

VOWEL TETRAGRAMS REVISITED

SUSAN THORPE

Great Missenden, Buckinghamshire, England
thorped@hotmail.com

A Vowel Tetragram (VT) is a group of 4 vowels unbroken by any consonants. There are 625 different VTs (125 beginning with each of A, E, I, O and U), ranging from AAAA, AAAE through UUUO, UUUU. Words which contain a VT can be called Vowel Tetragram Words (VTWs). Relatively few words in current everyday usage include a VT. AQUEOUS, QUEUE, ONOMATOPOEIA, COOEE, HAWAIIAN and SEQUOIA are perhaps the most familiar.

HISTORY

A number of VTWs have appeared in *Word Ways*, as well as in *Language on Vacation* by Dmitri Borgmann, 1965 (pp 156-7), and *The Palindromicon* by Jeff Grant, 1992. Some of the *Word Ways*' VTWs are the result of direct searches for such words; others, together with those of Borgmann and Grant, appear in items with a non-VT context.

Vowel Tetragrams by Darryl Francis (74140) is, to date, the only article which directly searches for VTWs. In it, Darryl lists words demonstrating 85 of the 625 different VTs. **48** of these had not appeared previously.

Prior to 74140, **96** VTWs had appeared in non-VT contexts. Darryl included 37 of these in his article but overlooked the other 59. The 96 pre-74140 VTWs appear in *Language On Vacation* and *Word Ways* (68139, 69136/192, 70213, 71059, 71143 and 74098).

Since 74140, words covering at least another **82** VTs have appeared. 14 of these took the form of additions to Darryl's article (Colloquies: 74213, 75021 and 75088). The remaining 68 can be found in *The Palindromicon* and *Word Ways* (76088, 77220, 80250, 81157, 81240, 82073, 89254, 91188, 89254, 92185, 93155, 94013, 99173, 2000191 and 2002249).

To date, therefore, 226 (96 + 48 + 82) of the 625 VTs have been accounted for.

TABLES 1 to 5

I found VTWs for 297 more VTs, making a total of 523 (226 + 297) of the 625 accounted for. Many of my additions are old forms of words, particularly those in which the letter U is replaced in modern English by the letter V. In 74213, Ross Eckler hit the nail on the head when he said "It seems clear that the Oxford English Dictionary can be mined for a much larger number of all-vowel tetragrams than.....reported in the August 1974 *Word Ways*". It is hardly surprising that no one rose to the challenge, the first edition of the OED not being available on CD ROM.

Unreferenced words in Tables 1 to 5 can be found in the OED, Second Edition. Sources of non-OED words are given at the end. Locations are identified by country. All the words are either solid or hyphenated. Asterisked* tetragrams have appeared in words in previous issues of *Word Ways*, in *Language on Vacation*, or in *The Palindromicon*. I have used different examples for these tetragrams where more than one was found, except where the original example is preferable. Individual words which have appeared before are also asterisked*.

Table 1. Vowel Tetragrams beginning with the letter A

aaaa* AAAATAMAD* cad	aaae* FAAAE*(pers.name - Pacific Is.)	aaai VAPAA-AIKA (<i>leisure</i> : Finnish)
aaao	aaau* AAAUASASU* cad	aaea* ACHAAEA (see endow v.1601)
aaee NAAEE (Canada)	aaei CHAAEIR (Lebanon)	aaeo
aaeu BAAEU (Cambodia)	aaia* HAAIALKAUAE Hodge	aaie ASSEGAAIED ch
aaia* NAAIK Hodge	aaio HANKHAAIOLA Hodge	aiiu AAIUN, EI (Morocco)
aaia* AOAAOA*(yelling: Rarotongan)	aaie HAAOENT (Norway)	aaio* HAAOIPU* (Fr. Polynesia)
aaoo MAAOOPE (Australia)	aaou* AAOUSIENE* (Morocco)	aaia* AAAUASASU* cad
aaue MAAUELI (Kenya)	aaui* PAAUILO*(<i>Hawaiian town</i>)	aaou NTAAUOTIN Hodge
aaui EL-MAAUUEG (Libya)	aeaa	aeae* AEAEAN* w2
aeai NAEAI (Kiribati)	aeao RAEAO (Solomon Is.)	aeau* PRAEAURICULAR
aeia CYBAEEAE (<i>spiders</i>)	aeie KAEIE (<i>stiff</i>) haw	aeai
aeio PAEEON (<i>Apollo</i>)	aeiu* PALAEEUDYPTES* w2	aeia PHARMOCOPAEIA
aeie* DAEIE (<i>day</i>)	aeii	aeio PRAEIOTISED
aeiu PRAEIUDICE(<i>prejudice</i>)	aeia* ARCHAEOASTRONOMER	aeie* PALAEOEQUATOR
aeio* NYMPHAEOIDES (<i>plant sp nam</i>)	aeio PALAEO-OCEANOGRAPHY	aeou AQUAEIOUS
aeia SCRAEUA (<i>shrew</i>)	aeie HAEUEDE (<i>have</i>)	aeui* PRAEUIOUS (<i>previous</i>)
aeio INGAEUONES(<i>German tribe</i>)	aeiu HAEUII (<i>haw = blue</i>)	aiia* KAIAAKEA* (70214)
aiia* BRAIAE (<i>Roman Spa</i>)	aiia* AIIAI* (<i>roseate spoonbill</i>)	aiio* TAIAOBAS (<i>plant</i>)
aiiu* PAIAUNT (<i>pageant</i>)	aiia* PAIEABLE (<i>payable</i>)	aiie* RESAIEE (<i>counterpane</i>)
aiie* LAIEINGE (<i>laying</i>)	aiio NAIEO (<i>tree</i>)	aiiu* MAIEUR (<i>mayor</i>)
aiia* HAWAIIAN*	aiie SAIED (Morocco)	aiii
aiio KATEKSKIIIRAIION (Kazakhstan)	aiiu QUAIUNOUGH Hodge	aiia* ERAIOA (Morocco)
aiie PERAIOEIN(<i>Crustac. thorax</i>) ch	aiio* RAIOD (<i>ray-like</i>)	aiio KILHAIIO Hodge
aiiu* MAIOUR (<i>mayor</i>)	aiia* SAIUASSU (<i>monkey sp</i>)	aiie DISSAIEE (<i>deceive</i>)
aiiu RAIUIS (<i>ravish</i>)	aiiu* VAIUOD (<i>vaivode</i>)	aiiu RAIUURW (Micronesia)
aoaa* AOAAOA*(yelling: Rarotongan)	aoae MATAOAE(Fr. Polynesia)	aoai AOAIS Hodge
aoao* AOAAOA*(<i>seaside shrub</i>) haw	aoau MAOAU (Mozambique)	aoea AOATSIOAENRONNON Hodge
aoee	aoei LAOEINALOELOE (Indonesia)	aoeo ANEJAOEOE(Marshall Is.)
aoeu CAOEU (Algeria)	aoia AOIATENON Hodge	aoie TAOIE (Cambodia)
aoii	aoio CAOIO (Angola)	aiiu CAOIU (Romania)
aoia	aoie BAKKAOOE (Suriname)	aooi
aooo	aoiu ATTIGNAOOUEANTAN Hodge	aoia* SAOUARI* (<i>tree</i>)
aoie* POULLAOUEN (France)	aoiu* AOUIILLAGE (<i>ullage</i>)	aoiu* CHAOUOINONG Hodge
aoiu HANAOUUA (Fr. Polynesia)	aoia SAUAAND (<i>saw - a tool</i>)	aoie CILIAU-AERON (Wales)
aoia* TRAUAILLE* (<i>travail</i>)	aoio TARAUAOCA (Brazil)	aoiu* CRAUAUNDE* (<i>craven</i>)
aoia* BRAUEADO (<i>bravado</i>)	aoie CAUEELERE (<i>cavalier</i>)	aoie* TRAUAIL (<i>travail</i>)
aoio BEHAUEOUR(<i>behaviour</i>)	aoiu NAUEU (<i>rape plant</i>)	aoia* CHAUIALE (<i>caviare</i>)
aoie* BAUIER (<i>beaver</i>)	aiii	aoio HAUOR (<i>haviour</i>)
aiiu HAUIG (<i>having</i>)	aoia* PAUOA*(town in Honolulu)	aoie* AUOEODIA* bae
aoio* AUOID (<i>avoid</i>)	aoio SAUOOUR (<i>savour</i>)	aoiu* BAUOUR (<i>beaver</i>)
aoia* SCREAUUA* (<i>shrew</i>)	aoie* AUUEN (<i>own</i>)	aiiu CAUUNIS (see pulley 1851)
aoiu* CLAUUO (<i>claw</i>)	aiiu	

VTs accounted for:	112	(to date* 53; new 59)
VTs not accounted for:	13	
total	125	

Table 2. Vowel Tetragrams beginning with the letter E

eaaa* EAAA*(<i>burning air</i>) haw	eaae LILLEAAEN (Norway)	eaai SEA-AIR
eaao JEAAOUNA (Morocco)	eaau* RINGEAAULT (<i>a snake</i>)	eaea* AEAEANS* w2
eaeE SEA-EEL	eaei* AETAEAEI*(<i>an Arabian people</i>)	eaeo ANDREAEOBRYA oopc
eaEU NEMEAIEUS (<i>Nemean</i>)	eaia* REAIA (in Bible) w2	eaie DREAIEN (<i>draw v.</i>)
eaii* PEAIING(<i>witch-doctoring</i>)	eaio PEEAIOS(<i>witch-doctors</i>)	eaiu
eaOa SEA-OAK	eaOE BENOEAOEDJOENG (Indonesia)	eaOI TEA-OIL
eaOO* SEA-OOZE	eaou* MEAOUTSE(see Miaotse)	eaua* BREAUARYE (<i>breviary</i>)
eaue* BEAUETRY* (<i>dandyism</i>)	eaui* BEAUIH* (<i>dandified</i>)	eauO BUREAU-OCRACY
eaUU* SCREAUUA* (<i>shrew</i>)	eeaa YEE-AAY-EE (in G W T Wind)	eeae PROTEEAE medical
eeai PEEAI (<i>witch-doctor</i>)	eeao	eeau* BLEEAUNT(<i>type of tunic</i>)
eeEa BEE-EATER	eeee* EEEEEVE* (<i>the iiwi bird</i>)	eeei THREE-EIGHTHS
eeEO	eeEU HOUSE-EEUES (<i>house-eaves</i>)	eeia* EEIAO* (<i>ear</i>) haw
eeie LOVE-EIE (<i>love-dread</i>)	eeii	eeio SPEEIOUS (<i>specious</i>)
eeiu	eeOa	eeOE PEEOE (<i>type of firework</i>)
eeOI GEEO-ING(interjection <i>gee-o</i>)	eeOO* TEEOO* (<i>lapwing</i>)	eeou THREE-OUNCER
eeUa AGREEUANCE(<i>aggravance</i>)	eeue* CEEUE (<i>sieve</i>)	eeui
eeUO GREEUOUS (<i>grievous</i>)	eeuu	eiaa FEIAA (Algeria)
eiae CYRCEIAERD(<i>churchyard</i>)	eiai BEIAIP (<i>to jilt</i>)	eiao* EIAO* (Fr. Polynesia)
eiau* HEIAU* (<i>a temple</i>)	eiea* IEIEA* (<i>barbed</i>) haw	eiee
eiei* EIEIE* p	eieO WERREIEOR (<i>warrior</i>)	eieu PAUOITIGOU EIEUHAK Hodge
eiia* POMPEIIAN*	eiie FREIER (Old Fr. <i>to rub</i>)	eiii
eiio	eiiu	eioa TEIOA edfc
eioE EIOESTURES Hodge	eioi* TEIOID* w2	eioO HEIOORD (Netherlands)
eiou* HAREIOUS* (<i>harageous</i>)	eiua RECEIUABLE (<i>receivable</i>)	eiue* CONSEIUE (<i>conceive</i>)
eiui NEIUIND (<i>ninth</i>)	eiuo* DECEIUOUR* (<i>deceiver</i>)	eiuu OIMATEIUU (Palau)
eoaa	eoae* OLVACEO-AENEIOUS(<i>colour</i>)	eoai LEOAI (East Timor)
eoao TEOAO (Djibouti)	eoau TEREAO-AUSCULTATE st	eoEa PAREOEAN (re. S.Mongul race)
eoEE POEOEELO (Indonesia)	eoEi GEOEIDES(Gk. <i>earth-like</i>)	eoEO* EOEO* (<i>stone pile</i>) haw
eoEU BEOEUF (see debefe)	eoia SCEOIAN (<i>shoe</i>)	eoie FREOEN (<i>free</i>)
eoii	eoio* CASEO-IODINE st	eoIU JUDAEIOIULUS nz
eoOa* EOOAIGEE*(Tongan Island)	eoOE TRACHEOOESOPHAGEAL	eoOI* OLEO-OIL
eoOO CRETACEO-OOLITIC	eoou CERULEOOUS(<i>ceruleous</i>)	eoUa* AYEQUAIS Hodge
eoUE* BEHEOUEN (<i>behove</i>)	eoUi BEOUIEN (<i>tremble</i>)	eoUO EOUE (in the Congo)
eoUU BEOUUS (<i>beef</i>)	euaa	euae* EUAEMIA* f+w
euai DEVAILL (<i>devall</i>)	euao NGERKESEUAOL(Palau)	euau* BEUAUTE (<i>beauty</i>)
euea* IEUAAL (<i>jewel</i>)	eueE* MEULEUEE(<i>Muslim doc.of law</i>)	euei* QUEUEING*
eueO GREUEOUS (<i>grievous</i>)	eueU* NEUEU (<i>nephew</i>)	euia* BREUIARIE* (<i>breviary</i>)
euie BEUIE (<i>bevy</i>)	euii CLEUIINDE (<i>cleaving</i>)	euio DEUIOUS (<i>devious</i>)
euIU* REUIUE (<i>revive</i>)	euOa	euOE* EUOENOTHERA (<i>a subgenus</i>)
euOI* EUOIR (<i>ivory</i>)	euOO	euOU* DEUOUACIOUS(<i>devouation</i>)
euUa SCREUUA (<i>shrew</i>)	euUE* EUUELA (<i>uvula</i>)	euui BEREUIICUS(<i>berewick</i>)
euUO HREUUON (<i>to rue</i>)	euUU	

VTs accounted for: 107 (to date* 45; new 62)

VTs not accounted for: 18

total 125

Table 3. Vowel Tetragrams beginning with the letter I

iaaa	OIAAARSE (Estonia)	iaae	TIAAEN (norway)	iaai*	IAAI*(interrogation: Rarotongan)
iaao		iaau		iaea*	BRODIAEA*(plant genus)w2
iaee*	HALIAEETUS(eagle genus)w2	iaei	COLLIAEI (sp. of rat-fish)	iaeo	
iaeu*	CODIAEUM* dfpf	iaia*	CHIAIA(Turkish viceroy)	iaie	PAPEIAIE (popinjay)
iaii	TIAII (Chad)	iaio*	IAIOLER* (jailer)	iaiu	CAIAIULA (Angola)
iaoa	VALONIA-OAK	iaoe	ATTINNIAOENTEN Hodge	iaoi	GASHAOMIAOIA nz
iaoo		iaou*	MIAOUED ospd	iaua*	CILIAUAERON (location)
iaue*	MIAUER* pull	iaui	IAUIL (javel)	iauo	CHIAUO (blister on trees)
iauu	GIAUUA (Libya)	ieaa		ieae*	ASPLENIEAE(ferns) w2
ieai	COUNTRIE-AIRE	ieao	MIEAOU (miaow)	ieau	CODIEAUM aig
ieea	PIE-EATER	ieee		ieei	POIEEIN (Gk.to make) ch
ieeo	TIEEOUL (Senegal)	ieeu		ieia*	HYGIEIA (health) ch
ieie*	CLAIEIE (clayey)	ieii		ieio*	HYGIEIOLATRY st
ieiu*	IEIUNIUM* (jejunum)	ieoa	BRIEOA (Ivory Coast)	ieoe	
ieoi		ieoo	OAKCHOIEOOCHÉ Hodge	ieou*	IEOUE (jouk)
ieua*	UNBELIEUABLE	ieue*	CHIEUETAINE (chieftain)	ieui	PIEUIISH (peevish)
ieuo	IEUO (Welsh: to yoke)	ieuu	IEUU (jew)	iaa*	IAAO*(hard mouldy poi)haw
iaae*	IAES (eyas)	iaai	PANAIIAI (Papua NG)	iao*	IAO* (fish) haw
iaiu		iea		iee	
ieei		ieo		ieui	
iaia		iee	IIIE (see skillet 1. 1519)	iii*	III* (sleepless-Tahitian)
iaio		iiu		ioa	rRIIOASA (Romania)
ioee		ioi	BAATIIOICO (Fr. Polynesia)	ioo	
iiou	IIOUSTED(see host v. 1297)	iiua	CHIIUANE(Mozambique)	iiue	
iiui		iiuo		iiuu	
ioaa	IOAA (Greece)	ioae*	BIOAERATION dor	ioai*	OIAOIA* (to entwine) haw
ioao	CARDIOAORTIC st	ioau*	CRANIOAURAL dor	ioea*	KIOEA* (a curlew) w2
ioee		ioei*	AXIOEIN(Gk to think worthy)ch	ioeo	PEDIOEOS (Cyprus)
ioeu	GLACIO-EUSTATIC	ioia*	IOIAX (jewel)	ioie	IOIEN (joy)
ioii	SOQUOQUIOII Hodge	ioio*	RADIOIODINE* st	ioiu	VARIOIUS (various)
iooa		iooe	CARDIO-OESOPHAGEAL	iooi	
iooo		ioou	PRECIOOUS (precious)	ioua*	SIOUAN
ioue*	BIOUE (behave)	ioui*	IOUIS (Jew)	iouo*	KULIOUOU (location)
iouu	IOUUTE (pot-herbs)	iuaa*	CATIUAAS (location)	iuae*	IUAERE (an associate)
iuai*	IUAIE (to hate)	iuao		iuau*	CHIUAUS(see hambargh13)
iuca*	PRIUEABLE (provable)	iuce	IUEEN (to hate)	iuai*	PERSIUEIR (persevere)
iuco		iuco	NIUEUOMOKAI Hodge	iuia	UIUIA(type of beer) haw
iuie*	PRIUIE (privet)	iuui		iuio	NIUIOUS (niveous)
iuui*	IUIUBAS (jujube)	iuoa	GIURGIUOANA(Romania)	iuoe	IUOERE (ivory)
iuoi	ATTIUOINDARONS Hodge	iuoo		iuou*	REUIUOUR* (revivor)
iuua	COADIUUATING (coadjuvation	iuue*	IUUMENTEE (juventy)	iuui*	IUII* (yew)
iuuo	1601)	iuuu			

VTs accounted for: 90 (to date* 43; new 47)
 VTs not accounted for: 35
 total 125

Table 4. Vowel Tetragrams beginning with the letter O

oaaa* WOA-A-A(interjection woa)	oaae SLOAAEN (Norway)	oaaï QOEQOAAINOX Hodge
oaaö* AOAAOA*(yelling: Rarotonga)	oaaü FAOAAUN (East Timor)	oaea* ZOAEA (zoea)
oaeë	oaeï HOAEI (Laos)	oaeö* HYPOAEOLIAN*
oaeü	oaiä TIMAROAIA (Morocco)	oaië JOAIE (Liberia)
oaiï ORTOOAI (Mongolia)	oaiö* LOAIASIS(medical condition)	oaiü COAIUTOR (coadjutor)
oaoa* AOAOA*(sea breeze - Honolulu)	oaoë GOAOEKOE (Indonesia)	oaoï OAOITI (New Zealand)
oaoö	oaoü BOAOUENE (Morocco)	oauä COAUA(type of black wheat)
oauë COAUE (cove)	oauï ROAUIING(see landmark n.1550)	oauö PROAUO (see post n.1595)
oauü PROAUUIA(mother n.1e c1050)	oeaa MOEAANG (Cambodia)	oeae* ZOEAÉ (zoea)
oeai AICOEAI (East Timor)	oeao BANOEAOSANG (Indonesia)	oeau WHATSOEVER (whatsoever)
oeëa POTATOE-EATER	oeëë SAGOEÉE (Indonesia)	oeëï* COOEÉEING*
oeëö	oeëü BABAHLOEÉEUE (Indonesia)	oeiä* LOGOPOEIA*
oeië BOEIE (buoy)	oeiï SCHOEIING (shoeing)	oeiö ONOMATOPOEIOUS
oeiü	oeöa* HOMOEEOARCHY*	oeöë* OEÖE* (whistle) haw
oeoi* HOMOEEOIDAL	oeöö HOMOEEO-OSMOSIS	oeöü* CALLAHPOEÖUAH Hodge
oeuä MOEUABLITE(movability)	oeuë BOEUER (bever)	oeui WHATSOEVER
oeuö LOEUONG (Thailand)	oeuü OEUURAGE (overage)	oiaä ROOI-AAS (red-bait)
oiaë BOIAE (a fetter)	oiai* OIAI* (meanwhile) haw	oiao OIAODDEN (Norway)
oiaü* JOIAUX (jewels)	oieä BOIEAU (Belgium)	oieë* OIEET* (a call to horses) edd
oiei ONOMATOPOEIA	oieö SOIEORNINGE(sojourning)	oieu JOIEUST (joyous)
oiiä ONOMATOPOIIA ch	oiië PLOIIER (ply-to fold etc)	oiii BOI-I-ING (interj. boing)
oiiö	oiiü	oioä TAPOIOAE (Fr.Polynesia)
oioë* OIOEIDES* (egg-shaped)ch	oioï* OIOI* (to squirm) haw	oioö HOMOIO-OSMOTIC
oiou* ANNOIOUS (annoy)	oiuä MELOIUA (Mozambique)	oiuë
oiui ROOIUITSIG (S.Africa)	oiuö UOIUOD (voivode)	oiüü KOIUUKOSKI (Finland)
oöaa* O-O-A-A* w2	oöae WENOOAETTE (Cook Is.)	oöai* EOOAIGEE* (a Tonga Island)
oöao	oöau TOO-AU-HOOCHTwana people	oöëa* ZOÖEAL ch
oöëë* COÖEE*	oöëï ZOÖEIDES ch	oöëö MEZOÖEON (Syria)
oöëü WATTSOÖEUE	oöiä* CALAPOÖIAS Hodge	oöië* BLOÖIE (coöie)
oöiï VOLTOÖIING(completion Dutch)	oöiö DOÖIO (Mozambique)	oöiü GOÖIUM (Netherlands)
oööa OÖOOPS (oops)	oööë COÖ-ÖÖ-EE	oööï KUNDÖÖ-OIL (coönda-oil)
oööö* KÖÖKKÖÖÖÖSE Hodge	oööü	oöuä BROÖUAGE(sheep-grazing)
oöüë* BEHÖÖUE (behöve)	oöüï COÖUI (cövey)	oöüö* ÖÜÖ-ÖÜÖ* (in New Hebrides)
oöüö TIOUÖÖÜORT (Mali)	ouäa* AOÜAA* cad	ouäë* EUÖÜAE* (a trope)
ouai* COUAITE (covet)	ouäö* ZOÜAÜA* (Morocco)	ouäu* ÖÜAÜA* (rainy) haw
ouëa* AIOÜEA* (a laurel)	ouëë YÖÜEE (Aus.slang-U-tum)	ouëï* COÜEISM (Emile Coué)
ouëö ADMÖÜEO (to move to)	ouëü SEÖÜEÜALD(sevenfold)	ouia* BEDÜÜIA (bedouin)
ouïë* BEÖÜIEN (bive)	ouïï* LOÜIINDE*(see charitable 1340)	ouio* GRIOÜIÜÜ* (Morocco)
ouiu IOÜIÜS (a name)	ouöa PROÜÖAK'D (provoked)	ouöë ADÖÜÖE (Gabon)
ouoi POÜÖIR (power)	ouöö* PROÜÖÖST (prepost)	ouöü* COÜÖUR (cover)
ouuä STÖÜÜAGE (stowage)	ouüë* COÜÜERTE* (covert)	ouüï* COÜÜIENALES (quienals)
ouüö TROÜÜÖIT(see strange a1585)	ouüü	

VTs accounted for:	114	(to date* 43; new 71)
VTs not accounted for:	11	
total	125	

Table 5. Vowel Tetragrams beginning with the letter U

uaaa		uaae	JOUAAED (Syria)	uiai	QUAAIL (see qualtagh)
uaao	BOUAAOUAM (Algeria)	uaau*	AQUAAUCHUQUES Hodge	uaea*	XUAEAUX* p
uaee		uaei*	IUA EIN (to hate)	uaeo	AQUAE-OLEOUS
uae u	ATHEUAEUM(see scops 1887)	uaia*	GUA IAC* (a gum) st	uaie*	KHOUA IEM (Morocco)
uaii	KUAIIRNANG Hodge	uaio*	GUA IOCUM pull	uaiu*	QUAIUTL (tree)
uaoa*	UAOA* (mist) haw	uaoe		uaoi	MORRHUA-OIL(cod-liver oil)
uaoo		uaou*	PURUAOUR (purveyor)	uaua*	UAUANA (Fiji: muscular)
uaue	QUAUE (quave)	uau i*	QUAU IE (quavy)	uauo*	QU'AUOIT (see perceive v.)
uauu		ueaa	BUSGUEAA (W.Sahara)	ueae*	OIOUEAE* (type of trope)
ueai	KAUEAI (Fr. Polynesia)	ueao	GUEAO (Vietnam)	ueau*	QUEAUE (quave)
ueea	QUEEAKAHS Hodge	ueee	QUEEEN (Cuba)	ueei	LUUE~EIE (love)
ueeo		ueeu		ueia	BOSQUEIA nz
ueie	TUEIE (two)	ueii*	EGUEIITE*(type of phosphate)	ueio*	CADIUEIOS (Indian tribe)
ueiu	ERGUEIUA (Mauritania)	ueoa	BOGUEOA(Ivory Coast)	ueoe	QUEOEL (Guinea-Bissau)
ueoi*	UEOIR(see posterority c1513)	ueoo		ueou*	AQUEOUS*
ueua	ZEUEUELD (sevenfold)	ueue*	QUEUE*	ueui*	QUEUING*
ueuo	EQUEUOLENT(equivalent)	ueuu		uiaa*	KHRIOUIAA* (Morocco)
uia e*	EQUIAEVAL (equaeval)	ui ai	MATAJUAI Hodge	ui ao	PIQUIA-OIL (a fruit oil)
ui au	GUIAVAS (guava)	ui ea	QUIEALA (Angola)	ui ee	AQUIEERONONS Hodge
ui ei*	CHOUIEIA* (Morocco)	ui eo	GUIEOR (guyour)	ui eu*	JUIEU (Jew)
ui ia	TUIIA (twie)	ui ie	FOUIIETZINI (Morocco)	uiii	
ui io	ASIAPUQUIIO (Peru)	uiiu	KURUIIU (Nigeria)	ui oa	QUIOA (Angola)
ui oe	SILUIOES(see step v.1602)	ui oi	ABENAQUIOIS Hodge	ui oo	
ui ou*	DEUIOUS (devious)	ui ua	EQUIUALENT (equivalent)	ui ue	QUIUER (quiver)
ui ui*	UIUI* (to appeal) haw	ui uo*	REUIUOR (revivor)	ui uu	SEMPERUIUUM (a plant)
uo aa		uo ae	SUOAE (so)	uo ai	GOYOGUOAIN
uo ao		uo au*	VISUO-AUDITORY*	uo ea	
uo ee		uo ei	HUOEI (Laos)	uo eo*	AUOE OUDIA* bae
uo eu	UOEU (Micronesia)	uo ia*	SEQUOIA*	uo ie	COWNUOIE (convoy)
uo ii		uo io	AQUO-ION(hydrated ion) st	uo iu	UOIUOD (viovode)
uo oa		uo oe		uo oi	
uo oo		uo ou*	OUO-OUO*(New Hebrides)	uo ua*	ESQUOUADE (squad)
uo ue*	DEUOUED (devoved)	uo ui*	DEUOUIR (devour)	uo uo*	OUO UO(no stinting) haw
uo uo*	TAZOUOUOUARHT (Morocco)	uu aa		uu ae	GLIUUAE (glee)
uu ai	BEAUUAIS (location)	uu ao	SAUNCKSQUUAOG(see sunck)	uu au	CUUAUNT (covenant)
uu ea	NOUUEAU (new)	uu ee	LUUE~EIE (love)	uu ei	CUUEITEN (covet)
uu eo	UUEOSULE (weasel)	uu eu	SAUUEUR (savour)	uu ia	FLUUIATILE (species name)
uu ie*	BUUIEN (bive)	uu ii*	TUUII*(New Zealand bird)	uu io	TUUIO (twie)
uu iu*	UIIURTHIT (worth)	uu oa	NACHITATSUOACHO (Japan)	uu oe*	SUUEOELES(swaddles)
uu oi	TROUUIOIT (found)	uu oo*	PUUOO* (place in Hawaii)	uu ou	UUOU (vow)
uu ua		uu ue		uu ui	
uu uo		uuuu*	OAKFUUUUSKEE Hodge		

VTs accounted for: 100 (to date* 42; new 58)

VTs not accounted for: 25

total 125

SPECIAL WORDS

Some words contain an unbroken group of more than 4 vowels. A string of 5 or more vowels embodies more than one VT. These VTs may be overlapping, contiguous or discrete. With the exception of MIAOUIING, all the special words listed below come from one of two sources. They are either words taken from Hodge's *Handbook of American Indians*, or locations taken from The United States Board on Geographic Names (BGN). In the latter case, **pp** = populated place.

Overlapping Tetragrams

Words with a vowel pentagram (MIAOUIING) have 2 overlapping VTs (IAOU/AOUI); words with a vowel hexagram (ZOUAOUA* pp Morocco) 3 overlapping VTs (OUAO/UAOU/AOUA); words with a vowel heptagram (Es ZOUAOUINE pp Morocco) have 4 overlapping VTs (OUAO/UAOU/AOUI/OUII); and words with a vowel octagram (IJOUAOUOUENE - pp Morocco) have 5 overlapping VTs (OUAO/UAOU/AOUO/OUOU/UOUE).

Contiguous Tetragrams

These are found only in words with an unbroken group of at least 8 vowels (5 overlapping VTs).

Hodge: OUEPERIGOUEIAOUEK (an Algonquian tribe)

Locations: IJOUAOUOUENE (pp), El HAOUAOUIA (an area), and OUAOUIOUST* (hill) are all in Morocco. ISSOUOUAOUAR is a mesa in Niger. In AGUINAOUIAOUI (pp Mali), the 2 VTs are identical and end the word as a tautonymic sequence.

Discrete Tetragrams

In these words, the 2 vowel tetragrams are separated by at least one consonant.

Hodge: NEGAOUICHIRINIOUEK (probably a part of the Ottawa tribe);

PAOUITIKOUNGRAENTAOUAK (= Pawating); and AOUNOUEA (= Iowa).

Locations: TIOUERDIOUINE (pp Morocco); SIOUMOUOUSSI (pp Burkina Faso);

HAOUIRIOUIRAT (dune) and TIOUALAOUALENE (ridge) are both in Mali; SOUAIGOUIA (well in Mauritania). In TIOUIDIOUINE (pp Algeria), and SIZAOUAGZAOUAGANE (well in Niger), the 2 VTs are identical in each case.

Investigating further, we find words which contain 2 discrete unbroken groups of vowels, at least one of which is longer than 4 letters:

Hodge: AOUENTSIOUAERON (= Winnebago) has a vowel tetragram and a vowel pentagram; OUAOUENCHKAIRINIOUEK (= Weskarini) and PAUOITIGOUEIEUHAK (= Chippewa) each have a vowel tetragram and a vowel hexagram.

AOUEATSIOUAENHRONONS (= Winnebago) has 2 vowel pentagrams.

Locations: Assif n' QUAOURGUIOUA (wadi in Morocco) has a vowel tetragram and a vowel pentagram.

Finally, we return to overlapping tetragrams and 2 very special words. Both have unbroken runs of 9 vowels (albeit one of the words is hyphenated), so each provides 6 overlapping VTs:

Hodge: OUPERIGOUE-OUAOUAKHI (OUEO/UEOU/EOUA/OUAO/UAOU/AOUA) is an Algonquian tribe.

Location: CAUAIAUAIA (AUAI/UAIA/AIAU/IAUA/AUAI/UAIA) is in Angola.

As far as I am aware, this is the first appearance in Word Ways of a word with an unbroken run of 9 vowels.

SOURCES OF NON-OED WORDS

aig	Agricultural Insects of Ghana, compiled by John Forsyth, Ghana University Press 1966
bae	The Bulletin of the Amateur Entomological Society, August 1978
cad	An Archaic Dictionary by W.R. Cooper, 1876
ch	Chambers English Dictionary
dfpf	A Dictionary of the Flowering Plants and Ferns, 7th edition by J.C. Willis, C.U.P. 1968
dor	Dorland's Medical Dictionary
edd	English Dialect Dictionary
edfc	Everymans Dictionary of Fictional Characters by William Freeman, J.M. Dent 1973
f+w	Funk and Wagnall
haw	A Dictionary of the Hawaiian Language by Lorrin Andrews, Charles E. Tuttle 1974 Also <i>All Vowel Hawaiian Words</i> by Prince Djoli Kansil, WW74098
Hodge	Handbook of American Indians, edited by F.W. Hodge, 1907
nz	Nomenclator Zoologicus
oopc	Outline of Plant Classification by Sandra Holmes
ospd	Official Scrabble Players' Dictionary
p	Palindromicon by Jeff Grant
pull	The Complete Word Game Dictionary by T. Pulliam and G. Carruth, 1984
rh	Random House Dictionary
st	Stedman's Medical Dictionary
w2	Webster's Second Edition

Locations are taken from The United States Board on Geographic Names (BGN).

SPHINX HIJINKS: PUZZLES AND WORD PLAY

From 1981 to 1986, Mitzi Christiansen Kuehl published a monthly column, Sphinx Winks, in *Integra*, the journal of the High-IQ Society. Much of her wordplay material has been assembled in a privately-printed 183-page spiral-bound book with the above title.

This fun book, a mixture of puzzles and essays, covers an extremely wide range of topics, from the classics such as anagrams, palindromes, lipograms, charades and pangrams, to more specialized ones such as mnemonics, figures of speech, license plate language (IM LATE on a white Rabbit), shop names (Just Desserts, a confectioner), malapropisms, Tom Swifties ('I'll take the prisoner downstairs', said Tom condescendingly), and titles in search of authors (*The Art of Hitchhiking* by Nita Ryde). There's even a Word Ways contribution, Hermans ("These new eyeglasses are great," said Seymour).

For US orders, send \$23 to Mitzi Kuehl, 132 Glen Oaks Drive, Bakersfield CA 93309-2556, which includes the price of mailing.