

WORDS IN WINDOWS

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In *Language on Vacation*, Dmitri Borgmann highlighted the 13-letter GIBBLEGABBLED and HIGGLEHAGGLED as the longest words with all their letters drawn from the first half of the alphabet, A-M. He also referred to the 11-letter NONSUPPORTS as the longest word with all of its letters drawn from the second half of the alphabet, N-Z.

An improvement on the first two of these is the 14-letter HAMAMELIDACEAE, which has received at least three previous mentions in *Word Ways* (February 1972, my article "Lightweights and Heavyweights" in November 1972, and February 1979). Both HAMAMELIDACEAE and NONSUPPORTS are also entered in Chris Cole's excellent *Word Play: A Curious Dictionary of Language Oddities*.

But suppose we shortened or extended the A-M window of the alphabet to A-L or A-N—what then are the longest words in those windows of letters? Suppose we generalize the problem to any size window of letters starting anywhere in the alphabet—what then are the longest words in each of those windows?

There is only one 26-letter window, A-Z. There are two 25-letter windows, A-Y and B-Z. There are three 24-letter windows, A-X, B-Y and C-Z. The number of windows increases by one as the size of the window decreases by one. There are 14 13-letter windows, of which A-M and N-Z are two. Finally, there are 25 2-letter windows and 26 1-letter windows. In general, there are $(27-n)$ windows of n letters. For n ranging from 1 to 26, that gives us a total of 351 different windows. What are the longest words that can be found in these windows? As I intend to devote a separate article to the 26 1-letter windows, here I shall consider only the 351 minus 26, or 325, windows having 2 to 26 letters.

What are the longest words that can be found in these 325 windows? For the single 26-letter window, this is simply the same as asking "what is the longest word?" This is a subject much studied in *Word Ways* and elsewhere, and I have merely offered the longest word in Webster's Third. For many of the shorter windows—five letters and fewer—it hasn't always been possible to find any word at all, due to the absence of a vowel in the window. Even so, I have admitted a number of vowelless words entered in dictionaries.

The problem is most interesting when considering window sizes of 6 to 18 letters. There are instances where a particular word makes only one appearance in the list below. For example, INDEMNIFIED is the longest word that can be formed from the letters in the 11-letter window D-N. For all larger windows containing D-N, there is always some other longer word. On the other hand, the word MONIMOLIMNION is the longest possible word that can be formed from the letters of 20 different windows, attributable to the fact that the word's letters are spread across a relatively small part of the alphabet, I-O. SUSURRUS, in 18 windows, is almost as common.

The 325 windows and the longest words that can be made from the letters in each of those windows are shown below, along with an indication of the source of each word. No hyphenated or multiword terms have been admitted. Multiple reference sources have not been quoted—e.g., if a word is in both Webster's Third and Webster's Second, only Webster's Third has been referenced. The pecking order for references is Webster's Third New International (W3); Webster's New International, Second Edition (W2); Oxford English Dictionary, Second Edition (OED). At the bottom of the pecking order are the following dictionaries: American Heritage Dictionary of the English Language, 4th Edition (AHD4), American Thesaurus of Slang, Berrey & van den Bark (ATS), The Chambers Dictionary (Chambers), The New Oxford Dictionary of English (NODE), The Random House Dictionary (RHD), and the Merriam-Webster Collegiate Dictionary, 10th Edition (WCD10).

I am sure that many improvements are possible to the words given below.

| Window Length Longest Word | | | Source |
|----------------------------|-----|----|--|
| 26 | A-Z | 45 | pneumonoultramicroscopicsilicovolcanoconiosis W3 |
| 25 | A-Y | 45 | pneumonoultramicroscopicsilicovolcanoconiosis W3 |
| 25 | B-Z | 24 | microspectrophotometries W3 |
| 24 | A-X | 45 | pneumonoultramicroscopicsilicovolcanoconiosis W3 |
| 24 | B-Y | 24 | desoxyribonucleoproteins OED |
| 24 | C-Z | 24 | microspectrophotometries W3 |
| 23 | A-W | 45 | pneumonoultramicroscopicsilicovolcanoconiosis W3 |
| 23 | B-X | 24 | microspectrophotometries W3 |
| 23 | C-Y | 26 | psychoneuroendocrinologies OED |
| 23 | D-Z | 22 | philoprogenitivenesses W3 |
| 22 | A-V | 45 | pneumonoultramicroscopicsilicovolcanoconiosis W3 |
| 22 | B-W | 24 | microspectrophotometries W3 |
| 22 | C-X | 24 | microspectrophotometries W3 |
| 22 | D-Y | 22 | philoprogenitivenesses W3 |
| 22 | E-Z | 24 | presuppositionlessnesses OED |
| 21 | A-U | 30 | floccinaucinihilipilifications OED |
| 21 | B-V | 24 | presuppositionlessnesses OED |
| 21 | C-W | 24 | presuppositionlessnesses OED |
| 21 | D-X | 24 | presuppositionlessnesses OED |
| 21 | E-Y | 24 | presuppositionlessnesses OED |
| 21 | F-Z | 16 | misproportioning OED |
| 20 | A-T | 29 | antidisestablishmentarianisms OED |
| 20 | B-U | 24 | presuppositionlessnesses OED |
| 20 | C-V | 24 | presuppositionlessnesses OED |
| 20 | D-W | 24 | presuppositionlessnesses OED |
| 20 | E-X | 24 | presuppositionlessnesses OED |
| 20 | F-Y | 16 | misproportioning OED |
| 20 | G-Z | 16 | misproportioning OED |
| 19 | A-S | 22 | incomprehensiblenesses W3 |
| 19 | B-T | 24 | microspectrophotometries W3 |
| 19 | C-U | 24 | presuppositionlessnesses OED |
| 19 | D-V | 24 | presuppositionlessnesses OED |
| 19 | E-W | 24 | presuppositionlessnesses OED |
| 19 | F-X | 16 | misproportioning OED |
| 19 | G-Y | 16 | misproportioning OED |
| 19 | H-Z | 16 | misproportioning OED |

| | | | | |
|----|-----|----|--------------------------|-------|
| 18 | A-R | 19 | dendrochronological | W3 |
| 18 | B-S | 22 | incomprehensiblenesses | W3 |
| 18 | C-T | 24 | microspectrophotometries | W3 |
| 18 | D-U | 24 | presuppositionlessnesses | OED |
| 18 | E-V | 24 | presuppositionlessnesses | OED |
| 18 | F-W | 16 | misproportioning | OED |
| 18 | G-X | 16 | misproportioning | OED |
| 18 | H-Y | 16 | supposititiously | W3 |
| 18 | I-Z | 16 | supposititiously | W3 |
| | | | | |
| 17 | A-Q | 16 | phenomenological | W3 |
| 17 | B-R | 15 | nonindependence | WCD10 |
| 17 | C-S | 21 | intermeddlesomenesses | W2 |
| 17 | D-T | 21 | intermeddlesomenesses | W2 |
| 17 | E-U | 24 | presuppositionlessnesses | OED |
| 17 | F-V | 16 | misproportioning | OED |
| 17 | G-W | 16 | misproportioning | OED |
| 17 | H-X | 16 | photolithoprints | W3 |
| 17 | I-Y | 16 | supposititiously | W3 |
| 17 | J-Z | 12 | monotonously | W3 |
| | | | | |
| 16 | A-P | 16 | phenomenological | W3 |
| 16 | B-Q | 15 | nonindependence | WCD10 |
| 16 | C-R | 15 | nonindependence | WCD10 |
| 16 | D-S | 20 | possessionlessnesses | W3 |
| 16 | E-T | 20 | possessionlessnesses | W3 |
| 16 | F-U | 16 | photolithoprints | W3 |
| 16 | G-V | 16 | photolithoprints | W3 |
| 16 | H-W | 16 | photolithoprints | W3 |
| 16 | I-X | 15 | inquisitionists | W2 |
| 16 | J-Y | 12 | monotonously | W3 |
| 16 | K-Z | 12 | monotonously | W3 |
| | | | | |
| 15 | A-O | 17 | mechanicochemical | W2 |
| 15 | B-P | 15 | nonindependence | WCD10 |
| 15 | C-Q | 15 | nonindependence | WCD10 |
| 15 | D-R | 14 | nonengineering | W2 |
| 15 | E-S | 20 | possessionlessnesses | W3 |
| 15 | F-T | 16 | photolithoprints | W3 |
| 15 | G-U | 16 | photolithoprints | W3 |
| 15 | H-V | 16 | photolithoprints | W3 |
| 15 | I-W | 15 | inquisitionists | W2 |
| 15 | J-X | 11 | nonsupports | W3 |
| 15 | K-Y | 12 | monotonously | W3 |
| 15 | L-Z | 12 | monotonously | W3 |
| | | | | |
| 14 | A-N | 14 | Hamamelidaceae | W3 |
| 14 | B-O | 14 | noncoincidence | W2 |
| 14 | C-P | 15 | nonindependence | WCD10 |
| 14 | D-Q | 13 | epiphenomenon | W3 |
| 14 | E-R | 14 | nonengineering | W2 |
| 14 | F-S | 14 | philosophising | WCD10 |
| 14 | G-T | 16 | photolithoprints | W3 |
| 14 | H-U | 16 | photolithoprints | W3 |
| 14 | I-V | 15 | inquisitionists | W2 |
| 14 | J-W | 11 | nonsupports | W3 |
| 14 | K-X | 11 | nonsupports | W3 |
| 14 | L-Y | 12 | monotonously | W3 |
| 14 | M-Z | 11 | nonsupports | W3 |

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|----|-----|----|------------------|----------|
| 13 | A-M | 14 | Hamamelidaceae | W3 |
| 13 | B-N | 12 | feebleminded | W3 |
| 13 | C-O | 14 | noncoincidence | W2 |
| 13 | D-P | 13 | epiphenomenon | W3 |
| 13 | E-Q | 13 | epiphenomenon | W3 |
| 13 | F-R | 13 | monimolimnion | OED |
| 13 | G-S | 14 | philosophising | WCD10 |
| 13 | H-T | 16 | photolithoprints | W3 |
| 13 | I-U | 15 | inquisitionists | W2 |
| 13 | J-V | 11 | nonsupports | W3 |
| 13 | K-W | 11 | nonsupports | W3 |
| 13 | L-X | 11 | nonsupports | W3 |
| 13 | M-Y | 11 | nonsupports | W3 |
| 13 | N-Z | 11 | nonsupports | W3 |
| | | | | |
| 12 | A-L | 13 | cabbageheaded | ATS |
| 12 | B-M | 9 | beflecked | W2 |
| 12 | C-N | 13 | killickinnick | W3 |
| 12 | D-O | 13 | monimolimnion | OED |
| 12 | E-P | 13 | epiphenomenon | W3 |
| 12 | F-Q | 13 | monimolimnion | OED |
| 12 | G-R | 13 | monimolimnion | OED |
| 12 | H-S | 13 | monimolimnion | OED |
| 12 | I-T | 14 | nonoppositions | W2 |
| 12 | J-U | 11 | monosporous | W3 |
| 12 | K-V | 11 | monosporous | W3 |
| 12 | L-W | 11 | monosporous | W3 |
| 12 | M-X | 11 | monosporous | W3 |
| 12 | N-Y | 11 | nonsupports | W3 |
| 12 | O-Z | 10 | puttyroots | W3 |
| | | | | |
| 11 | A-K | 13 | cabbageheaded | ATS |
| 11 | B-L | 9 | beflecked | W2 |
| 11 | C-M | 9 | childlike | W3 |
| 11 | D-N | 11 | indemnified | W3 |
| 11 | E-O | 13 | monimolimnion | OED |
| 11 | F-P | 13 | monimolimnion | OED |
| 11 | G-Q | 13 | monimolimnion | OED |
| 11 | H-R | 13 | monimolimnion | OED |
| 11 | I-S | 13 | monimolimnion | OED |
| 11 | J-T | 9 | moonports | OED |
| 11 | K-U | 11 | monosporous | W3 |
| 11 | L-V | 11 | monosporous | W3 |
| 11 | M-W | 11 | monosporous | W3 |
| 11 | N-X | 11 | nonsupports | W3 |
| 11 | O-Y | 10 | puttyroots | W3 |
| 11 | P-Z | 8 | susurrus | W3 |
| | | | | |
| 10 | A-J | 13 | cabbageheaded | ATS |
| 10 | B-K | 9 | jigjigged | Chambers |
| 10 | C-L | 9 | childlike | W3 |
| 10 | D-M | 9 | jellified | W3 |
| 10 | E-N | 11 | lemminglike | WCD10 |
| 10 | F-O | 13 | monimolimnion | OED |
| 10 | G-P | 13 | monimolimnion | OED |
| 10 | H-Q | 13 | monimolimnion | OED |
| 10 | I-R | 13 | monimolimnion | OED |
| 10 | J-S | 9 | poolrooms | W3 |
| 10 | K-T | 9 | moonports | OED |
| 10 | L-U | 11 | nonsupports | W3 |

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|----|-----|----|---------------|----------|
| 10 | M-V | 11 | monosporous | W3 |
| 10 | N-W | 11 | nonsupports | W3 |
| 10 | O-X | 9 | outsports | W3 |
| 10 | P-Y | 8 | susurrus | W3 |
| 10 | Q-Z | 8 | susurrus | W3 |
| | | | | |
| 9 | A-I | 13 | cabbageheaded | ATS |
| 9 | B-J | 9 | jiggjigged | Chambers |
| 9 | C-K | 9 | jiggjigged | Chambers |
| 9 | D-L | 9 | jellified | W3 |
| 9 | E-M | 8 | highlife | NODE |
| 9 | F-N | 10 | immingling | W3 |
| 9 | G-O | 13 | monimolimnion | OED |
| 9 | H-P | 13 | monimolimnion | OED |
| 9 | I-Q | 13 | monimolimnion | OED |
| 9 | J-R | 8 | poolroom | W3 |
| 9 | K-S | 9 | poolrooms | W3 |
| 9 | L-T | 9 | poolrooms | W3 |
| 9 | M-U | 11 | monosporous | W3 |
| 9 | N-V | 11 | nonsupports | W3 |
| 9 | O-W | 9 | outsports | W3 |
| 9 | P-X | 8 | susurrus | W3 |
| 9 | Q-Y | 8 | susurrus | W3 |
| 9 | R-Z | 8 | susurrus | W3 |
| | | | | |
| 8 | A-H | 13 | cabbageheaded | ATS |
| 8 | B-I | 7 | decided | W3 |
| 8 | C-J | 9 | jiggjigged | Chambers |
| 8 | D-K | 9 | jiggjigged | Chambers |
| 8 | E-L | 8 | highlife | NODE |
| 8 | F-M | 6 | jiggjig | Chambers |
| 8 | G-N | 10 | immingling | W3 |
| 8 | H-O | 13 | monimolimnion | OED |
| 8 | I-P | 13 | monimolimnion | OED |
| 8 | J-Q | 7 | pompoon | W3 |
| 8 | K-R | 8 | poolroom | W3 |
| 8 | L-S | 9 | poolrooms | W3 |
| 8 | M-T | 9 | moonports | OED |
| 8 | N-U | 11 | nonsupports | W3 |
| 8 | O-V | 9 | outsports | W3 |
| 8 | P-W | 8 | susurrus | W3 |
| 8 | Q-X | 8 | susurrus | W3 |
| 8 | R-Y | 8 | susurrus | W3 |
| 8 | S-Z | 6 | xystus | W3 |
| | | | | |
| 7 | A-G | 8 | cabbaged | W3 |
| 7 | B-H | 7 | cheffed | WCD10 |
| 7 | C-I | 8 | highhede | OED |
| 7 | D-J | 9 | jiggjigged | Chambers |
| 7 | E-K | 6 | jiggjig | Chambers |
| 7 | F-L | 6 | jiggjig | Chambers |
| 7 | G-M | 6 | jiggjig | Chambers |
| 7 | H-N | 8 | minimill | WCD10 |
| 7 | I-O | 13 | monimolimnion | OED |
| 7 | J-P | 7 | pompoon | W3 |
| 7 | K-Q | 7 | pompoon | W3 |
| 7 | L-R | 8 | poolroom | W3 |
| 7 | M-S | 9 | prosopons | W3 |
| 7 | N-T | 9 | prosopons | W3 |
| 7 | O-U | 9 | outsports | W3 |
| 7 | P-V | 8 | susurrus | W3 |

| | | | | |
|---|-----|---|-----------|----------|
| 7 | Q-W | 8 | susurrus | W3 |
| 7 | R-X | 8 | susurrus | W3 |
| 7 | S-Y | 6 | xystus | W3 |
| 7 | T-Z | 5 | tutty | W3 |
| 6 | A-F | 8 | Fabaceae | W3 |
| 6 | B-G | 8 | bebedded | W2 |
| 6 | C-H | 7 | cheffed | WCD10 |
| 6 | D-I | 8 | highhede | OED |
| 6 | E-J | 6 | jigjig | Chambers |
| 6 | F-K | 6 | jigjig | Chambers |
| 6 | G-L | 6 | jigjig | Chambers |
| 6 | H-M | 6 | khilim | Chambers |
| 6 | I-N | 8 | minimill | WCD10 |
| 6 | J-O | 5 | knoll | W3 |
| 6 | K-P | 7 | pompoon | W3 |
| 6 | L-Q | 7 | pompoon | W3 |
| 6 | M-R | 7 | pompoon | W3 |
| 6 | N-S | 9 | prosopons | W3 |
| 6 | O-T | 8 | tossports | W3 |
| 6 | P-U | 8 | susurrus | W3 |
| 6 | Q-V | 8 | susurrus | W3 |
| 6 | R-W | 8 | susurrus | W3 |
| 6 | S-X | 6 | suttus | OED |
| 6 | T-Y | 5 | tutty | W3 |
| 6 | U-Z | 5 | wuzzy | W2 |
| 5 | A-E | 7 | acceded | W3 |
| 5 | B-F | 8 | bebedded | W2 |
| 5 | C-G | 7 | deedeed | W2 |
| 5 | D-H | 7 | deedeed | W2 |
| 5 | E-I | 6 | geggee | W2 |
| 5 | F-J | 6 | jigjig | Chambers |
| 5 | G-K | 6 | jigjig | Chambers |
| 5 | H-L | 4 | hill | W3 |
| 5 | I-M | 5 | kilim | W3 |
| 5 | J-N | 2 | mm | OED |
| 5 | K-O | 5 | knoll | W3 |
| 5 | L-P | 7 | pompoon | W3 |
| 5 | M-Q | 7 | pompoon | W3 |
| 5 | N-R | 7 | nonpoor | WCD10 |
| 5 | O-S | 6 | spoors | W3 |
| 5 | P-T | 4 | psst | Chambers |
| 5 | Q-U | 8 | susurrus | W3 |
| 5 | R-V | 8 | susurrus | W3 |
| 5 | S-W | 6 | suttus | OED |
| 5 | T-X | 4 | tutu | W3 |
| 5 | U-Y | 2 | xu | WCD10 |
| 5 | V-Z | 3 | zyz | OED |
| 4 | A-D | 6 | bacaba | W3 |
| 4 | B-E | 8 | bebedded | W2 |
| 4 | C-F | 7 | deedeed | W2 |
| 4 | D-G | 7 | deedeed | W2 |
| 4 | E-H | 6 | geggee | W2 |
| 4 | F-I | 4 | high | W3 |
| 4 | G-J | 6 | jigjig | Chambers |
| 4 | H-K | 3 | khi | AHD4 |
| 4 | I-L | 5 | kilij | RHD |
| 4 | J-M | 2 | mm | OED |
| 4 | K-N | 2 | mm | OED |

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|---|-----|---|------------------------|-------|
| 4 | L-O | 4 | loom | W3 |
| 4 | M-P | 7 | pompoon | W3 |
| 4 | N-Q | 6 | ponpon | OED |
| 4 | O-R | 4 | poop | W3 |
| 4 | P-S | 2 | rs | W3 |
| 4 | Q-T | 2 | rs | W3 |
| 4 | R-U | 8 | susurrus | W3 |
| 4 | S-V | 6 | suttus | OED |
| 4 | T-W | 4 | tutu | W3 |
| 4 | U-X | 2 | xu | WCD10 |
| 4 | V-Y | 2 | wy | W3 |
| 4 | W-Z | 3 | yzy | OED |
| | | | | |
| 3 | A-C | 6 | bacaba | W3 |
| 3 | B-D | 0 | - | |
| 3 | C-E | 7 | deedeed | W2 |
| 3 | D-F | 7 | deedeed | W2 |
| 3 | E-G | 6 | geggee | W2 |
| 3 | F-H | 0 | - | |
| 3 | G-I | 4 | high | W3 |
| 3 | H-J | 3 | hij | OED |
| 3 | I-K | 2 | ki | W3 |
| 3 | J-L | 0 | - | |
| 3 | K-M | 2 | mm | OED |
| 3 | L-N | 2 | mm | OED |
| 3 | M-O | 4 | noon | W3 |
| 3 | N-P | 6 | ponpon | OED |
| 3 | O-Q | 4 | poop | W3 |
| 3 | P-R | 0 | - | |
| 3 | Q-S | 2 | rs | W3 |
| 3 | R-T | 2 | st | W2 |
| 3 | S-U | 6 | suttus | OED |
| 3 | T-V | 4 | tutu | W3 |
| 3 | U-W | 0 | - | |
| 3 | V-X | 0 | - | |
| 3 | W-Y | 2 | wy | W3 |
| 3 | X-Z | 3 | yzy | OED |
| | | | | |
| 2 | AB | 5 | Ababa (in Addis Ababa) | W3 |
| 2 | BC | 0 | - | |
| 2 | CD | 0 | - | |
| 2 | DE | 7 | deedeed | W2 |
| 2 | EF | 4 | feff | OED |
| 2 | FG | 0 | - | |
| 2 | GH | 0 | - | |
| 2 | HI | 3 | hii | OED |
| 2 | IJ | 0 | - | |
| 2 | JK | 0 | - | |
| 2 | KL | 0 | - | |
| 2 | LM | 2 | mm | OED |
| 2 | MN | 2 | mm | OED |
| 2 | NO | 4 | noon | W3 |
| 2 | OP | 4 | poop | W3 |
| 2 | PQ | 0 | - | |
| 2 | QR | 0 | - | |
| 2 | RS | 2 | rs | W3 |
| 2 | ST | 2 | st | W2 |
| 2 | TU | 4 | tutu | W3 |
| 2 | UV | 0 | - | |
| 2 | VW | 0 | - | |
| 2 | WX | 0 | - | |
| 2 | XY | 0 | - | |
| 2 | YZ | 3 | yzy | OED |