

AEIOU: A THIRTY-YEAR QUEST

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My FAVOURITE words are those in which the five vowels A,E,I,O and U each occur just once. They are referred to as AEIOU words. Over the last thirty years, Word Ways contributors have tried to find examples of these words to satisfy all 120 permutations of the five vowels. Whilst it is relatively easy to find several examples for many of the permutations, for others it is a struggle to find even one. Here, to begin with, is the story of the AEIOU quest.

HISTORY

It all started back in the November 1969 issue of Word Ways with Ross Eckler's "Unsociable Housemaid Discourages Facetious Behaviour". Ross was seeking at least one uncapitalised English word to satisfy each of the 120 AEIOU permutations. Initially, with the help of Dmitri Borgmann and Darryl Francis, he found one or more words for 104 of the 120 permutations. In the February 1970 issue he added LARYNGOFISSURE, FIEULAMORT (with Darryl Francis), PYROGATECHUIC, UNPRAISEWORTHY and PULVERIZATOR, all from Webster's Second Edition. (It is also worth noting that, in February 1970, VIOLATURE and MULTIRAMOSE, both in Webster's Second, were offered as replacements for non-Websterian examples.) Thus, by 1970, a total of 109 of the permutations had been catered for, leaving 11 gaps (below). Since that time, examples have been found to fill these gaps but only some of them adhere to the 'uncapitalised English words' constraint. Here is a timetable of events:

Feb 1970	Andrew Griscom	UIAEO	Cuitlateco (Web2)	capitalised
Feb 1975	Darryl Francis	OAUEI	opaqueing (OED1 cit)	good
Feb 1975	Darryl Francis	EAIUO	sea-liquor (CD)	hyphenated
May 1977	Philip Cohen	OAIEU	Ornacieux (OSN France)	capitalised
May 1979	Sir Jeremy Morse	IUEOA	picture-board (OED)	hyphenated
May 1979	Sir Jeremy Morse	IAEUO	village burrow (OED)	phrase
Aug 1985	Murray Geller	OEIAU	Oeciacus (Web3)	capitalised
Nov 1993	Susan Thorpe	AEIUO	Laeviturbo (NZ)	capitalised
Feb 1994	Susan Thorpe	IUEOA	milquetoast (Web3)	good
Feb 1994	Chris Long	AUIEO	cauilero (OED)	good
Feb 1994	Chris Long	AUIEO	Marquisedom (OED)	capitalised
Feb 1994	Chris Long	IAUEO	lillabullero (OED cit)	good
Feb 1994	Chris Long	IEAUO	Ierfaulcon (OED cit)	capitalised

So, by February 1994, all 11 gaps had been filled. Incredibly, it had taken nearly 25 years to find at least one example to represent each of the 120 AEIOU permutations!

CURRENT EVENTS

Five more years have now elapsed, and 1999 marks the thirtieth anniversary of the inception of the AEIOU quest. Those less-than-perfect examples (uncapitalised, hyphenated, phrase) still reside in our list. Can we get rid of any of them? I decided it was time to search for improvements. As a result, I can now offer the following alternatives:

Aug 1999	Susan Thorpe	AEIUO cane-liquor (Web2)	hyphenated
Aug 1999	Susan Thorpe	EAIUO recapitulator (OED cit)	Latin
Aug 1999	Susan Thorpe	IAEUO inaequo (CLD)	Latin
Aug 1999	Susan Thorpe	OAIEU containerful (BT)	good
Aug 1999	Susan Thorpe	OEIAU coeliacus (Web3)	Latin
Aug 1999	Susan Thorpe	UIAEO quinaseptol (CDS)	good

Readers will have to decide for themselves whether or not hyphenated words are preferable to capitalised words, and whether they prefer single unhyphenated Latin words to the examples previously found.

In List A below, the 109 non-italicised words are Ross's 1969 and 1970 contributions. The italicised words are subsequent additions.

SINGLE SOURCES

In "An AEIOU Examination" in the May 1979 Word Ways, David Shulman found 68 of the 120 AEIOU permutations in a single dictionary (Funk & Wagnalls Standard College Dictionary). This started me thinking...would it be possible to satisfy all 120 permutations with words taken from any single dictionary? Admittedly this sounds rather ambitious. Being patriotic, I decided to try the single-dictionary exercise with that British bible, the Oxford English Dictionary, Second Edition. I imposed only two constraints, being very aware of how restrictive 'uncapitalised' and 'English' had proved to be. Firstly, the words must appear somewhere in the OED, be it as head words, variant forms, or words in the text including citations. When provided with a choice I gave preference to head words. The second constraint was not to repeat any of the words which appeared in List A. The results of my OED searches are given in List B. I was successful in finding at least one OED word for each of the 120 permutations. Initially I didn't quite meet my second target, four words appearing in both List A and List B. However, I managed to release these words for exclusive use in List B by finding List A replacements (AIEUO, IAUEO, IEAUO, IUEOA). Thus my second goal had also been achieved, all 120 OED words in List B being different from the words in List A. Implicitly this means that, overall, at least two words of some description have now been found to represent each permutation. The fact that none of the words in List B is hyphenated and only one (Ierfaulcon) is capitalised is a bonus.

In these lists, a word shown in brackets is the head word under which the listed word can be found. Where relevant it is followed by a citation date. A variant form is indicated by vf.

A

AEIOU facetious (WebC7)
 AEIUO *Laeviturbo* (NZ), *cane-liquor* (Web2)
 AEOIU pandemonium (WebC7)
 AEOUI haemofuscin (Web2)
 AEUIO maleruption (Web2)
 AEUOI aneuploid (Web3)
 AIEOU ambidextrous (WebC7)
 AIEUO *archineuron* (Web2)
 AIOEU carillonneur (WebC7)
 AIOUE grandiloquent (WebC7)
 AIUEO antinucleon (Web3)
 AIUOE radiculose (Web3)
 AOEIU apothecium (WebC7)
 AOEUI allotelluric (Web2)
 AOIEU amortisseur (Web3)
 AOIUE laryngofissure (Web2)
 AOUEI accoutering (WebC7)
 AOUIE tambourine (WebC7)
 AUEIO aculeiform (Web3)
 AUEOI aureomycin (Web3)
 AUIEO *cauilero* (OED)
 AUIOE cauliflower (WebC7)
 AUOEI autosexing (WebC7)
 AUOIE authorize (WebC7)

EAIOU behaviour (WebC7)
 EAIUO *sea-liquor* (CD), *recapitulor* (OED -head 1678)
 EAOIU crematorium (WebC7)
 EAOUI reavouching (Web2)
 EAUIO exhaustion (WebC7)
 EAUOI tentaculoid (Web3)
 EIAOU pedimanous (Web3)
 EIAUO semiauto (Web3)
 EIOAU plesiosaur (WebC7)
 EIOUA ventriloqual (WebC5)
 EIUAO gesticulatory (WebC7)
 EIUOA semicupola (Web2)
 EOAIU endocardium (WebC7)
 EOAIU seroalbumin (Web2)
 EOIAU neostriatum (Web3)
 EOIUA dentolingual (WebC5)
 EOUAI encouraging (WebC7)
 EOUIA dentosurgical (WebC5)
 EUAIO education (WebC7)
 EUAOI euharmonic (Web3)
 EUIAO repudiator (WebC7)
 EUIOA equivocal (WebC7)
 EUOAI neuropathic (WebC7)
 EUOIA sequoia (WebC7)

B

caesious
 aegritudo (aegritude)
 archesporium (archespore)
 warehousing
 flabergudgion
 aequorin
 aireous
 antineutrons (anti- 1942)
 raisonneur
 graciousness
 adinuencyons (adinvention 1413)
 ramiculose
 macrotherium (macrothere)
 manoeuvring
 agonieux (agony)
 acrostique (vf acrostic)
 assouerit
 savouriness
 haugersion
 aureolin
 alumineor (alluminor)
 cautioned
 tautomerism
 vacuolized

mendacious
 beatitudo (beatitude)
 metapodium
 enamouring
 reassumption
 pennatuloid
 epiphanous
 peliagudo (sharp 1755)
 periostracum
 heliofugal
 recirculatory
 ventriculography
 neopallium
 menopausic
 excoriatus (flay c1440)
 precommisural
 depopulating
 precommunicant
 equation
 eukaryotic
 elucidator
 equimolar
 eustomachic
 neurotically

IAEOU	intravenous (WebC7)	filamentous
IAEUO	<i>village burrow</i> (OED), <i>inaequo</i> (CLD)	invaletudo (invaletude)
IAOEU	citharoedus (Web2)	cinnamomeus (flat 1859)
IAOUE	miaoued (WebC5)	dialogue
IAUEO	<i>diauchenos</i> (Dor)	lillabullero (Lillibullero 1782)
IAUOE	disaccustomed (WebC7)	triantulope (vf triantelope)
IEAOU	tricephalous (Web3)	dipetalous
IEAUO	<i>printer-author</i> (OED - printer)	<i>Ierfaulcon</i> (gyrfalcon 1580)
IEOAU	diesophagus (?) - is in Dor	interrogatus (Hanse 1279)
IEOUA	intercolumnar (Web3)	intercommunal
IEUAO	fiulamort (Web3)	dimensurator
IEUOA	interpulmonary (Web3)	irreuocably (consistory 1502)
IOAEU	lithofracteur (Web2)	icosaedrum (vf icosahedron)
IOAUE	isopaque (?), <i>violature</i> (Web2)	microcapsule
IOEAU	hippocentaur (Web3)	microcephalous
IOEUA	incommensurably (WebC7)	inopercular
IOUAE	discourage (WebC7)	incomputable
IOUEA	isonuclear (Web3)	micronuclear
IUAEO	linguaeform (Web3)	stipulaeform
IUAOE	fistulatome (Web2)	linguaphone
IUEAO	vituperator (WebC7)	induperator
IUEOA	<i>Figueroa</i> (TIG - in Chile)	milquetoast (Milquetoast 1973)
IUOAE	insupportable (WebC7)	insupposable
IUOEA	immunotherapy (WebC7)	circumcorneal
OAEIU	hypotrachelium (Web3)	mycobacterium
OAEUI	pyrocatechuic (Web2)	longaeuity (longevity 1621)
OAIEU	<i>containerful</i> (BT)	solacicus (solacious)
OAIUE	portraiture (WebC7)	ortanique
OAUEI	opaqueing (OED)	contrauersi (sorely c1450)
OAUIE	consanguine (WebC7)	oraculize
OEAIU	overpainful (Web2)	cometarium
OEAUI	overhauling (WebC7)	overvaulting
OEIAU	<i>Oeciacus</i> (Web3), <i>coeliacus</i> (Web3 - coeliac)	obeiauns
OEIUA	proventricular (Web3)	conventicular
OEUIA	conceptualism (WebC7)	coequality
OIAEU	obsequial (Web3)	orteguina
OIAUE	poplitaeus (Web3)	omnigatherum
OIEAU	foliature (WebC5)	consignature
OIEUA	moineau (Web2)	cointreau
OIUAE	ovicellular (Web3)	coniecturall (conjectural 1597)
OIUAE	continuable (Web2)	orbiculate
OIUEA	solifugean (Web3)	constituentary
OUAEI	outcapering (Web2)	outwandering
OUAIE	tourmaline (WebC7)	gourmandise
OUEAI	housemaid (WebC7)	mousetail
OUEIA	volumetrically (WebC7)	countercyclical
OUIAE	communicate (WebC7)	occupiable
OUIEA	bountihead (Web2)	outlinear

UAEIO	quaternion (WebC7)	unattention
UAEOI	quatrefoil (WebC7)	crustaceoid
UAIEO	unpraiseworthy (Web2)	guarnimento (ray c1450)
UAIOE	ultraviolet (WebC7)	ungainsome
UAOEI	ultramodernism (Web2)	unatmospheric
UAOIE	uvarovite (WebC7)	unaccomplished
UEAIO	numeration (WebC7)	putrefaction
UEAOI	unreasoning (WebC7)	unseasoning
UEIAO	pulverizator (Web2)	guesstimater
UEIOA	questionably (WebC7)	unreciprocal
UEOAI	undemocratic (WebC7)	undercoating
UEOIA	unmethodical (WebC70)	unrhetorical
UIAEO	<i>quinaseptol</i> (CDS)	subitaneo (sudden)
UIAOE	multianode (?), <i>multiramose</i> (Web2)	undiagnosed
UIEAO	quindecagon (WebC5)	multimegaton (multi- 1958)
UIEOA	unipersonal (Web2)	multipersonal
UIOAE	unimportance (WebC7)	undissolvable
UIOEA	undiscoverably (Web3)	unicorneal
UOAEI	sulphophthaleins (Web2)	burgomastership
UOAIE	unorganized (WebC7)	sulphocyanide
UOEAI	suboceanic (WebC7)	unoperating
UOEIA	uncongenial (WebC7)	uncommercial
UOIAE	subordinate (WebC7)	unsociable
UOIEA	unoriental (Web2)	uncomplimentary

References

- BT = Bloomsbury Thesaurus 1993
 CLD = Cassell's Latin Dictionary 1948
 CD(S) = Century Dictionary 1889-91 (Supplement 1909)
 Dor = Dorland's Medical Dictionary
 NZ = Nomenclator Zoologicus
 OED1 = Oxford English Dictionary 1st edition
 OED = Oxford English Dictionary 2nd edition
 OSN = Official Standard Names Gazetteer
 Sted = Stedman's Medical Dictionary
 TIG = Times Index Gazetteer of the World
 WebC5 = Webster's Collegiate Dictionary 5th edition
 WebC7 = Webster's Collegiate Dictionary 7th edition
 Web2 = Webster's New International Unabridged Dictionary 2nd edition
 Web3 = Webster's New International Unabridged Dictionary 3rd edition