



Secret Writing

Content Overview

Like many writers, Poe was very interested in secret languages. He prided himself on his ability to create and solve cryptograms. This interactive explores that interesting fascination.

Students can read and learn about ciphers, and use an interactive "cipher builder".

You might introduce the activity with the video clip featured on the Secret Writing homepage. Actor John Astin portrays Poe and says: *"Secret writing has always interested me, and I've thought quite a bit about it. To me, the ability to write and unlock ciphers requires a special analytical ability that not everyone possesses—even if they are otherwise sharp in their thinking. However, as I said in the article 'A Few Words on Secret Writing,' 'Few persons can be made to believe that it is not quite an easy thing to invent a method of secret writing which shall baffle investigation. Yet it may be roundly asserted that human ingenuity cannot concoct a cipher which human ingenuity cannot resolve."*

Section 1 - Introduction

If you received a note like this, what would you think?

IBWF ZPV SFBE UIF BTTJHONFOV?

Obviously, someone didn't want everyone to know what was being said. That's why he or she wrote the message using a kind of secret cipher. What's a cipher? [link to definition].

The message is written using a simple substitution cipher. One letter here replaces another. The spaces divide the cipher into words.

Here's how you can decipher the message above. [Links to section 2]

Like many writers, Poe was also very interested in secret languages. He prided himself on his ability to create and solve cryptograms [Links to section 3], and often wrote about this process. In fact, one of the cryptograms he may have created was just solved in 2000. [Links to section 4]

Poe built his short story "The Gold Bug" around a cryptogram. The main character has to know how ciphers work [Links to section 5] in order to solve this mystery.

How do you think your deciphering skills rate? Here's the cryptogram [Links to pop-up below] that unlocks the key to Captain Kidd's treasure in "The Gold Bug." Can you solve it?

Pop-Up Information

53†††305))6*;4826)4†.)4†;806*;48†8†(60))85;1†(:;†*8†83(88)
5*†;46(:88*96*?;8)*†(:;485);5*†2:*†(:;4956*2(5*—4)8†18*;40692
85);6†8)4††;1(†9;48081;8:8†1;48†85;4)485†528806*81(†9;48;
88;4(†?34;48)4†;161;;188;†?;

Read how the story's main character Mr. William Legrand, broke the code and found the treasure in this excerpt from the short story. [Links to text of an excerpt from "the Gold Bug". Text of this excerpt can be found at the end of this document.]

Try your hand at [solving some other cryptograms](#) [Links to section 6] – straight from the works of Poe.

Section 2 – Solving the Message

There are some things you can tell about this cryptogram without knowing what it says. You can collect clues by looking for patterns. First of all, the phrase ends with a question mark, so it probably is some kind of a kind of sentence. Secondly, there are spaces between the groups of letters. This means that the groups of letters are probably words.

The message is written using a replacement letter for each letter in the cipher.

This letter in the cryptogram	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Replaces this	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P

To EDGAR A. POE, Esq.

DR TI OGXEWF PjUFy nUH IA VQSMGg
xdTbj: SNB esLAKZYQ CP Vt HZGZLr
LbL ceMynhg iRFKIXqj O Wv LpDn Rr jKLT
QJTBXPeE yGmU Vb PwGATs Znu vAVTA
dNB yFKxdgf ZNsmScZ kr rto rO qZ Mfg
wVcXHB wuL nkn AfksO iyjDV bLrP
SfZl CEbNSW bGerth aNjmx sekThyAc
IXDktakY vaThyAc vNjmx sekThyAc
PGBtd rO ck YTDN LRQAP K-R-F- P
SEB dNB LQu Lph njuL atg diKy WAO cE
shyav yaXmidE oVw kyip rEg vlnjL
nvr jAE cLT p bP WAtLW SgS HltW
Udicame nk VFHA IDah XMXtIax Ye vj
adFqW WpHf de jv rKMXtIax Yc vj
adFqW XQOmkUlwaxE s s v AgOia
shyey rrc GtOQOIBB QOI
NBLEmMq nk Lcoar SaIvrl NZq
dZq hlgd rZq gTjz qd auGf
RZuK Cta xl WtX JdmnUtr
GdnyL Bri bznL LvtL pFw
ceToYd IA VtrI rMfTv rph
VDJ jvUctm cW ngN nN
pR hEVA Mr yKIn cW
raxwglQl Lma se aFecI
XsKy bWYsk lEOnx zri cmr
QDawNRvR Gb Gb CFg
CfE Cg VnkV zri PSLB
DIoe fjeo ky ci CFg
Iylv ana cPreg v Vtda
K Afpn cPjrc Wlpb
Kj emy ia Gnd

Shawn Rosenheim, a Williams College professor, had spent a long time struggling to solve this cryptogram. He and others thought that Poe himself may have written it. He had explored this topic and others related to Poe and his cryptograms in a book called *The Cryptographic Imagination: Secret Writing from Poe to the Internet*.

Despite his best efforts, he just couldn't solve the puzzle. But someone could, he thought. He decided to hold a contest, with a prize of \$2500 going to the person who could make sense of the cryptogram. His college guaranteed the prize money.

The cryptogram was published on the Internet, and hundreds of people tried to find out what it meant. No one succeeded until 2000, when a Toronto software engineer took up the challenge. In July of that year, Gil Broza cracked the mystery. Using his cryptographic talent—and a computer—Broza found this solution:

It was early spring, warm and sultry glowed the afternoon. The very breezes seemed to share the delicious languor of universal nature, are laden the various and mingled perfumes of the rose and the - essaerne (?), the woodbine and its wildflower. They slowly wafted their fragrant offering to the open window where sat the lovers. The ardent sun shoot fell upon her blushing face and its gentle beauty was more like the creation of romance or the fair inspiration of a dream than the actual reality on earth. Tenderly her lover gazed upon her as the clusterous ringlets were edged (?) by amorous and sportive zephyrs and when he perceived (?) the rude intrusion of the sunlight he sprang to draw the curtain but softly she stayed him. "No, no, dear Charles," she softly said, "much rather you'd I have a little sun than no air at all."

It wasn't an easy task. Broza started his work by assuming the plaintext was in English, because he knew Poe spoke English, and presumed Tyler did as well. He also assumed that the cryptogram was broken down into words. But, eventually, he turned to his computer. Through this process, he discovered that the puzzling paragraph contained more than twenty mistakes. Perhaps these may have come from the person who set the type for the cryptogram when it appeared in the magazine. Perhaps its author made a few mistakes.

Despite all this work, no one knows if Poe actually wrote the cryptogram —or if there really was a very cryptographically gifted W.B. Tyler. What do you think?

Section 5 - How ciphers work

There are many different kinds of secret writing and speaking. However, the most common and easiest to break is the substitution cipher. This was the method Poe used a great deal in his writing. Solving a cryptogram like this relies on three things:

- Knowing the language the cryptographer used to make up the cipher
- Knowing that one letter is substituted for another
- Knowing that the letters in the cipher are separated into words

Sometimes a substitution cipher is built around a pattern. Sometimes the letters in the cipher are chosen randomly.

To solve a simple substitution cipher, there are several strategies that you can use:

- The most commonly -used letters today are (in this order):
E T N A O R I S H
Knowing this, you can count the number of times a particular letter is used in a cryptogram. For example, if there are more "X"s in the cryptogram than any other letter, "X" might stand for "E" or "T." You can then try out these letters in the cryptogram and see if they make sense.
- The five least-commonly used letters are (in this order):
J K Q X Z
Knowing this, you can count the number of times a particular letter is used in a cryptogram. For example, if there is only one "M" in the cryptogram, "M" might stand for one of these letters.
You can then try out these letters in the cryptogram and see if they make sense.
- There are only two one-word letters in English: A and I
Knowing this, you can look for any characters that have spaces on either side of them. If you find any, you will know that this character is either an "A" or an "I." You can then try out these letters in the cryptogram and see if they make sense.

- The most frequently used two-letter words in English are:

<i>Am</i>	<i>An</i>	<i>As</i>	<i>At</i>	
<i>Of</i>	<i>On</i>	<i>Or</i>	<i>Ox</i>	
<i>If</i>	<i>In</i>	<i>Is</i>	<i>It</i>	
<i>Up</i>	<i>Us</i>			
<i>Be</i>	<i>He</i>	<i>Me</i>	<i>We</i>	
<i>Do</i>	<i>Go</i>	<i>No</i>	<i>So</i>	<i>To</i>
<i>By</i>	<i>My</i>			

Knowing this, you can experiment with the cryptogram. You can substitute any word above for any two-letter combination in the cryptogram and see if it makes sense.

- The most commonly used three letter word in English is *the*.
Knowing this, you can substitute "the" for any three-letter combination in the puzzle to see if it makes sense. To further explore this, you can substitute the three letters throughout the puzzle to see if it makes sense.
- You can tell a lot from punctuation. An apostrophe indicates a contraction such as *I'm*, or *he's*.
Knowing this, you can expect that the letter after the apostrophe might be a symbol for "S," "D," or "M."
You can expect that the group of words right before a question mark are questions. Try these starting words in the question to see if they make sense: "Who," "What," "Why," "When," "Where," or "How." You can experiment with these combinations to see if they make sense.

Are you ready to try out these theories? Try to solve these cryptograms [links to Section 6].

Section 6 - Cryptograms—straight from the tales and poems of Edgar Allan Poe

These cryptograms use simple substitution ciphers. Each letter in the cryptogram stands for one letter in the alphabet. The spaces between the letter groups in the first two cryptograms divide each into words. The third cryptogram is a special challenge. All of the solutions to these cryptograms come from Poe's tales or poems.

Cryptogram 1:

"Tgjyglq!" G qfpgcicb, "bgqqckzjc lm kmpe! G ybkgr rfc bccb! —
rcyp sn rfc nlyliq! — fcpc,fcpc! — gr gq rfc zcyrgle md fgq fgbcmsq fcyr!"

Hint:

Try looking through Poe's "The Tell-Tale Heart."
[link to <http://www.eapoe.org/works/tales/theartb.htm>]

Solution:

"Villains!" I shrieked, "dissemble no more! I admit the deed! — tear up the planks! — here, here! — it is the beating of his hideous heart!"

Cryptogram 2:

V fnj gung gur perfprag jnf qrfvtarq gb pebff gur ertvba bs gur urneg. Vg jbyhq senl gur fretr bs zl ebor – vg jbyhq erghea naq ercrng vgf bcrengvba – ntnva – naq ntnva.

Hint:

"The Pit and the Pendulum" might lead you to a solution.
[link to <http://www.eapoe.org/works/tales/pitpdm.htm>]

Solution:

I saw that the crescent was designed to cross the region of the heart. It would fray the serge of my robe -- it would return and repeat its operations -- again -- and again.

Cryptogram 3:

Ymjqn	anlqn	uxbjw	jbwjf	ymjin	sytfx
ujhnj	xtkxr	nqj,f	si,ym	wtzlm	ymjjs
ajqtu	nsllq	ttr,t	shjfl	fnsym	jwjfq
fwjiz	utstrj	nsytt	ufquf	gqjwj	fqnjd
,ymjb	mnyjf	silqn	xyjsn	sl,fs	ilmfx
yqdyj	jymtk	Gjwjs	nhj.		

Hint:

Perhaps you might find Poe's ghostly tale "Berenice" to be of help.
[link to <http://www.eapoe.org/works/tales/bernic.htm>]

Hint:
The punctuation is all correct.

Hint:
Try breaking the letters into sets of 5, not including the spaces in the words, like this:
Theli vidli pswer ewrea thedi ntoas pecie sofsm ile,a nd,th rough theen velop inggl oom,o nceag ainth eregl aredu
ponme intoo palpa blere ality ,thew hitea ndgli steni ng,an dghas tlyte ethof Beren ice.

Solution:
The livid lips were wreathed into a species of smile, and, through the enveloping gloom, once again there glared upon me in too palpable reality, the white and glistening, [page 179:] and ghastly teeth of Berenice.

An Excerpt from Edgar Allan Poe's "The Gold Bug"

Text courtesy of the Edgar Allan Poe Society of Baltimore

"But how did you proceed?"

"I held the vellum again to the fire, after increasing the heat; but nothing appeared. I now thought it possible that the coating of dirt might have something to do with the failure; so I carefully rinsed the parchment by pouring warm water over it, and, having done this, I placed it in a tin pan, with the skull downwards, and put the pan upon a furnace of lighted charcoal. In a few minutes, the pan having become thoroughly heated, I removed the slip, and, to my inexpressible joy, found it spotted, in several places, with what appeared to be figures arranged in lines. Again I placed it in the pan, and suffered it to remain another minute. Upon taking it off, the whole was just as you see it now."

Here Legrand, having re-heated the parchment, submitted it to my inspection. The following characters were rudely traced, in a red tint, between the death's-head and the goat:

53†††305))6*;4826)4†.)4†);806*;48†8†(60))85;1†(:;†*8†83(88)
5*†;46(;88*96*?;8)*†(;485);5*†2: *†(;4956*2(5*—4)8†8*;40692
85);)6†8)4††;1(†9;48081;8:8†1;48†85;4)485†528806*81(†9;48;
88;4(†?34;48)4†;161;;:188;†?;

"But," said I, returning him the slip, "I am as much in the dark as ever. Were all the jewels of Golconda awaiting me upon my solution of this enigma, I am quite sure that I should be unable to earn them."

"And yet," said Legrand, "the solution is by no means so difficult as you might be lead to imagine from the first hasty inspection of the characters. These characters, as any one might readily guess, form a cipher — that is to say, they convey a meaning; but then, from what is known of Kidd, I could not suppose him capable of constructing any of the more abstruse cryptographs. I made up my mind, at once, that this was of a simple species — such, however, as would appear, to the crude intellect of the sailor, absolutely insoluble without the key."

"And you really solved it?"

"Readily; I have solved others of an abstruseness ten thousand times greater. Circumstances, and a certain bias of mind, have led me to take interest in such riddles, and it may well be doubted whether human ingenuity can construct an enigma of the kind which human ingenuity may not, by proper application, resolve. In fact, having once established connected and legible characters, I scarcely gave a thought to the mere difficulty of developing their import.

"In the present case — indeed in all cases of secret writing — the first question regards the language of the cipher; for the principles of solution, so far, especially, as the more simple ciphers are concerned, depend upon, and are varied by, the genius of the particular idiom. In general, there is no alternative but experiment (directed by probabilities) of every tongue known to him who attempts the solution, until the true one be attained. But, with the cipher now before us, all difficulty was removed by the signature. The pun upon the word 'Kidd' is appreciable in no other language than the English. But for this consideration I should have begun my attempts with the Spanish and French, as the tongues in which a secret of this kind would most naturally have been written by a pirate of the Spanish main. As it was, I assumed the cryptograph to be English.

"You observe there are no divisions between the words. Had there been divisions, the task would have been comparatively easy. In such case I should have commenced with a collation and analysis of the shorter words, and, had a word of a single letter occurred, as is most likely, (a or I, for example,) I should have considered the solution as assured. But, there being no division, my first step was to ascertain the predominant letters, as well as the least frequent. Counting all, I constructed a table, thus:

Of the character 8 there are 33.

;	"	26.
4	"	19.
‡)	"	16.
*	"	13.
5	"	12.
6	"	11.
†1	"	8.
0	"	6.
9 2	"	5.
: 3	"	4.
?	"	3.
¶	"	2.
—	"	1.

"Now, in English, the letter which most frequently occurs is e. Afterwards, the succession runs thus: a o i d h n r s t u y c f g l m w b k p q x z. E predominates so remarkably that an individual sentence of any length is rarely seen, in which it is not the prevailing character.

"Here, then, we have, in the very beginning, the groundwork for something more than a mere guess. The general use which may be made of the table is obvious — but, in this particular cipher, we shall only very partially require its aid. As our predominant character is 8, we will commence by assuming it as the e of the natural alphabet. To verify the supposition, let us observe if the 8 be seen often in couples — for e is doubled with great frequency in English — in such words, for example, as 'meet,' 'fleet,' 'speed,' 'seen,' 'been,' 'agree,' &c. In the present instance we see it doubled no less than five times, although the cryptograph is brief.

"Let us assume 8, then, as e. Now, of all words in the language, 'the' is most usual; let us see, therefore, whether there are not repetitions of any three characters, in the same order of collocation, the last of them being 8. If we discover repetitions of such letters, so arranged, they will most probably represent the word 'the.' Upon inspection, we find no less than seven such arrangements, the characters being ;48. We may, therefore, assume that ; represents t, 4 represents h, and 8 represents e — the last being now well confirmed. Thus a great step has been taken.

"But, having established a single word, we are enabled to establish a vastly important point; that is to say, several commencements and terminations of other words. Let us refer, for example, to the last instance but one, in which the combination ;48 occurs — not far from the end of the cipher. We know that the ; immediately ensuing is the commencement of a word, and, of the six characters succeeding this 'the,' we are cognizant of no less than five. Let us set these characters down, thus, by the letters we know them to represent, leaving a space for the unknown —
t eeth.

"Here we are enabled, at once, to discard the 'th,' as forming no portion of the word commencing with the first t; since, by experiment of the entire alphabet for a letter adapted to the vacancy, we perceive that no word can be formed of which this th can be a part. We are thus narrowed into
t ee,

and, going through the alphabet, if necessary, as before, we arrive at the word 'tree,' as the sole possible reading. We thus gain another letter, r, represented by (, with the words 'the tree' in juxtaposition.

"Looking beyond these words, for a short distance, we again see the combination ;48, and employ it by way of termination to what immediately precedes. We have thus this arrangement:

the tree ;4(‡?34 the,

or, substituting the natural letters, where known, it reads thus:

the tree thr‡?3h the.

"Now, if, in place of the unknown characters, we leave blank spaces, or substitute dots, we read thus:

the tree thr...h the,

when the word 'through' makes itself evident at once. But this discovery gives us three new letters, o, u and g, represented by ‡ ? and 3.

"Looking now, narrowly, through the cipher for combinations of known characters, we find, not very far from the beginning, this arrangement,

83(88, or egree,

which, plainly, is the conclusion of the word 'degree,' and gives us another letter, d, represented by †.

"Four letters beyond the word 'degree,' we perceive the combination

;48(;88.

"Translating the known characters, and representing the unknown by dots, as before, we read thus:

th [.] rtee.

an arrangement immediately suggestive of the word 'thirteen,' and again furnishing us with two new characters, i and n, represented by 6 and *.

"Referring, now, to the beginning of the cryptograph, we find the combination,

53‡‡†.

"Translating, as before, we obtain

. good,

which assures us that the first letter is A, and that the first two words are 'A good.'

"It is now time that we arrange our key, as far as discovered, in a tabular form, to avoid confusion. It will stand thus:

5	represents	a
†	"	d
8	"	e
3	"	g
4	"	h
6	"	i
*	"	n
‡	"	o
("	r
;	"	t

"We have, therefore, no less than ten of the most important letters represented, and it will be unnecessary to proceed with the details of the solution. I have said enough to convince you that ciphers of this nature are readily soluble, and to give you some insight into the rationale of their development. But be assured that the specimen before us appertains to the very simplest species of cryptograph. It now only remains to give you the full translation of the characters upon the parchment, as unriddled. Here it is:

'A good glass in the bishop's hostel in the devil's seat forty-one degrees and thirteen minutes northeast and by north main branch seventh limb east side shoot from the left eye of the death's-head a bee line from the tree through the shot fifty feet out.' "

"But," said I, "the enigma seems still in as bad a condition as ever. How is it possible to extort a meaning from all this jargon about 'devil's seats,' 'death's heads,' and 'bishop's hotels?'" "

"I confess," replied Legrand, "that the matter still wears a serious aspect, when regarded with a casual glance. My first endeavor was to divide the sentence into the natural division intended by the cryptographer."

"You mean, to punctuate it?"

"Something of that kind."

"But how was it possible to effect this?"

"I reflected that it had been a point with the writer to run his words together without division, so as to increase the difficulty of solution. Now, a not over-acute man, in pursuing such an object, would be nearly certain to overdo the matter. When, in the course of his composition, he arrived at a break in his subject which would naturally require a pause, or a point, he would be exceedingly apt to run his characters, at this place, more than usually close together. If you will observe the MS., in the present instance, you will easily detect five such cases of unusual crowding. Acting upon this hint, I made the division thus: 'A good glass in the Bishop's hostel in the Devil's seat — forty-one degrees and thirteen minutes — northeast and by north — main branch seventh limb east side — shoot from the left eye of the death's-head — a bee-line from the tree through the shot fifty feet out.' "

"Even this division," said I, "leaves me still in the dark."

"It left me also in the dark," replied Legrand, "for a few days; during which I made diligent inquiry, in the neighborhood of Sullivan's Island, for any building which went by the name of the 'Bishop's Hotel;' for, of course, I dropped the obsolete word 'hostel.' Gaining no information on the subject, I was on the point of extending my sphere of search, and proceeding in a more systematic manner, when, one morning, it entered into my head, quite suddenly, that this 'Bishop's Hostel' might have some reference to an old family, of the name of Bessop, which, time out of mind, had held possession of an ancient manor-house, about four miles to the northward of the Island. I accordingly went over to the plantation, and re-instituted my inquiries among the older negroes of the place. At length one of the most aged of the women said that she had heard of such a place as Bessop's Castle, and thought that she could guide me to it, but that it was not a castle, nor a tavern, but a high rock.

"I offered to pay her well for her trouble, and, after some demur, she consented to accompany me to the spot. We found it without much difficulty, when, dismissing her, I proceeded to examine the place. The 'castle' consisted of an irregular assemblage of cliffs and rocks — one of the latter being quite remarkable [page 85:] for its height as well as for its insulated and artificial appearance. I clambered to its apex, and then felt much at a loss as to what should be next done.

"While I was busied in reflection, my eyes fell upon a narrow ledge in the eastern face of the rock, perhaps a yard below the summit upon which I stood. This ledge projected about eighteen inches, and was not more than a foot wide, while a niche in the cliff just above it, gave it a rude resemblance to one of the hollow-backed chairs used by our ancestors. I made no doubt that here was the 'devil's seat' alluded to in the MS., and now I seemed to grasp the full secret of the riddle.

"The 'good glass,' I knew, could have reference to nothing but a telescope; for the word 'glass' is rarely employed in any other sense by seamen. Now here, I at once saw, was a telescope to be used, and a definite point of view, admitting no variation, from which to use it. Nor did I hesitate to believe that the phrases, "[sic] forty-one degrees and thirteen minutes,' and 'northeast and by north,' were intended as directions for the levelling of the glass. Greatly excited by these discoveries, I hurried home, procured a telescope, and returned to the rock.

"I let myself down to the ledge, and found that it was impossible to retain a seat upon it except in one particular position. This fact confirmed my preconceived idea. I proceeded to use the glass. Of course, the 'forty-one degrees and thirteen minutes' could allude to nothing but elevation above the visible horizon, since the horizontal direction was clearly indicated by the words, 'northeast and by north.' This latter direction I at once established by means of a pocket-compass; then, pointing the glass as nearly at an angle of forty-one degrees of elevation as I could do it by guess, I moved it cautiously up or down, until my attention was arrested by a circular rift or opening in the foliage of a large tree that overtopped its fellows in the distance. In the centre of this rift I perceived a white spot, but could not, at first, distinguish what it was. Adjusting the focus of the telescope, I again looked, and now made it out to be a human skull.

"Upon this discovery I was so sanguine as to consider the enigma solved; for the phrase 'main branch, seventh limb, east side,' could refer only to the position of the skull upon the tree, while 'shoot from the left eye of the death's head' admitted, also, of but one interpretation, in regard to a search for buried treasure. I perceived that the design was to drop a bullet from the left eye of the skull, and that a bee-line, or, in other words, a straight line, drawn from the nearest point of the trunk through 'the shot,' (or the spot where the bullet fell,) and thence extended to a distance of fifty feet, would indicate a definite point — and beneath this point I thought it at least possible that a deposit of value lay concealed."

"All this," I said, "is exceedingly clear, and, although ingenious, still simple and explicit. When you left the Bishop's Hotel, what then?"

"Why, having carefully taken the bearings of the tree, I turned homewards. The instant that I left 'the devil's seat,' however, the circular rift vanished; nor could I get a glimpse of it afterwards, turn as I would. What seems to me the chief ingenuity in this whole business, is the fact (for repeated experiment has convinced me it is a fact) that the circular opening in question is visible from no other attainable point of view than that afforded by the narrow ledge upon the face of the rock.

"In this expedition to the 'Bishop's Hotel' I had been attended by Jupiter, who had, no doubt, observed, for some weeks past, the abstraction of my demeanor, and took especial care not to leave me alone. But, on the next day, getting up very early, I contrived to give him the slip, and went into the hills in search of the tree. After much toil I found it. When I came home at night my valet proposed to give me a flogging. With the rest of the adventure I believe you are as well acquainted as myself."

"I suppose," said I, "you missed the spot, in the first attempt at digging, through Jupiter's stupidity in letting the bug fall through the right instead of through the left eye of the skull."

"Precisely. This mistake made a difference of about two inches and a half in the 'shot' — that is to say, in the position of the peg nearest the tree; and had the treasure been beneath the 'shot,' the error would have been of little moment; but 'the shot,' together with the nearest point of the tree, were merely two points for the establishment of a line of direction; of course the error, however trivial in the beginning, increased as we proceeded [page 87:] with the line, and by the time we had gone fifty feet, threw us quite off the scent. But for my deep-seated impressions that treasure was here somewhere actually buried, we might have had all our labor in vain."

"But your grandiloquence, and your conduct in swinging the beetle — how excessively odd! I was sure you were mad. And why did

you insist upon letting fall the bug, instead of a bullet, from the skull?"

"Why, to be frank, I felt somewhat annoyed by your evident suspicions touching my sanity, and so resolved to punish you quietly, in my own way, by a little bit of sober mystification. For this reason I swung the beetle, and for this reason I let it fall it [[sic]] from the tree. An observation of yours about its great weight suggested the latter idea."

"Yes, I perceive; and now there is only one point which puzzles me. What are we to make of the skeletons found in the hole?"

"That is a question I am no more able to answer than yourself. There seems, however, only one plausible way of accounting for them — and yet it is dreadful to believe in such atrocity as my suggestion would imply. It is clear that Kidd — if Kidd indeed secreted this treasure, which I doubt not — it is clear that he must have had assistance in the labor. But this labor concluded, he may have thought it expedient to remove all participants in his secret. Perhaps a couple of blows with a mattock were sufficient, while his coadjutors were busy in the pit; perhaps it required a dozen — who shall tell?"