

# PANGRAMS

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The word **pangram**, though well-known to the logologist for many years, appears in few dictionaries. Such standard works as the Merriam-Webster Unabridged (both Second and Third Editions) and the Oxford English Dictionary omit it, and it is not mentioned in the Encyclopedia Britannica's long section on wordplay. The only dictionaries in which it appears are 6000 Words (1976) and the third volume of the Supplement to the Oxford English Dictionary (1982). In both, the word is defined as a sentence containing all 26 letters of the alphabet. It is understood, although not explicitly specified, that some of these letters may appear more than once.

From the standpoint of the logologist, the shorter the pangram the more meritorious the sentence; the ultimate pangram contains exactly 26 letters.

The prophet Ezra, who lived about 500 B.C., can be regarded as the first pangrammatist. In the book of Ezra, verse 21 of chapter 7 reads

And I, even I Artaxerxes the king, do make a decree to all the treasurers which are beyond the river, that whatsoever Ezra the priest, the scribe of the law of the God of heaven, shall require of you, it be done speedily.

This contains all the letters of the alphabet but J. This, of course, is an accidental near-pangram; Ezra certainly didn't have wordplay in mind when he wrote it, and in any event he would not have known that the King James translation of his words some two millennia later would require 25 different letters.

The earliest deliberate pangram appears in 1872, when Augustus de Morgan in the Budget of Paradoxes proposed the task of writing a meaningful sentence using all 26 letters of the alphabet, calling it Cabbala Alphabetica. He came up with

I, quartz pyx, who fling muck beds

which uses the letters I and U twice, on the grounds that I and J, and U and V, were once interchangeable letters. His explanation of the sentence is worth quoting:

I long thought that no human being could say this under any circumstances. At last I happened to be reading a religious writer - as he thought himself - who threw aspersions on his opponents thick and threefold. Heyday! came into my head, this fellow flings muck beds; he must be a quartz pyx. And then I remembered that a pyx is a sacred vessel, and quartz is a hard

stone, as hard as the heart of a religious foe-curser. So that the line is the motto of the ferocious sectarian, who turns his religious vessels into mud-holders, for the benefit of those who will not see what he sees.

In 1875, C.C. Bombaugh wrote Oddities and Curiosities of Words and Literature, parts of which were reprinted by Dover Publications in 1961. He refers to Ausonius, a Roman poet of the fourth century, who apparently wrote verses containing all the letters of the alphabet, but cites no examples. However, he did cite a sentence of 48 letters:

John P. Brady, give me a black walnut box of quite a small size

During the 1920s, E. Haldeman-Julius published a series of booklets called Little Blue Books for a nickel apiece. These covered a variety of different subjects. In No. 1350, Curiosities of the English language by Lloyd E. Smith, the first pangram of exactly 26 letters, by Rev. S. Ream, is cited:

Pyx crwth fjeld, quok, vang, zimbs

which can be translated as the enigmatic order "Test Welsh stringed instrument, tableland, qua-bird, guy rope and Abyssinian flies." In No. 1750, Curiosities of Language, Anson D. Elby lists 37 pangrams. Most of these are contrived, using oddly-spelled proper names and initials to achieve their effect. There are three good ones, including the 32-letter

Quick zephyrs waft flax, jog, and move by

In Language on Vacation (Scribner's, 1965), Dmitri Borgmann gives two 26-letter pangrams:

Cwm, fjord-bank glyphs vext quiz  
Zing! Vext cwm fly jabs Kurd qoph

These mean, respectively, "Carved figures on the bank of a fjord and in a circular blind valley irritated an eccentric person" and "Zing! an irritated valley fly jabs at a Hebrew letter written by a Turkish tribesman." According to David Kahn in a letter to the New York Times on August 16, 1972, Claude Shannon, the founder of information theory, was responsible for the 26-letter pangram

Squdgy fez, blank jimp crwth vox

This says that a man orders his squashed-down Turkish hat to mute the skimpy voice of a Welsh stringed instrument. (In John G. Fuller's Games for Insomniacs (Doubleday, 1966) this is attributed to David Adler; this book contains more than 250 pangrams.)

In the November 1985 Word Ways, Robert N. Test wrote a short story featuring the pangram "Pyx vang quiz: komb crwth fjelds" and the 1984 Guinness Book of World Records cites

Cwm kvutza qoph jynx fled brigs

Computer-generated by Greg and Peter Maggs, this means "The escape from shipboard confinement of a wryneck bird from the valley kibbutz."

It must be admitted that most pangrams of 26 letters make for hard-to-understand sentences. To get around this shortcoming, some authors have allowed initials, abbreviations, and the like. Perhaps the best of these examples are

J.Q. Schwartz flung D.V. Pike my box  
Mr. Jock, TV quiz Ph.D., bags few lynx

The latter, devised by Clement Wood, appeared in *Word Ways* in November 1979. And one cannot overlook Sir Jeremy Morse's pangram of 27 letters which makes very good sense indeed:

Bawds jog, flick quartz, vex nymph

Multiple pangrams have also been constructed. The 71-letter double pangram by E.A. Heath appears in Games for Insomniacs:

A plump wench flagged a Zanzibar kayak to query a vivid  
chief squaw about juju maxixes

Heath is also the author of a triple pangram limerick:

When an expert burlesque queen named Maizy  
Stripping velvet, became very lazy  
She would quickly exhibit  
Just one jeweled explicit  
Gliding off from the jokesters like crazy!

The October 1984 Computer Recreations column of *Scientific American* magazine contains a quatrain in which each line contains the consonants once apiece and the vowels twice apiece:

Why jog exquisite bulk, fond crazy vamp,  
Daft buxom jonquil, zephyr's gawky vice?  
Guy fed by work, quiz Jove's xanthic lamp -  
Zow! Qualms by deja vu gyp fox-kin thrice.

Attributed to the mythical poet Edwin Fitzpatrick, it is presumably by Fitzpatrick's creator, Howard Bergerson.

If 26-letter pangrams are so difficult to construct, perhaps it is better merely to make lists of words which collectively exhaust the alphabet. The most comprehensive study along these lines was carried out by Dennis Ritchie, a member of technical staff at Bell Telephone Laboratories, who programmed a computer in the late 1970s to search for all such lists using a computer tape of most Merriam-Webster Second Edition words. He actually found 3330 such lists, most containing very obscure words: **cwm** occurred in 92 per cent of them, **qoph** in 65 per cent, and **jynx** in 52 per cent. (In fact, 44 per cent contained all three of these words!) Besides the vowelless **cwm**, many pangram lists contained the vowelless words **crwth** or **nth**; in fact, only 84 lists consisted entirely of words with vowels. No list contains words entirely in the Merriam-Webster Pocket Dictionary; the closest one is

fjord quiz vex balks nth gyp cwm

lacking only the final word. Full details can be found in the November 1983 *Word Ways*.

The smallest number of words containing all 26 letters once each is five: Dmitri Borgmann's

phlegms fyrd wuz qvint jackbox

all found in the Merriam-Webster Second Edition. Lists of three or four words which use all the letters of the alphabet can be devised, but of course these use some letters more than once. The ones using Merriam-Webster words with the fewest letters are

36: benzoxycamphors, quick-flowing, juventude

31: jackbox, viewfinder, phlegmy, quartz

the first by Darryl Francis and the second by Mary Hazard.

The problem of finding a list of common words using the letters of the alphabet exactly once can be ameliorated by a simple dodge: construct a pangrammatic crossword. One restricted to the Merriam-Webster Pocket Dictionary is given on the left below; it originally appeared in the February 1970 *Word Ways*. The one in the center, slightly more compact (6-by-7 instead of 7-by-7), in the October 1972 *Games & Puzzles*, contains the non-Pocket word *zax*.

Q	V	Q	V	S
J U G	W A X	J U G	O	J
I	B S	I	Z L	W A Q F
C R Y P T		C R A F T		M
K	L	K X S	L	B V
F E Z	O H M	W E B	U N C O P Y R I G H T E D	
N	D	N Y M P H	X K	Z

Is it possible to find a four-word minimal pangram as part of a crossword? It seems unlikely, as it would require four words with a total of 29 letters, with each word an isogram (all letters different); as noted, the best four-word pangram has 31 letters and one of the words is not an isogram. Leslie Card has constructed a five-word crossword, given at the right above.

It is esthetically more satisfying if the words in the pangram list are all the same length. Mary Hazard provided a particularly elegant double pangram in the November 1971 *Word Ways*: thirteen 4-letter words which use each letter of the alphabet twice, with none omitted or left over.

cwms dick grow gyps hadj jazz klux lynx miff qoph qutb vent  
verb

A single pangram using 4-letter words must either omit two letters or use two letters a second time:

cwms flak gout jynx phiz verb quad

A set of 5-letter words omitting one letter (Z) was given by Howard Bergerson in the February 1968 *Word Ways*:

fudgy jambs phlox qvint wreck

A set of 5-letter words using four extra letters was provided by

Leslie Card in the February 1972 issue:

chimb flave japyx quizd talks wrong

Once the editor challenged me to find five 5-letter words which exhaust the alphabet except for the letter L, leading to a rubric for the famous "Noel" Christmas card rebus. Lo, these many years I have tried - and failed.

The pangrams discussed thus far, with the exception of Ezra's, have been deliberately constructed. What about natural pangrams that appear in literature - pangrammatic windows? Can one find reasonably short sequences of letters in English-language text that contain all letters at least once? The earliest discovery of this nature still holds the record of 67 letters. A. Cyril Pearson's Pictured Puzzles and Word Play (George Routledge & Son, London circa 1910) cites the following passage from page 217 of The Beth Book, a popular novel of 1897 by Sarah Grand:

Then Ruth sat with her work on her lap for a little, looking up at the summer sky. It was an e/xquisitely deep blue just then, with filmy white clouds drawn up over it like gauz/e to veil its brightness

Tom Pulliam cited one of 75 letters in the February 1984 Word Ways, and Eric Albert found one of 76 letters in Paradise Lost, reported in November 1981. With the advent of machine-readable text, it should be an easy task to program a computer to search for shorter examples. In the August 1972 Word Ways, Ralph Beaman explored the mathematics of the pangrammatic window, concluding that short ones were very rare. For example, if one looks at a randomly-generated stream of letters with frequencies as in English-language text, the chance of a 200-letter pangrammatic window occurring is 0.002, and of a 100-letter window, 0.00005.

In the November 1986 Word Ways, Murray Pearce comments in Kickshaws on the discovery of two items out of ten on a Swensen's restaurant menu that were pangrammatic, one 324 letters long and the other 225. He cites calculations by the editor of Word Ways showing that this could have happened by chance with a probability of only 0.01. In other words, it looks very much as if a playful copywriter was at work!

A pangram can, of course, be a palindrome as well. The following 85-letter example by Jeff Grant in the May 1978 Word Ways offers a reasonable compromise between brevity and clarity, telling of a monk chiding someone for his timidity and distrust, and of that person's reaction to such cajoling:

Bewareth gifts; a pyre - vex a tide;  
Lo! Jack no mazes.. "You quoy!" sez a monk.  
Cajoled, I tax every past fighter - a web!

In the same article he constructs a 51-letter palindromic pangram, the shortest possible:

'Cwm, fjard-knob glyphs vext quiz'. l -- U QT, 'x' Ev!  
Sh, Pyl! (G'bonk!) Dra' J-F m' W.C.

What does it mean? Dr. Angus McCullum, a Glasgow physician specializing in gastric disorders, is settled in his favorite armchair reading the newspaper. Lying asleep on a nearby couch is his humorously-named, but highly intelligent Scotch terrier, Pylorus, called Pyl for short. Dr. McCullum notices an unusual headline in the paper, describing the distress of an eccentric runologist on being unable to interpret the sculptured symbols found both in a rounded valley in Wales and on a small knob rising out of the sea in a Norwegian fjord. He reads it out aloud, and starts to say something like "I don't wonder" but is interrupted by the arrival of his heart's desire, the attractive Lady Jean-Frances Stewart, known affectionately to him as J-F. Unfortunately for our good doctor, Lady Stewart is married. However, not to be put off, he extols her beauty and asks her to renounce her husband, Evan. All the noise has awakened Pylorus, who lets out a playful yelp. Dr. McCullum tells him to be quiet, but the dog grows more excited and knocks a human skull off a small table by the couch - it lands on the floor with a hollow thud. To quiet the dog down, and impress Lady Stewart with the intelligence of the animal, he asks it to draw her a picture of his water-closet. As Jeff Grant asserts, this is "truly a journey into the esoteric outer realms of linguistic creativeness".

A pangram can also document itself. The following sentence was devised by Lee Sallows with the aid of a special-purpose computer he designed and built, and appears in the October 1984 issue of *Scientific American*:

This first pangram has five a's, one b, one c, two d's, twenty-nine e's, six f's, four g's, eight h's, twelve i's, one j, one k, three l's, two m's, nineteen n's, twelve o's, two p's, one q, eight r's, twenty-six s's, twenty t's, three u's, five v's, nine w's, three x's, four y's and one z

In the September 1980 issue of the *IEEE Transactions on Information Theory*, Edward Moore constructed a phonetic pangram based on the 42 distinct sounds in English:

Hum, thou whirring fusion; yes, joy, pay each show; vie;  
thaw two wool dock bags

In the *Kickshaws* column of the August 1980 *Word Ways*, Howard Bergerson constructed a panalphabetic sentence in which the letters A through Z appear in order:

Well, about porn, I can say definitely that although I loathe junk like that myself, I don't propose to question other people's right to it, because, in my view, if sexy magazines and X-rated movies are what they want instead of the real thing, more power to them!

If neither single letters nor abbreviations are allowed, one can construct a list of Merriam-Webster Pocket Dictionary words with the letters in order using only 42 letters in all. If one wishes instead to minimize the total number of words used, the number is eight:

nAB CoDE FiG HIJaCK LiMN OPaQue ReST maUve WaXY feZ  
 AmBusCaDE FiG HIJaCK LuMiNOus ParQuetRy deSTRUctiVe WaXY feZ

These examples have been supplied by the editor of *Word Ways*. It would be of interest to see the analogous lists for words in the Merriam-Webster Unabridged, again forbidding abbreviations or single-letter words. And who will be the first to find a short panalphabetic window in English text?

### A DICTIONARY OF LANGUAGE GAMES, PUZZLES AND AMUSEMENTS

*This is the title of a 278-page book by Harry Eiss (an assistant professor of Arts & Languages at Northern Montana State) published by Greenwood Press in 1986 for \$39.95. It consists of an alphabetical listing of various word games and puzzles, each with a paragraph to a page of description and history (if known), and cross-references to games and puzzles that are to some degree related. Most of the entries have been taken from a dozen or so books about word games, plus the guide issued by the National Puzzlers' League for its puzzles.*

*The author views the book as "an initial attempt at scholarship in a field where it is much overdue" - a sentiment with which one can wholeheartedly agree. But he should have gone further, showing exactly how the various games and puzzles relate to each other in terms of more basic linguistic units. Words can be regarded as collections of letters, collections of phonemes, or carriers of meaning, and each of these needs to be analyzed into its components; once this is done, any puzzle or game can be characterized as a mixture of these, much as a chemical compound is composed of the elements from the periodic table. Only then can one say that logology has become a legitimate academic discipline instead of a heterogeneous collection of curiosities.*

*The author's classification of games and puzzles is idiosyncratic. He subsumes Cryptic Crosswords, one of the most important present-day word puzzles, under Extras in the National Puzzlers' League, when in reality it has an existence and importance far beyond the NPL. His knowledge of ciphers is similarly faulty, as he introduces something called a Peg Pin Code, apparently a misreading of the trivial Pigpen Cipher of two centuries ago. And why did he not note the inventor of the Crossword (Arthur Wynne) or the close relation between the components of Cryptic Crosswords and many NPL puzzles? No doubt this is a consequence of lack of familiarity with the field of games and puzzles.*