To my mind, an ideal hardcore logology project should satisfy two conditions: (1) it should be hard enough to force the investigator out of the cozy Webster's Second Unabridged (NI2) and Third Unabridged (NI3) nook, and (2) it should promise complete success -- every last hole filled -- with persistence. An excellent example is the problem of finding words beginning with each of the 676 possible two-letter combinations, or bigrams. This problem is covered in the section "Zero Redundancy" (ZR) in Dmitri Borgmann's Beyond Language (Scribner's, 1967). Unfortunately, while Dmitri claimed words for 629 of the combinations, he listed only 547 of them (of which I reject BX CG DC DL DT FQ LQ LR QC QN UO WG YX for various reasons), and has no record left of most of the remainder.

A problem like this demands open sources. Still, some restrictions are desirable; one must rule out radio station names, for example, and other unwordlike forms such as trademarks (XKE) and Q-signals (QRM). Abbreviations are out, though I grudgingly accept those marked '0' or 'abbr or n' in NI3. I also accept coined words and names if I can get nothing better. But whal nagl was coined as a foreign word, and is therefore out.

Foreign words are out, but I consider all foreign names to be English words. Transliterations in italics are a problem; I have put in certain Ugaritic names, such as pqr, because some such (like PbI) appeared in text unitalicized and capitalized as normal English words -- it seems only chance that pqr and others did not so appear. Even in foreign words, only English letters are acceptable; thus, words such as D'et-tu or 'Tinné are out. However, I accept several words in Dmitri's list in which the letters L or Q are written in small caps.

Systematic aberrant spellings, such as bxr in Poe's 'X-ing a Paragrab' or fghfr (a phonetic variant of 'father'), I reject. Similarly, I disallow words that are acknowledged as misspellings in the original sources (Un-a-kan, Yxcaguayo, Qnicapous). But medieval spellings using 'v' for 'u' seem quite acceptable, if attested in the Oxford English Dictionary (OED) or elsewhere.

I have made a good deal of progress on the 142 missing combinations, with help from Darryl Francis and Dmitri Borgmann, but the task is beyond three people's serendipity. I am therefore making a plea to the Word Ways readership to be on the lookout for additions to

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the list. Send them to the editor or the author (726 Golf Course Road, Aliquippa, Penna. 15001). When enough are in, a report will appear in Word Ways.

Short definitions have been given for all terms except those in NI2 and NI3. Abbreviations for sources are explained in the bibliography, at the end of a companion article on final bigrams to appear in a later issue. In addition, three other frequent abbreviations are used. 'NI3*' means that the term appears in NI3, but is marked 'abbr or n'. 'ppl' means 'populated place'. 'TD' means 'telephone directory'.

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BB: Bbec = pseudonym of Clarence F. Cobb on The Vision of Judgement Revived (NUC)
BC: BCG vaccine (NI3); Bykko = Ukrainian immigrant name (Names 11,4:244)
BF: Bberre = place in Denmark (TIG)
BM: BM (NI3); Bmaryam = ppl (OSN Lebanon)
BQ: Bqusha = ppl (OSN Lebanon)
BX: BX (NI3*); BX = central information repository (MFL)
CD: Ra's al Ghass = Ra's al Khabash = point (OSN Libya)
CF: Cfir = ppl (OSN Albania)
CG: CJ: Cjadri = Cadiri = ppl (OSN Albania); A. Cjantarute = A. Cantar-utii = authoress (NUC)
CM: Cmir = mountain (OSN Yugoslavia); H. E. Cmejla = apiarist (NUC)
CX: A. Cxadadze = Russian linguist (CTL 1, p.36); Cxinvali = Russian town (OSN Libya)
DC: DCL (NI3*); Dchira = ppl (OSN Morocco)
DD: DDT (NI3); Ddmashen = ppl (OSN Morocco)
DF: DFDT (NI3); Dführen = ppl (OSN Lebanon)
DL: Dlo (also D'Lo) = Mississippi town (The Columbia-Lippincott Gazetteer of the World (Columbia U. Press, 1952))
DP: DPH (NI3*); Dpang = Tibetan person (GOT)
DQ: Dqun = ppl (OSN Lebanon)
DT: DT's (NI3); Dtem = Libya town (TIG)
DX: DX (NI3*); Dxar Charf = Charf = ppl (OSN Morocco)
FF: FFI (NI3); fb = particularly dubious word in FW, p.124, line 7: Fibly'ex = place in 'Origins of Galactic Fruit Salad', non-fact article by Edward Wellen (Galaxy, Feb.1962)
FC: FC station (NI3); Fchun = stream (OSN USSR)
FD: FD&C color (NI3); Fdyushkino = Fedyunkino (OSN USSR)
FK: Fkibhen-Salah = Morocco town (RMIA)
FM: fmz = slang for 'fan magazines' (Fancyyclopedia II, R. Eney, privately printed 1959); FMZ Digest = fan magazine of A. L. Joquel III (FI)
FP: FQ: Fahiriya = Fahriya = hill (OSN Lebanon)
FR: Fverst = surname (1967 London TD)
FX: FX station (NI3); Fx = person (MFL)
FZ: Fazer = Fadzi Fuzayr = wadi (OSN Libya)
GK: Tinghi Cikka = Greek writer (NUC)
GS: Gschnitz stage (NI2); gs (NI3)
GT: Gtafia =
GX: Goul =
HB: Hbata =
HC: HeYian Shuha =
HD: Hdimik =
HF: Hfd =
HG: Hgrasa =
HK: Hkta =
HQ: Habb el H =
HX: H =
HZ: Hzain =
JC: JCD (NI)
JD: JD (NI)
JF: Jfleann (NUC)
JG: Jg (NI3)
JK: Jkhi =
Jkeda =
JM: Jmoud =
JP: Jp (NI3)
JJ: Jj =
JR: Jrijat =
JT: K. Jtalat =
JV: Jvegar =
JW: Jwalap =
JX: Jxxx =
JY: Jy =
JZ: Jz =
KB: Kbel =
KZ: Ksiba =
LF: Lfaran =
LM: Lmhar =
LP: LG =
LQ: Lquele =
LR: Lehabit =
LS: Ls (NI)
LZ: Lzna =
MQ: Mqabb =
MX: Mr. Mvic School =
NF: Nhii =
NM: Nmai =
PJ: pj'a =
GT: Gtafia = ruin (TIG, OSN Libya)
GX: Gxulu = river in S. Africa (TIG)
HB: Fb háta = Habatta = ppl (OSN Morocco)
HC: Hc Yiani = surname (1972 London TD); Af n el Hchaira = 'Ayn ash Shuhayri = spring (OSN Lebanon)
HD: Hdimikipiaj = ppl (TIG, OSN Tanzania)
HF: Hfr’d = Douar Havid = ppl (OSN Morocco)
HG: Hgrusa = surname in 1960 Chicago TD (Beyond Language, p. 177)
HK: Hka-U = place in Burma (TIG)
HQ: Hqâb el Qach = Hqiab al Qashsh = cliff (OSN Lebanon)
H: Hzaiâne = Hzayrân (OSN Syria); V. Z. Hzhit’sky = novelist (BMGC)
JC: JCD (NI3*); Ichatsch Berg = Gora Tkach = mountain (OSN USSR)
JD: JD (NI3*); Jdiouia = Morocco town (RMIA)
JF: Jflaender = form of surname of Lore Iflaender, Breslau student (NUC); Bfr Jfeifa = Bi’r Jufayfah = well (OSN Syria)
JG: Jg (NI3*); Jgor = Igor = lake (OSN USSR)
JK: Jkh Khoshu Khure = Yihe Hushuu Huryee = ppl (OSN Mongolia); Jkeda = form of surname of Etsujiru Ikeda (NUC)
JM: Jmoud (NI2)
JP: Jp; Jphise = cantata supposedly by Charles Blainville (NUC)
JQ: Jrafit = ppl (OSN USSR)
JT: K. Jtaliener = engineer (BMGC)
JV: Jvegar = 'sea urchin' (EDD); Jvarksi = surname (1972 Chicago TD)
JW: Jwaltiap = place in India (TIG); Jwe = 'Jew' (OED)
JX: Jxx = purported surname of an ex-constable in Harly, Dept. of Aisne, France, reported in France-Soir, 6 Feb 1968; quoted in Word Ways, February 1969 p. 52
JZ: Jzhidka = Zhidka = ppl (OSN USSR)
KB: Kbel = place in Czechoslovakia (TIG)
KZ: Kziba = place in Uganda (TIG)
LF: Lfararaâ = El Ferarâa = ppl (OSN Lebanon)
LM: Lmharba = ppl (OSN Morocco)
LP: LP gas (NI3); LP (NI3); Lpusha = Lepushé = ppl (OSN Albania)
LR: Lrhabt = mountain (OSN Syria)
LS: Is (NI3)
LZ: Lzna = stream (OSN USSR)
M: Mqabba = ppl (TIG, OSN Malta)
MX: Mr. Mxystplk = well-known character in Superman comics; Arajvir Mxst’arean = Armenian translator (Library Catalogue of the School of Oriental and African Studies, U. of London (Boston, G. K. Hall, 1963))
NF: Nfehi = ppl (OSN Morocco)
NM: Nmai Hka = river in Burma (TIG)
PB: PBX (NI3); Pbl = king's name (UM)
PG: Pchela = ppl (OSN USSR)
Pd: pdq (NI3); Peace = Podgaytsy = ppl (OSN USSR)
PG: Pg Wyal = science fiction author (Index to the Science Fiction Magazines 1966-70 (New England Science Fiction Association, 1971))
P: Pj’s (NI3); Pjana = river (TIG, OSN USSR)
Here is a table of capitals in something that something a

Ex, CG, Qg, Qj,
WP: wp = 'up' (OED)
WT: wtouth = 'outwith' or 'outof' (NI1, OED)
WX: Wxwindon = Uxendon = a farm (Place Names of Middlesex, English Place Name Society, v.18, p.54)
WZ: Francesco Wzzino = Maltese translator (BMGC)
XC: Xcan = ppl (TIG, OSN Mexico)
XD: XF: Mr. Xzpzjt = character named in 21 Feb 1934 Popeye comic strip
XJ: Xjimenez = surname (1973-4 Nassau County N.Y. TD)
XX: Xkalak = ppl (RMIA, OSN Mexico)
XN: Xnail = ppl (OSN Mexico)
XS: Xstmas = 'Christmas' (OED); xs (NI3)
XY: XvarSi = Caucasian language (CTL 1, p.316)
XZ: Xzyit = surname (1973 San Francisco TD); Amrner Xz = person in 'Circle of Flies', short story by M. Hatt (Galaxy, Sep. 1973)
YD: Ydgrun (NI2); yday (NI2)
YK: ykid = 'made known' (OED); Yksnoy = Norwegian island (TIG)
YW: ywis (NI2)
YY:
X: ZB: Zboj = ppl in Czechoslovakia (TIG)
ZC: Zchenis-Zkali = Tkhenis-Tskali = stream (OSN USSR); J. C. Zchav = author of a 1666 book (BMGC)
ZK: Zkaby = Zhaby = well (OSN USSR)
ZM: Zmudz (NI2)
ZP: Zapider = new chess piece (Fairy Chess Review 11:80, Aug. 1932)
ZQ: Zqab el Qoubab = Zuqâq al Qâbb = cultivated area (OSN Lebanon)
ZX: Zu Zx = pseudonym of S. H. C. Beyer (BMGC)

Here is a list of the bigrams for which words are still needed. Double capitals indicate that nothing has been found, a single capital that something has been found but it is highly objectionable, and lower case that something acceptable has been found but, for whatever reason, something a little better would be welcome:

Bx, CG, fb, Fm, FP, fx, fc, hg, hX, JQ, Jx, Pm, Pq, Px, Qg, Qj, QK, qP, QV, wq, Wq, XD, Xi, Xj, xz, zp

The analogous problem of finding words ending in all 676 bigrams will be discussed in a subsequent article.