made by means of the false base line and its perpendicular.

Tall letters, as *b, d, h, k, l*,[15] may be discriminated by the slope of the seriphs at the top. In *f* and *t* the cross strokes perform the same useful office. Even in the capitals and in script the ruler spares the cryptographer much anxious peering. In the diagrams the small strokes and their slopes have been exaggerated in order to render them more quickly perceptible. The absolute forms vary, as has been shown in the type used by different printers; and we being still only in process of learning, these instructions and diagrams are not offered as unimpeachable, but merely in order to impart things which seem by experience to be true, and to make clear by demonstration points which may not have been made clear by words. Observe how useful is this geometrical aid to deciphering when two or more similar printed letters come together: for instance, several *m*'s, *u*'s, *n*'s, and *i*'s in "communication".[14] There is nothing very crooked or suspicious about these words, nothing very different in the forms of the letters. But looking closely we observe that the *m* in "my" and the second *m* in "communication" have *the last limbs* of those letters slightly shorter than the first. This might pass for an imperfection in the print, but it is an imperfection for a purpose. By ruling a line from the base of the longest limb through the base of the shortest, we see that it slopes upwards to the right. Erecting a perpendicular upon this false base, we perceive that this *m* is very sloping, consequently of the *b* font, and so with the *u*, *a*, and the *n*'s and *u*'s. The two *o*'s and the second *i* are for a similar cause *b*, and the result, by reference to the code, is the word "Try." In letters which branch upwards into two or three limbs, as *r, v, y*, the base, false or true—in other words, the angle—may often be ascertained by ruling along the upper members. These things take many words for explanation, but in fact they are simple, and so soon perceived by observant eyes that the decipherer is not long in discarding the quadrant and ruler which at first seemed indispensable.

This method of measurements by angles will be found to account for all the difficulties raised by over-zealous objectors to the use of diphthongs, or compound letters. The slanting of the cross stroke, or of a stroke on one

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of the feet of an *A*, &c., may decide the font to which either letter belongs. Often the stroke is seen to descend from left to right in one letter and from right to left in its twin, or *vice versa.* In these cases line and level over-rule form.

Yet do not for a moment suppose us to say that the *forms* of the letters are unimportant. *They are of primary importance;* on them the great contriving mind based his whole method; in script and in the earlier books, form is at first the one thing to be studied. But in later books, say, from 1616 we confess to have found *form* to be insufficient for working out this cipher. With no guide but form alone, a good deal of conjecture has to be indulged in, and the labor is stupendous.

The only true and satisfactory method in studying this concealed art is, first, as Mrs. Gallup has done, thoroughly to grasp the principles laid down by the "Great Master" himself; then, when the early and simple books have been gone through, when we have thoroughly conquered the system up to that point, we begin to observe anomalies, discrepancies, and stumbling-blocks cast in our way, and perceive that the first simple instructions do not suffice for advanced works. We shall observe strange marks introduced; fresh devices, apparently grafted on to the original stock. We must not overlook or explain away such hints, signs, and landmarks; rather, by patient collation, and indefatigable note-taking, we must find out how to utilize these tiny pebbles dropped in the labyrinth as guides for us to follow. Doubtless they were imparted verbally to trustworthy collaborators, and, as already said, it is hardly possible to doubt that they are still well understood by the traditional Sons of Science of Francis St. Alban.

We know that at least six kinds of cipher have to be found out. Of these, so much is known about four or five as to leave little doubt that the next generation will be able to unravel their long weaved-up secrets. Much more would doubtless have been published by this time were it not for the opposition of the press, and for the almost disgraceful ignorance of the true history and character of "that miracle of men," Francis St. Alban, whose title alone is sufficient to point to him as the patron saint and practically the Founder of Speculative Masonry.

To beginners it must in conclusion be said that this entrancing work "drinks much time," and needs (besides keen eyes, and the kind of genius

which Michelangelo defined as "endless patience") a free, open, and "nimble mind, apt to perceive analogies"—ready to take in a hint or a new idea, and capable of putting two and two together—a faculty most desirable for all Baconian researchers. If things turn up which we cannot account for, or which may uncomfortably disarrange our preconceptions, do not let us thereupon lose confidence in ascertained facts, or begin to discredit the labors of those who have been more successful than ourselves. Rather, let us fairly and frankly look our difficulties in the face, confess our short-comings, and follow the sensible advice of old Polonius:—

"Now remains
That we find out the Cause of this Effect,
Or, rather say, the Cause of this Defect,
For this Effect defective comes by Cause."

An Example of a Bi-literarie Alphabet. *

A   B   C   D   E   F
aaaaa aaaab. aaaba. aaabb. aabaa. aabab.

G   H   I   K   L   M
aabba aabbb abaaa. abaab. ababa. ababb.

N   O   P   Q   R   S
abbaa. abbab. abbba .abbbb. baaaa. baaab.

T   V   W   X   Y   Z
baaba. baabb. babaa .babab. babba. babbb.

Methodised Alphabet

aaa	aa	aab	aa	aba	aa
aaa	ab	aab	ab	aba	ab
aaa	ba	aab	ba	aba	ba
aaa	bb	aab	bb	aba	bb

abb	aa	baa	aa	bab	aa
abb	ab	baa	ab	bab	ab
abb	ba	baa	ba	bab	ba
abb	bb	baa	bb	bab	bb

*Examples from Ad.t of Learning 1640 & Henry Seventh 1622.

An Example of a Bi-formed Alphabet.

a. b. a. b. a. b. a. b. a b. a. b. a. b. a. b.

A. A. a. a. B. B. b. b. C. C. c. c. D. D. d. d.

a b. a. b. a. b. a. b. a. b. a. b. a. b. a. b.

E. E. e. e. F. F. f. f. G. G. g. g. H. H. h. h.

a. b. a. b. a. b. a. b. a. b. a. b. a. b. a. b.

I. I. i. i. K. K. k. k. L. L. l. l. M. M. m. m.

a. b. a. b. a. b. a. b. a. b. a. b. a. b. a. b. a.

N. N. n. n. O. O. o. o. P. P. p. p. Q. Q. q. q. R.

b. a. b. a. b. a. b. a. b. a. b. a. b. a. b. a. b.

R. r. r. S. S. s. s. T. T. t. t. V. V. v. v. u. u.

a. b. a. b. a. b. a. b. a. b. a. b. a. b. a. b.

W. W. w. w. X. X. x. x. Y. Y. y. y. Z. Z. z. z.

4

AAAA BBBB CCDEEFFGGG
HHJJIKKKKKLL MMM
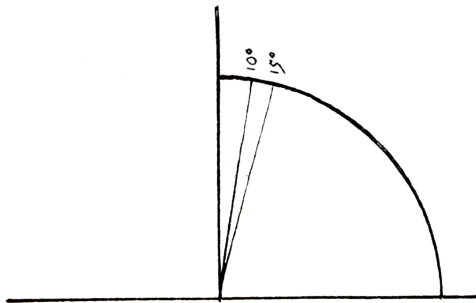*NNOO PP QQQRR.&c*

5

Erratic Stops

,,,, s,s,s,s, r:a:l.·i.??i?e;h;e;e;e;e; g.r.r.e·

i.iiii   &   &

6

F   V   G   E
a ab ab.b aa b b.aa b ba.aa baa.

Maner te volo donec venero

7

8 ABCDE   9 ABCDE

10 *Individuall*

11 *book book*   12

13

a a a a   *b b b b*   *d d d d*   *f f f f*   *ſſ ſſ ff*

r r r r   *v v v v*   *m m mm*   *n n t t t* *o o o*

w w w w   *Æ Æ Æ A A A A A*
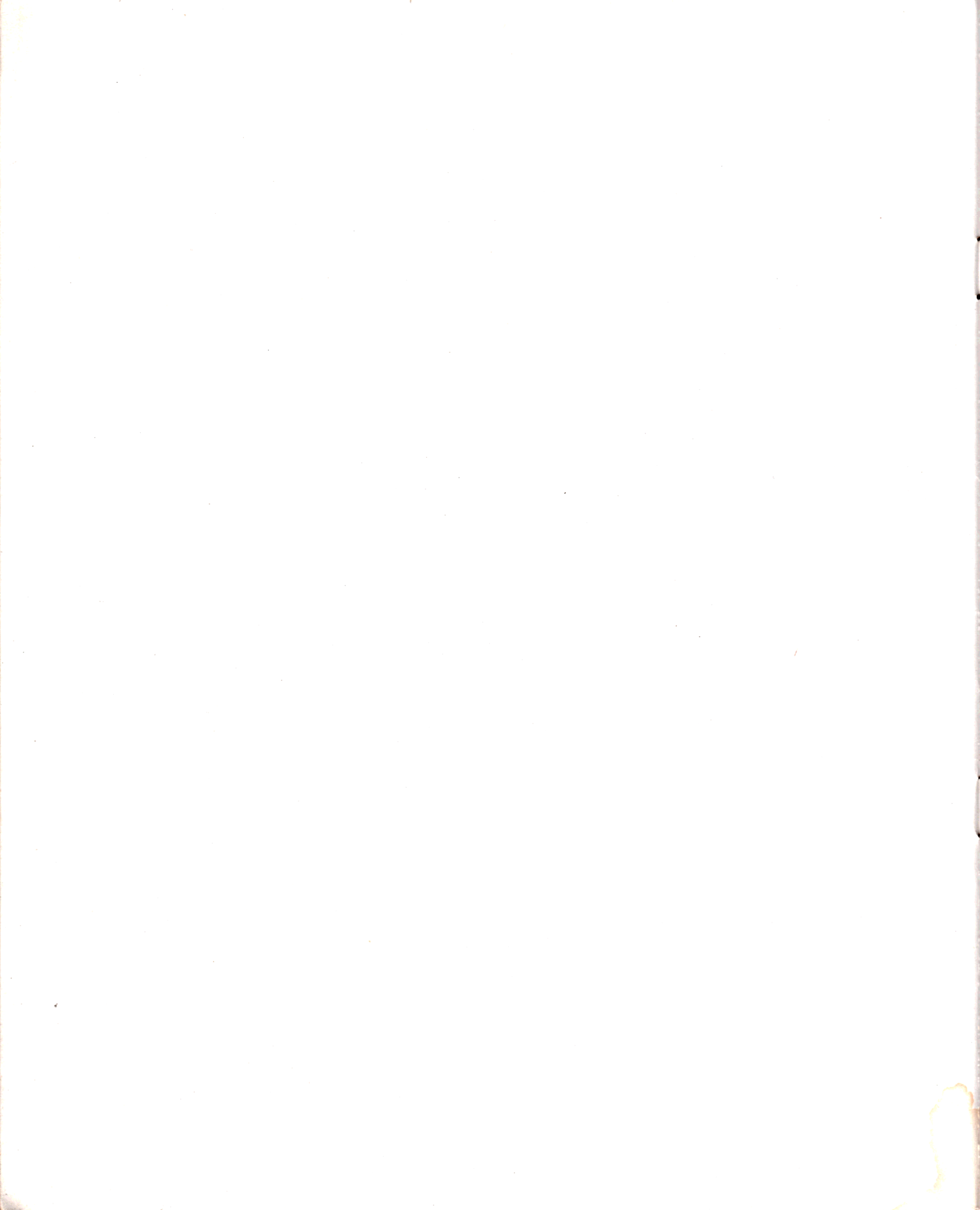
V V N N N N M M R R

14

my	*com*	*m*	*unic*	*ation*
b a a b a		*b a a a*		*b a b b a*
T		**R**		**Y**

It may Pleaſe Your Highneſſe,

15

It	*may Pl*	*eaſe Y*	*our Hi*
a a	*b a a a*	*a b b a*	*a a a b b*
	T	O	D

ghneſ	*ſe You*	*rHigh*	*neſſe*
a a b a a	*a a a a a*	*b a b a*	*a b b a*
E	C	Y	P

Honou	*rMemo*	*rieKi*	*ng &c*
a a b b b	*a a b a a*	*b a a a a*	*&c*
H	E	R	