SETS OF WORDS WITH ALPHABETIC PROGRESSION

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This article responds to the challenge posed by Susan Thorpe on page 212 of the August 2001 issue of Word Ways. We seek a word that still produces valid words when the first letter is replaced by A, and when the second letter is replaced by B, etc. However, much of this article is taken up with two generalisations. The first is to examine other word lengths. In the second, we depart from the concept of invariance, in which the position of a letter in the word is the same as its position in the alphabet, and merely require that successive positions in the words be occupied by successive letters of the alphabet. All words are in the OED or Webster 2, except those marked Ch (Chambers), EDD (English Dialect Dictionary), Lo (Longman), OSPD (Official Scrabble Players Dictionary), Pull (Pulliam). Pname = personal name, and vf = OED variant form.

4-letter words

Firstly, I respond directly to her challenge:

ABCD:	ORAS	ARAS, OBAS, ORCS, ORAD
	ORES	ARES, OBES, ORCS, ORED (Susan Thorpe example)
	OWLE (vf)	AWLE, OBLE, OWCE (vf), OWLD
	SPAC (vf)	APAC (phrase?), SBAC, SPCC (acronym), SPAD
	USEL	ASEL, UBEL (German übel, whence evil), USCL (United Society for Christian Literature), USED

Next, I looked for similar sets of words, but with BCDE, CDEF, etc. in place of ABCD. The numbers of examples found (notice the zero counts!) were A 5, B 37, C 11, D 157, E 8, F 1, G 3, H 26, I 1, J 28, K 77, L 9, M 37, N 5, O 0, P 2, Q 16, R 16, S 1, T 39, U 0, V 31, W(XYZ) 1.

Tackling the difficult ones first (which will yield some awkward answers):

FGHI:	WELY	FELY (vf), WGLY (vf), WEHY, WELI (Pull)
GHIJ:	CLUB	GLUB, CHUB, CLIB, CLUJ (Web3)
	CLUM (Pull)	GLUM, CHUM, CLIM, CLUJ (Web3)
	CLUT (vf)	GLUT, CHUT, CLIT, CLUJ (Web3)
IJKL:	ASEE	I SEE, AJEE, ASKE, ASEL
PQRS:	SAAT (vf)	PAAT (vf), SQAT (vf), SART, SAAS (EDD)
	SEAT	PEAT, SQAT (vf), SERT, SEAS
WXYZ:	ONES	WNES, OXES (OSPD), ONYS, ONEZ

Now a small selection from the ones with most answers:

DEFG:	BANT	DANT, BENT, BAFT, BANG
	GIRT	DIRT, GERT (vf = great, or pname), GIFT, GIRG
	GONE	DONE, GENE, GOFE, GONG
	HANT	DANT, HENT, HAFT, HANG
	KANT	DANT, KENT (whale blubber), KAFT (Swedish, whence chaft), KANG

LANE	DANE, LENE, LAFE (Pull), LANG
LINE	DINE, LENE, LIFE, LING
LINT	DINT, LENT, LIFT, LING
LONE	DONE, LENE, LOFE, LONG
RINE	DINE, RENE (= furrow or pname), RIFE, RING
SANE	DANE, SENE, SAFE, SANG
SINE	DINE, SENE, SIFE (Pull), SING
SONT	DON'T, SENT, SOFT, SONG
TINT	DINT, TENT, TIFT, TING
WANT	DANT, WENT, WAFT, WANG
WART	DART, WERT, WAFT, WARG
WINE	DINE, WENE, WIFE, WING
WONT	DON'T, WENT, WOFT, WONG (antonym of wight?)
KLMN: ARAS	KRAS, ALAS, ARMS, ARAN (adj)
COOP	KOOP (Pull), CLOP, COMP, COON
GAIE	KAIE, GLIE, GAME, GAIN
POOP	KOOP (Pull), PLOP, POMP, POON

Finally, some examples with other alphabetic sequences having some everyday words:

HIJK: MANA	HANA (Old English, a cock), MINA, MAJA, MANK
MARO	HARO, MIRO, MAJO, MARK
PUNA	HUNA (in Highlands), PINA, PUJA, PUNK
RACE	HACE, RICE, RAJE, RACK
JKLM: SEAT	JEAT, SKAT, SELT, SEAM
LMNO: SAIT	LAIT, SMIT, SANT, SAIO (vf)
MNOP: SEED	MEED, SNED, SEOD, SEEP
QRST: CATS	QATS, CRTS (CRTs), CASS, CATT (vf)
RSTU: TAPS	RAPS, TSPS (teaspoonsful), TATS, TAPU
TUVW: BARE	TARE, BURE, BAVE (Pull), BARW (vf)
DEES	TEES, DUES, DEVS (OSPD), DEEW (vf)
REES	TEES, RUES, REVS, REEW (vf)
WIDE	TIDE, WUDE, WIVE, WIDW
VWXY: PINT	VINT, PWNT, PIXT (vf), PINY

5-letter words

Examples here are much scarcer, and use mainly obsolete words; there are single examples for BCDEF and HIJKL, and five for DEFGH:

BCDEF: SARIE	BARIE, SCRIE, SADIE (pname), SAREE, SARIF
HIJKL: MARAS	HARAS (Pull), MIRAS (Lo), MAJAS, MARKS, MARAL
DEFGH: BARTE (Ch)	DARTE (vf), BERTE, BAFTE (vf), BARGE, BARTH
LINTE (vf)	DINTE (vf), LENTE (vf), LIFTE (vf), LINGE, LINTH (vf)
LOUTE (vf)	DOUTE (vf), LEUTE (vf), LOFTE (vf), LOUGE (vf), LOUTH (in Lincolnshire)
LYNTE (vf)	DYNTE, LENTE, LYFTE, LYNGE, LYNTH (all vf)
SIETE (vf)	DIETE (vf), SEETE, SIFTE (vf), SIEGE, SIETH

6-letter words

Even the fifth of the six words could not be found.