

The structural design of a general purpose program for concordance preparation is described.

Options in the input format, the operating mode, and the output edit provide wide flexibility in organizing data in a form convenient for many analytical purposes.

An experimental program was written, and some results obtained in testing the program are included.

A concordance generator

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The purpose of a concordance is to show the places in a document or a class of documents where each principal word may be found. Typically, the immediate context of a word is exhibited, as well as its location. How the concordance is to be organized, and for what use, will vary from user to user and from occasion to occasion. Until recently, concordances were manually prepared, perhaps the most familiar being those of the Bible.¹ Over the last decade, computers have been used to generate various types of concordances. Computer-generated concordances of the poetry of Matthew Arnold and, more recently, of W. B. Yeats have been described by Painter and Parrish.^{2,3} kwic (Key Word in Context) indices⁴ have become routine.

In each of these instances, the word context relationship is reported differently. In most manual concordances, for example, the word is presented with its natural thought environment, the boundaries of which are established by scholarly judgment. The Matthew Arnold and Yeats concordances cite the word in its poetry line. The kwic index lists the word in the middle of an output print line, with a specified number of characters before and after the word itself.

The present work was undertaken in conjunction with research on mechanical translation. Russian scientific text has been studied with a view toward automatic methods for syntactic sentence recognition; early in this effort, it became evident that a

concordance of a fairly large sample text would be of value. Here, the context of interest is the syntactic environment of a word, and this was felt to be at least an entire sentence. A concordance-generator program was written for the IBM 7090 to present principal words and the sentences in which they occur.

Because words and sentences vary in length, the concordance generator was designed to utilize list procedures. Use of these concepts afforded maximum exploitation of available core storage.

The list structure consists of a collection of elements with definite formats. An element may contain data, indicators, counts, or addresses which specify successor relationships. Each list has a name, and a sublist is one whose name appears on another list. A special list, called the *initial sublist pointer* (ISP), contains the names of the generated sublists. A name in the ISP refers to a sublist comprised of words having the same initial character.

Although the input to the program normally consists of a tape file in which each record consists of a sentence, the user has a good deal of freedom in characterizing the nature of a "sentence." Since Russian scientific text is usually put into machine-readable form on paper tape, a paper-tape-to-magnetic-tape program yields the tape records. This program recognizes the sequence of a period followed by two spaces as a legitimate sentence end; it was also found satisfactory for Russian to recognize the semicolon as a sentence terminator. This program also discards certain control characters which are punched on paper tape as part of the Russian text. For concordances of English poetry, on the other hand, a different card-to-tape program may produce tape records containing one poetry line each.

Additional flexibility is provided by input parameters to the concordance generator itself. The user may insert control cards to specify (1) word-delimiters, (2) the characters into which each input character is to be mapped for output printing, (3) the collating sequence in which the output words are to be sorted, and (4) a *common-word list* of words to be ignored or, conversely, of those words which are to be recognized in preparing the concordance. Controls (1), (2), and (3) allow the concordance generator to accept input data in any code, to process records from either paper tape or cards, and to employ word-delimiters at the user's discretion. Capitalization, for instance, is usually indicated in the input data by a special symbol; as specified by the control cards, this symbol may or may not be considered a word delimiter. As a result, "House" and "house" can be treated separately or together, as the user wishes.

Initially, the program reads items from the common-word list and places them into memory. Because each register of the IBM 7090 holds six characters, words of six characters or less are placed in one sublist, words of seven to twelve characters in another sublist, and so on. Within each sublist, the words are arranged in a desired order. When the common-word list has been established, a pointer to the first register of the remainder of memory is stored.

Thenceforth, the mechanics of the program take the following form.

A sentence is read into available memory as a record and assigned a sequential number. The pointer to this sentence is retained. A memory location preceding the sentence in storage contains the location of the register following the sentence, as well as the sentence number. A scan of the record isolates text words, retaining the initial character of each word. A word is placed in available storage as an item with three extra memory registers for linkages, counts, and word length in register units.

The common-word list is now interrogated. Depending on a switch setting, this list may be interpreted in either of two ways: (1) keep words on the list, or (2) reject words on the list. Assuming the latter, when the current item is in this list, the item is ignored and its registers are returned to available storage. If the current item does not appear on the list, its initial character allows the program to extract an appropriate element from the ISP list. If this element is zero, the item becomes the first entry in its sublist, and a pointer to the item is placed into the ISP element. The item is marked in such a manner that a word repeated in the sentence is stored but once. By means of a pointer, the item mentions the sentence from which its word is obtained. If, in further processing, additional sentences embed this word, a chain is extended to maintain the pertinent references to sentences.

If the ISP element is not zero, items previously placed on the sublist are inspected to determine whether the current word matches one of them. If a match is obtained, the word is not stored again, but the current sentence is cited for reference. If the item represents a new entry in the sublist, it is inserted in logical order, and the successor relationships are adjusted.

If the sentence is composed solely of common words, memory cells are returned to the list of available storage, and the sentence is ignored. A sentence that contains at least one non-common word must be retained.

This process continues until either memory or input data is exhausted. In either case, all data are dumped onto an output tape. The information on tape is in sorted form. Specifically, each text word is followed by the sentences in which it was found embedded. Clearly, if the memory is exhausted earlier than the input data, additional output files are generated, and a final merge operation is necessitated. The merge program has the ability to make an n -tape merge, where each tape reel may have m sorted files, with $1 \leq n \leq 5$, and $m \geq 1$.

Presently, an edit program prepares the output for printing on the IBM 1403 chain printer. A planned use of the 120-character print chain, with both upper- and lower-case characters, permits more variety in the output.

By option, the program user may forego a full concordance, in which the words are printed in their sentence environment, and obtain merely an index of the text. In this option, the output con-

sists of (1) an alphabetical list of words and (2) program-generated numbers of the sentences in which each of these words appears. In addition, the entire input text may be printed, with its sentences numbered by the program. For a large text—of the order of a half million input words—the index concordance is more convenient than a full concordance, which would occupy an unmanageable volume of paper. Full concordances can then be produced, in a separate machine run, of the words deemed most useful in an analysis of the index concordance.

A deck of cards, one card per word, can be obtained from either an index concordance or a full concordance. Each card contains the frequency of the word, the word left-justified (i.e., beginning in a fixed column), the word right-justified (i.e., ending in a fixed column), and a serial number. From this deck, a frequency list can be made by sorting. The deck may also be sorted by word endings, yielding a kind of rhyming dictionary. This is particularly interesting in a highly inflected language like Russian, where the word-endings reveal much about word syntax. The procedure tends to group together, say, all the Russian masculine genitive singular reflexive present active participles.

Assuming that the available memory begins at location X, Figure 1 gives an example of a common-word list containing five words. Here, the numbers 1 and 2 in the decrement portions of registers X and Y, respectively, indicate the required number of 7090 machine registers for the individual common words. The minus sign indicates that the group of words following location Y is the last group of common words.

An ISP table takes the form shown in Figure 2. If Y_A is not zero, it points to the first item in the sublist class containing those items beginning with A. If Y_A is zero, no items beginning with A have been entered.

The list structure for records and items is outlined in Figure 3. Records always have the format shown in this figure. The first register specifies the address H of a following item and the sentence number. The record requires one register plus a sufficient number to hold the sentence.

The standard item contains one text word plus three registers of additional information. The fields denoted in the example item are employed as follows:

- n — Number of registers assigned to the word.
- f — Number of occurrences of the word (in one memory load).
- G — Record address of a sentence containing the word.
- M — Address of successor item in an ordered sublist of items; M is zero if the sublist contains a single item.
- N — Address of another abbreviated item, in case the given word occurs in more than one sentence. N is zero in the item if the word occurs but once; if the word occurs more than once, it is zero in the last abbreviated item of the word chain.
- J — Address of last abbreviated item in the word chain.

Figure 1

X	1	X+4
	Abbbb	
	ANbbb	
	FROMbb	
	—2	
Y	Y+5	
	ENORMO	
	USbbb	
	NEGATI	
	VEbbb	

detailed
formats

Figure 2

Y_A		A
.....		
Y_z		Z

Figure 3

G	H	Sentence number i	}	RECORD FORMAT
	Sentence S_i			
H	M	J	}	ITEM FORMAT
H+1	n	f		
Word				
	G	N	}	ABBREVIATED ITEM FORMAT

Figure 4

A	1	B
	A	
	AN	
	FROM	
	INDEX	
	IS	
	ONE	
	THE	
	TO	
	USER	
	VARY	
	WAY	
	WILL	
	-2	C
	CONCOR	
	DANTbb	
C		

an
example

If a word occurs in more than one sentence, the initial occurrence is represented by a full item, and each subsequent occurrence by an abbreviated item in a chain. Words occurring more than once in a single sentence affect the frequency count only.

As a net result, all words in a sublist are held in an ordered chain whose head is in the isp table, replicated words are represented by a chain, and each word is linked to all sentences in which it occurs.

Suppose an input tape to the concordance generator consists of three sentences S_1 , S_2 , and S_3 :

S_1 — A CONCORDANCE IS AN ORGANIZED TEXT.

S_2 — THE WAY THE TEXT IS ORGANIZED WILL VARY FROM USER TO USER.

S_3 — ONE WAY IS AN INDEX.

Further suppose that the list of common words not to be included in the concordance is composed as shown in Figure 4, where available memory begins at location A. The remainder of available memory would then begin at location C.

Figure 5

C	C+7	1
	AbCONC	
	ORDANC	
	EbISbA	
	NbORGA	
	NIZEDb	
	TEXT.b	
D=C+7		

ISP	0	0	A
	0	0	Z

Figure 6

D	0	0
	1	
	Abbbbb	

Figure 7

D	0	0
	2	1
	CONCOR	
	DANCEb	

Step 1. Read a sentence into memory, starting at C + 1. All isp elements are zeroed (Figure 5).

Step 2. The first word would be the word A, which is placed at D + 2; its register count is then determined and retained (Figure 6).

Step 3. By inspection, the word at D + 2 is in the common-word list. Therefore, it is ignored and its cells are returned to available storage. The next word is CONCORDANCE, which is to be placed at D + 2, as in Step 2 above (Figure 7).

Step 4. Since the word is not in the common-word list, it is to be retained. The word is in sublist class C, and the corresponding isp element is zero. It is the first entry within this class. Hence, place a pointer to location D in the proper element of the isp. Place a pointer to sentence s_1 in the decrement of register D + 4 (Figure 8).

Step 5. The next two words, IS and AN, are ignored, since they are on the common-word list.

Step 6. The next word, ORGANIZED, is placed in register E + 2, and Step 2 is repeated. Because this entry is not in the common-word list, it is retained. The word is in class O, and the isp element is zero. To make it the first entry in the sublist, place a pointer to location E in the proper element of the isp. Place a sentence pointer (to C) in the decrement of the register at E + 4 (Figure 9).

Step 7. Now, the word TEXT is to be placed at F + 2, as in Step 2. However, suppose that the next word were not TEXT

Figure 8

D	0	D+4
	2	1
	CONCOR	
	DANCEb	
D+4	C	
E=D+5		

ISP	0	0	A
.....			
	D	0	C

Figure 11

G	H	2
	Sentence S ₂	
H		

ISP	0	0	A
.....			
	D	0	C
.....			
	E	0	O
.....			
	F	0	T

Figure 9

D	0	D+4
	2	1
	CONCOR	
	DANCEb	
	C	
E	0	E+4
	2	1
	ORGANI	
	ZEDbbb	
E+4	C	0
F=E+5		

ISP	0	0	A
.....			
	D	0	C
.....			
	E	0	O

Figure 12

H	0	0
	1	0
	TEXTbb	

Figure 10

C	D	1
	Sentence S ₁	
D	0	D+4
	2	1
	CONCOR	
	DANCEb	
D+4	C	0
E	0	E+4
	2	1
	ORGANI	
	ZEDbbb	
	C	0
F	0	F+3
	1	1
	TEXTbb	
F+3	C	0
G=F+4	0	0

ISP	0	0	A
.....			
	D	0	C
.....			
	E	0	O
.....			
	F	0	T

but another occurrence of CONCORDANCE, which has already appeared in this sentence. The word is not in the common-word list and thus is to be retained. Furthermore, it is in sublist class C, which is non-zero. Starting at D, a scan of the sublist class would disclose a match. An indicator (not shown) tells that the repetition has occurred within a sentence. Therefore, the cells of the item would be returned to available storage, and the frequency of occurrence count in the item at D would be increased by 1.

Step 8. Now let us return to the word TEXT. Since it is not a common word, it must be retained. The item enters the sublist class T by the procedures discussed earlier (Figure 10).

Step 9. We have reached the end of sentence S₁. Since the sentence is not trivial, it is retained. Because the end of the input data has not been reached, the next sentence is read into G + 1 (Figure 11).

Step 10. The first non-common word of sentence S₂ is the word TEXT which is placed at H + 2, as in Step 2 (Figure 12).

Figure 13

C	D	1
	Sentence S ₁	
D	0	D+4
	2	1
	CONCOR	
	DANCEb	
	C	0
E	0	1
	2	2
	ORGANI	
	ZEDbbb	
	C	1
F	0	H
	1	2
	TEXTbb	
	C	H
G	H	2
	Sentence S ₂	
H	G	0
I	G	0

Figure 14

J	K	3
	Sentence S ₃	
K		

Table 1

Count	Word	Other
1	CONCORDANCE S ₁	
2	ORGANIZED	S ₁ , S ₂
2	TEXT	S ₁ , S ₂

Step 11. The isp table entry is non-zero. Starting at F, a scan of the sublist is made, and a match is found in the item at F. Therefore, the item at H is abbreviated, a pointer to S₂ is placed in the decrement field, and the unused registers are returned to storage. The appropriate fields in the items at F + 3 and at F are set to point to H. All remaining words are common words, except ORGANIZED which is treated like the word TEXT and entered at location I (Figure 13).

Step 12. The end of sentence S₂ has been reached and is retained because the sentence is non-trivial. The last sentence is read and placed at J + 1 (Figure 14).

Step 13. Because S₃ contains only common words, it is ignored, and the cells are returned to available storage.

The end of the input data now triggers the output procedure. The isp list is scanned for the first non-zero element, which contains a pointer to the first item of a chained sublist. The pointer to the next item in the class is saved, and the item is edited onto tape. The sentence mentioned by this item and those sentences mentioned by successive abbreviated items follow to tape. This process is continued until all non-zero elements of the isp list are encountered.

The concordance for the sample text is shown in Table 1. Here, the symbols S₁ and S₂ may be interpreted in one of two ways. If the user chooses the full concordance as program option, the symbol S₁ in the output represents the entire input sentence. If the user chooses to produce an index concordance, the symbols S₁ and S₂ represent, in the actual output, merely the numbers 1 and 2 assigned by the program to the sentences.

A sample from a concordance of Milton's *Paradise Lost* is shown in Figure 15. Sentences were elected, for this particular run of the experimental program, to end on periods, exclamation points, and question marks. A capital letter is indicated by the dollar sign (\$), a colon by the equal sign (=), a semicolon by the zero (0), a question mark by the solidus (/), and an exclamation point by a record mark (≠). Within each sentence, asterisks are employed to guide the reader's eye to the subject word.

CITED REFERENCES

1. *Cruden's Complete Concordance*, for example, edited by A. D. Adams et al., first published in 1737 with many subsequent editions.
2. S. M. Parrish, editor, *A Concordance to the Poems of Matthew Arnold*, Cornell University Press, 1959. The techniques are described by J. A. Painter in "Computer Preparation of a Poetry Concordance," *Communications of the ACM* 3, 91 (February 1960).
3. S. M. Parrish, editor, *A Concordance to the Poems of W. B. Yeats*, Cornell University Press, 1963.
4. H. P. Luhn, "Keyword in Context Index for Technical Literature (KWIC Index)," *American Documentation* 11, 288 (1960). Since early 1960, the American Chemical Society has been publishing a machine-produced KWIC index of journal titles as part of their *Index of Titles*.

Figure 15

1 ALL-RULING

31 \$THUS \$SATAN TALKING TO HIS NEAREST MATE \$WITH HEAD UP-LIFT ABOVE THE WAVE, AND EYES \$THAT SPARKLING BLAZ'DO HIS OTHER PARTS RESIDES \$PRONE ON THE FLOOD, EXTENDED LONG AND LARGE, \$LAY-FLOATING MANY A RODOO IN BULK AS HUGE \$AS WHOM THE FABLES NAME OF MONSTROUS SIZE, \$TITANIAN, OR \$EARTH-BORN, THAT WARR'D ON \$JOVED \$BRIAREOS OR \$TYPHON, WHOM THE DEN \$BY ANCIENT \$TARSUS HELD DO OR THAT SEA-BEAST \$LEVIATHAN, WHICH \$GOD OF ALL HIS WORKS \$CREATED HUGEST THAT \$WIM THE OCEAN STREAM= \$HIM, HAPPY, SLUMBERING ON THE \$NOWAY FOAM \$THE PILOT OF SOME SMALL NIGHT-FOUNDER'D SKIFF \$DREAMING SOME ISLAND, CFT, AS \$SEA-MEN TELL, \$WITH FIXED ANCHOR IN HIS \$CALY RIND \$MOORS BY HIS SIDE UNDER THE LEE, WHILE NIGHT \$INVESTS THE SEA, AND WISHED MORN DELAYS= \$SO STRETCH'D OUT HUGE IN LENGTH THE \$ARCH-FIEND LAY, \$CHAIN'D ON THE BURNING LAKE= NOR EVER THENCE \$HAD RISEN, OR HEAV'D HIS HEADO BUT THAT THE WILL \$AND HIGH PERMISSION OF **** ALL-RULING \$HEAVEN SLEPT HIM AT LARGE TO HIS OWN DARK DESIGNO \$THAT WITH REITERATED CRIMES HE MIGHT \$HEAT ON HIMSELF DAMNATION, WHILE HE SOUGHT \$EVIL TO OTHERSO AND, ENRAG'D, MIGHT SEE \$HOW ALL HIS MALICE SERV'D OUT TO BRING FORTH \$INFINITE GOODNESS, GRACE, AND MERCY, SHOWN SON \$MAN BY HIM SEDUC'DO BUT ON HIMSELF \$TREBLE CONFUSION, W'ATH, AND VENGEANCE, POUR'D.

1 ALLUR'D

59 \$THAMMUZ CAME NEXT BEHIND, \$WHOSE ANNUAL WOUND IN \$LEBANON **** ALLUR'D \$THE \$SYRIAN DAMSELS TO LAMENT HIS FATE \$IN AMCRDUS DITTIES ALL A SUMMER'S DAYO \$WHILE SMOOTH \$ADONIS FROM HIS NATIVE ROCK \$RAN PURPLE TO THE SEA, SUPPOS'D WITH BLOOD \$OF \$THAMMUZ YEARLY WOUNDED= THE LOVE-TALE \$INFECTED \$SION'S DAUGHTERS WITH LIKE HEATO \$WHOSE WONTON PASSIONS IN THE SACRED PORCH \$EZEKIEL SAW, WHEN, BY THE VISION LED, \$HIS EYE SURVEY'D THE DARK IDOLATRIES \$CF ALIENATED \$JUDAH.

4 ALMIGHTY

6 \$HIM THE **** \$ALMIGHTY \$POWER \$HURL'D HEADLONG FLAMING FROM THE ETHEREAL SKY, \$WITH HIDEOUS RUIN AND COMBUSTION, DOWN \$TO BOTTOMLESS PERDITIONO THERE TO DWELL \$IN ADAMANTINE CHAINS AND PENAL FIRE, \$WHO DURST DEFY THE \$GNIPOTENT TU ARMS.

21 \$BUT WHAT IF HE OUR \$CONQUEROUR (WHOM \$I NOW \$OF FORCE BELIEVE **** \$ALMIGHTY, SINCE NO LESS \$THAN SUCH COULD HAVE \$ER-POWER'D SUCH FORCE AS OURS) \$HAVE LEFT US THIS OUR SPIRIT AND STRENGTH ENTIRE \$STRONGLY TO SUFFER AND SUPPORT OUR PAINS, \$THAT WE MAY SO SUFFICE HIS VENGEFUL IRE, \$OR DO HIM MIGHTIER SERVICE AS HIS THRALLS \$BY RIGHT OF WAR, WHATE'ER HIS BUSINESS BE, \$HERE IN THE HEART OF \$HELL TO WORK IN FIRE, \$OR DO HIS ERRANDS IN THE GLOOMY DEEPO \$WHAT CAN IT THEN AVAIL, THOUGH YET WE FEEL \$STRENGTH UNDIMINISH'D, OR ETERNAL BEING, \$TO UNDERGO ETERNAL PUNISHMENT/

44 \$HERE AT LEAST \$WE SHALL BE FREED THE **** \$ALMIGHTY HATH NOT BUILT \$HERE FOR HIS ENVY, WILL NOT DRIVE US HENCE= \$HERE WE MAY REIGN SECURE, AND, IN MY CHOICE, \$TO REIGN IS WORTH AMBITION, THOUGH IN \$HELL= \$BETTER TO REIGN IN \$HELL, THAN SERVE IN \$HEAVEN=

79 \$O \$POWERS \$MATCHLESS, BUT WITH THE **** \$ALMIGHTYS=

1 ALOFT

33 \$THEN WITH EXPANDED WINGS HE STEERS HIS FLIGHT **** \$ALOFT, INCUMBENT ON THE DUSKY AIR \$THAT FELT UNUSUAL WEIGHTO TILL ON DRY LAND \$HE LIGHTS, IF IT WERE LAND THAT EVER BURN'D \$WITH SOLID, AS THE LAKE WITH LIQUID FIRE= \$AND SUCH APPEAR'D IN HUE, AS WHEN THE FORCE \$OF SUBTERRANEAN WIND TRANSPORTS A HILL \$TORN FROM \$PELORUS, OR THE SHATTER'D SIDE \$OF THUNDERING \$AETNA, WHOSE COMBUSTIBLE \$AND FUELL'D ENTAILS THENCE CONCEIVING FIRE, \$SUBLIN'D WITH MINERAL FURY, ATO THE WINDS, \$AND LEAVE A SINGED BOTTOM ALL INVOLV'D \$WITH STENCH AND SMOKE= SUCH RESTING FOUND THE SOLE \$OF UMBLEST FEET.

1 ALONG

15 \$YET NOT FOR THOSE, \$NOR WHAT THE POTENT VICTOR IN HIS RAGE \$CAN ELSE INFLICT, DO \$I REPENT OR CHANGE, \$THOUGH CHANG'D IN OUTWARD LUSTRE, THAT FIX'D MIND, \$AND HIGH DISDAIN FROM SENSE OF INJUR'D MERIT, \$THAT WITH THE \$MIGHTIEST RAIS'D ME TO CONTEND, \$AND TO THE FIERCE CONTENTION BROUGHT **** ALONG \$INNUMERABLE FORCE OF \$SPIRITS ARM'D, \$THAT DURST DISLIKE HIS REIGN, AND, ME PREFERRING, \$HIS UTMOST POWER WITH ADVERSE POWER OPPOS'D \$IN DUBIOUS BATTLE ON THE PLAINS OF \$HEAVEN, \$AND SHOOK HIS THRONE.

1 ALOUD

19 \$SO SPAKE THE APOSTATE \$ANGEL, THOUGH IN PAIN, \$VAUNTING **** ALOUD, BUT RACK'D WITH DEEP DESPAIR= \$AND HIM THUS ANSWER'D SOON HIS BOLD COMPEER.

4 ALSO

58 \$WITH THESE IN TROOP \$SCAME \$ASTORETH, WHOM THE \$PHOENICIANS CALL'D \$ASTARTE, QUEEN OF \$HEAVEN, WITH CRESCENT HORNSO \$TC WHOSE BRIGHT IMAGE NIGHTLY BY THE MOON \$SIDONIAN VIRGINS PAID THEIR VOWS AND SONGSO \$IN \$SION **** ALSO NOT UNSUNG, WHERE STOOD \$HER TEMPLE ON THE OFFENSIVE MOUNTAIN, BUILT \$BY THAT UXORIOUS KING, WHOSE HEART, THOUGH LARGE, \$BEGUIL'D BY FAIR IDOLATRESSES, FELL \$TO IDOLS FOUL.

62 \$HE **** ALSO AGAINST THE HOUSE OF \$GOD WAS BOLD= \$A LEPER ONCE HE LOST, AND GAIN'D A KINGO \$AHAZ, HIS SOTTISH CONQUEROUR, WHOM HE DREW \$GOD'S ALTAR TO DISPARAGE, AND DISPLACE, \$FOR ONE OF \$SYRIAN MODE, WHEREON TO BURN \$HIS ODIOS OFFERINGS, AND ADORE THE \$GODS \$WHOM HE HAD VANQUISH'D.

66 \$IN COURTS AND PALACES HE **** ALSO REIGNS, \$AND IN LUXURIOUS CITIES, WHERE THE NOISE \$OF RIOT ASCENDS ABOVE THEIR LOFTIEST TOWERS, \$AND INJURY, AND OUTRAGE= \$AND WHEN NIGHT \$DARKENS THE STREETS, THEN WANDER FORTH THE SONS \$OF \$BELIAL, FLOWN WITH INSOLENCE AND WINE.

91 \$MAMMON LED THEM CNO \$MAMMON, THE LEAST ERECTED \$SPIRIT THAT FELL \$FROM \$HEAVENO FOR \$E'EN IN \$HEAVEN HIS LOOKS AND THOUGHTS \$WERE ALWAYS DOWNWARD BENT, ADMIRING MORE \$THE RICHES OF \$HEAVEN'S PAVEMENT, TRODDEN GOLD, \$THAN AUGHT, DIVINE OR HOLY, ELSE ENJOY'D \$IN VISION BEATIFICK= BY HIM FIRST \$MEN **** ALSO, AND BY HIS SUGGESTION TAUGHT, \$PANSACK'D THE CENTER, AND WITH IMPIOUS HANDS \$RIFLED THE BOWELS OF THEIR MOTHER \$EARTH \$FOR TREASURES, BETTER \$ID.

3 ALTAR

57 \$FOR THOSE THE RACE OF \$ISRAEL OFT FORSOOK \$THEIR \$LIVING \$STRENGTH, AND UNFREQUENTED LEFT \$HIS RIGHTEOUS **** ALTAR, HOWING LOWLY DOWN \$TO BESTIAL \$GODSO FOR WHICH THEIR HEADS AS LOW \$BOW'D DOWN IN BATTLE, SUNK BEFORE THE SPEAR \$OF DESPICABLE FOES.

62 \$HE ALSO AGAINST THE HOUSE OF \$GOD WAS BOLD= \$A LEPER ONCE HE LOST, AND GAIN'D A KINGO \$AHAZ, HIS SOTTISH CONQUEROUR, WHOM HE DREW \$GOD'S **** ALTAR TO DISPARAGE, AND DISPLACE, \$FOR ONE OF \$SYRIAN MODE, WHEREON TO BURN \$HIS ODIOS OFFERINGS, AND ADORE THE \$GODS \$WHOM HE HAD VANQUISH'D.

65 \$BELIAL CAME LAST, THAN WHOM A \$SPIRIT MORE LEWD \$FELL NOT FROM \$HEAVEN, OR MORE GROSS TO LOVE \$VICE FOR ITSELF= TO HIM NO TEMPLE STOOD \$OR **** ALTAR \$MOK'DO YET WHO MORE OFT THAN HE \$IN TEMPLES AND AT **** ALTARS, WHEN THE PRIEST \$TURNS ATHEIST, AS DID \$ELI'S SONS, WHO FILL'D \$WITH LUST AND VIOLENCE THE HOUSE OF \$GOD/