HETEROGRAMS AND THEIR ALPHOMES

SUSAN THORPE
Great Missenden, Buckinghamshire, England

For the benefit of new readers, allow me to explain the terms heterogram and alphome. Heterogram is my preferred term for isogram, a word such as AMBIDEXTROUS in which no letter is repeated. In "Alphomes" in the November 1995 Word Ways, I defined an alphome as follows: a set of alphabetically-ordered letters of which at least one arrangement is a word. Thus the alphome ABINR makes the word BRAIN.

Heterograms can be classified according to the alphabetical content of their alphomes:

1. Those whose alphomes are made exclusively of alphabetically-isolated letters. The alphome of CARPET can be written A+C+E+P+R+T.
2. Those whose alphomes consist of both alphabetically-isolated letters and alphabetically-consecutive letter groups. MOCKED = CDE+K+M+O.
3. Those whose alphomes consist of two or more alphabetically-consecutive letter groups and no isolated letters. MOUTHING = GHI+MNO+TU.
4. Those whose alphomes consist of a single group of alphabetically-consecutive letters. BACED = ABCDE, STRUV = RSTUV.

In the August 1983 Kickshaws, Eugene Ulrich called words of type 1 non-vicinals and words of type 3 and 4, vicinals. (In fact, his definition also applied to words having repeated letters, like POST = OP+ST.)

It is type 3 words with which we are currently concerned. The headings to each list in the following pages indicate (a) the number of alphabetically-consecutive letter groups in the alphome and (b) the size of the letter groups in ascending order irrespective of the order in which they occur in the alphome. Thus SCORNED, whose alphome CDE+NO+RS consists of groups of 3, 2 and 2 letters respectively, appears under the heading 2+2+3. A few phrases are included. Pluralised place names indicate that more than one place of that particular name was found.

2+2

ab+de ABED bc+no BONC de+st TEDS gh+no HONG ij+no JOIN no+uv VOUN
ab+ef BEAF cd+hi CHID de+tu DUET gh+op POGH ij+st JIST no+xy ONYX
ab+hi BAHI cd+no COND de+uv DUVE gh+tu THUG jk+no JONK no+yz NOYZ
ab+ij BIJA cd+tu DUCT de+yz YZED gh+uv VUGH kl+no LONK op+rs ROSP
ab+kl BALK de+gh DEGH ef+hi HEIF hi+mn MINH kl+op POLK op+st POST
ab+lm LAMB de+hi HIDE ef+kl KELF hi+no INOH kl+tu TULK op+tu POUT
ab+no OBAN de+kl KELD ef+lm FLEM hi+op IPOH lm+op PLOM op+xy POXY
ab+rs BARS de+lm MELD ef+no FONE hi+rs SHIR lm+tu MULT op+yz ZOPY
ab+st STAB de+mn MEND ef+rs SERF hi+st THIS mn+tu MUNT st+xy XYST
ab+tu TUBA de+no NODE ef+st FEST hi+tu HUIT no+rs NORS tu+xy TUYX
ab+yz BAYZ de+op DOPE ef+tu FUTE ij+lm MIJL no+st TONS
bc+hi BICH de+rs REDS fg+no FONG ij+mn MIJN no+tu UNTO

2+3

abc+hi CHIBA cde+op COPED de+tuv DUVET ijk+rs JIRKS nop+st PONTS
abc+kl BLACK cde+rs SCRED efg+lm FLEGM ijk+st KJTS nop+tu UNPOT
abc+lm CLAMB cde+tu EDUC TUFG ij+rst JIRTS no+rst SNORT
abc+no BACON cd+stu DUCTS efg+rs GREFS klm+op KLOMP no+stu SNOT
abc+op BACPON def+no FEOND ef+rst FRETS kl+nop PLONK no+uvw UNVOW
abc+rs CRABS def+rS DERFS ef+stu FUSTE kl+stu TULK no+wxy XOWYN
abc+ghi HIGHA def+tu FUTED ghi+rs HONGI lm+stu SMULT op+rst SPORT
abc+hai HAJIB cd+ghi DICHGE ghi+rs SHRIG mno+rs MORSN nop+stu SPOUT
abc+mn AMBON de+ijk JIKED ghi+st SIGHT mno+st MONT no+xyz ZYXST
abc+rst BRATS de+mn MENO DEMON gh+stu THUGS mno+tu MOUNT
abc+su TUBAS de+nop PEDON hi+qrs QIRSH mno+uv NOVUM
Cde+hil CHIDE de+rS STRED hi+rSt HIRST mn+st MUNTS
Cde+no CONED de+stu DUETS hi+stu SUITH nop+rs SPORN

2+4

abcd+tu ABDUCT cdef+no CONFED de+tuv DUVETS fg+rstU GRUFTS lmn+tu MULTON
abc+lno BLAMON de+lmno DOLMEN ehgf+st FEGHTS gh+rstU GURTHS no+rstu UNSORT
abc+rst ABUST de+mnop DOMPNE ef+rstu FUSTER hi+rstU TRUUS op+rstu STUPOR
bcd+hi BICHED de+rstu RUDEST fgghi+st FIGHTS ij+rstU JURIST

2+5

2+6

abc+kl BLACKED abcde+st CAT-BEDS abcdef+no BACON-FED
abc+lm CLAMBED de+rstuv STURVED
abc+no BEAN-COD ef+klmn MenFOLK
abc+rs SCABERD

3+3

abc+rst BRACTS def+stu DEFEET ghi+rSt RIGHTS
abc+stu SUBACT efg+mnno FOGMEN hij+rSt THRLIS
Cde+ghi CHIGED efg+rst GREFTS hij+stu JUTISI
Cde+mnO COMEND fggh+st FUGHTS klm+stu KLMIST
Cde+nop PONCED ghi+mnno HOMING mn+st MOUTS
Cde+stu EUCDS ghi+nop HOPING nop+st USPOT

3+4

3+4

abcd+stu ABDUCTS
abc+rst CRABATS
cde+mnop COMPEIND
Cde+rst CRUDEST

def+rstu DUFTERS
fgghi+rst FIGHTS
fgghi+stu FISH-GUT
ghi+rst THURGIS
mno+rstu NOSTRUM
nop+rstu SPROUNT
| abc+de+hi  | HABIDE       | BAJRIS     | de+hi+st | DEHIST   | ef+no+st | SOFTEN    |
| abc+de+kl  | BALKED      | APLOMB     | de+ij+no | JOINED   | ef+no+tu | FOUNTEN   |
| abc+de+lm  | AMBLED      | NUMBAT     | de+kl+op | POLKED   | ef+op+rs | FOSPER    |
| abc+de+mn  | BEDAMN      | BARONS     | de+mn+op | PENDOM   | gh+no+st | THONGS    |
| abc+de+rs  | BEARDS      | BATONS     | de+no+rs | DRONES   | gh+no+tu | NOUGHT    |
| abc+de+st  | BASTED      | UNBOAT     | de+no+st | OSTEND   | gh+op+yz | PHYZOG    |
| abc+de+tu  | TABUED      | ABSORP     | de+no+tu | DEUTON   | hi+kl+st | KHLIST    |
| abc+ef+lm  | FLAMBE      | PAYBOX     | de+no+uv | VOUNDE   | hi+no+rs | RHINOS    |
| abc+ef+rs  | FABERS      | PHOBIC     | de+no+yz | DOZYNE   | hi+no+st | SHINTO    |
| abc+ef+st  | BEFAST      | PHOCID     | de+op+rs | PROSED   | hi+no+tu | INOUTH    |
| abc+gh+no  | BONAGH      | DICHTS     | de+op+st | DESPOT   | hi+op+rs | ROPISH    |
| abc+gh+tu  | HAGBUT      | CONDUT     | de+op+tu | POUDED   | hi+op+st | PITHOS    |
| abc+hi+kl  | KIBLAH      | HODGEN     | de+op+uv | UPDOVE   | ij+no+st | JOINTS    |
| abc+hi+op  | PHOBIA      | DOG-HEP    | ef+hi+rs | FISHER   | kl+no+yz | ZYKLON    |
| abc+hi+rs  | BARISH      | MILEDH     | ef+hi+st | FETISH   | no+st+xy | XYSTON    |
| abc+hi+st  | HABITS      | HONIED     | ef+kl+rs | FLEURS   |            |           |
| abc+ij+mn  | JIBMAN      | DISHER     | ef+no+rs | FREONS   |            |           |

| abc+ef+rs  | BESCARF     | JUVABIT    | def+hi+rs | RED-FISH | de+op+st+ru | SPOUTED |
| abc+hi+op  | PHOBIC      | ALMS-TUB   | def+hi+st | SHIFTED  | de+rst+yz  | DYZERTS |
| abc+hi+st  | BICHATS     | NUMBATS    | def+ij+rs | DRIFIES  | ef+hi+rst  | SHIFTER |
| abc+ij+no  | JACOBIN     | BARTONS    | def+no+st | FONDEST  | ef+lm+stu  | MESTFUL |
| abc+kl+no  | NABLOCK     | OUTBANS    | de+gh+st | SIGHTED  | ef+mno+rs  | ENFORMS |
| abc+kl+tu  | BLU-TACK    | BARPOST    | de+gh+tu | DUGHTE   | ef+mno+st  | FOMENTS |
| abc+no+rs  | CARBONS     | COBNUTS    | de+hi+nop | DIPHONE  | ef+op+rst  | FORPETS |
| abc+def+st | BEDFAST     | MELCHED    | de+hi+rst | DITHERS  | ghi+kl+no  | HOLKUNG |
| abc+de+ghi | BIGHEAD     | HEDONIC    | de+ij+st | JETSKID  | ghi+mn+tu  | THINGUM |
| abc+de+hij | JIB-HEAD    | HERDICS    | de+kl+no | DJENKOL  | ghi+no+rs  | HORSING |
| abc+de+mno | ABDOMEN     | DITCHES    | de+kl+op | PLONKED  | ghi+no+st  | HOSTING |
| abc+de+rst | BRACTED     | DUCHTIE    | de+mno+rs | MODERNS  | ghi+no+tu  | THOUING |
| abc+de+stu | SUBDATE     | DISJECST   | de+mno+st | ENDMOST  | ghi+op+rs  | GRISHOP |
| abc+ef+mno | FENOBAM     | CLONKED    | de+mno+uv | MOUNTED  | ghi+op+tu  | HIP-GOUT |
| abc+de+nop | BEN DOPA    | DUCKLET    | de+mno+uv | UNMOVED  | ghi+rs+yz  | ZIGHYRS |
| abc+ef+st  | GABFEST     | CLOMPED    | de+mn+stu | DUSTMEN  | gh+no+rst  | THRONGS |
| abc+ef+rst | BEARRATS    | MULCITED   | de+nop+rs | RESPOND  | gh+no+stu  | NOUGHTS |
| abc+ghi+nm | BINGHAM     | SCORCED    | de+no+rst | RODENTS  | hi+nop+st  | NIPSHOT |
| abc+ghi+rs | GARBISH     | DOCENTS    | de+no+stu | SNOTED   | hi+no+stu  | UNHOIST |
| abc+ghi+st | BAGHTS      | COUNTED    | de+no+tuv | UNVOTED  | hi+op+stu  | POUTISH |
| abc+ghi+st | HAGBUTS     | SCURVED    | de+no+uvw | UNVOVED  | mno+st+yz  | MYZONTS |
| abc+hi+st  | BHUTIAS     | CONDUTS    | de+op+rst | SPORTED  |            |           |
2+2+4
abcd+hi+rs DIBRACHS cd+op+rstu PRODUCTS ef+op+rstu POUFTERS
abcd+kl+no BOCK-LAND de+hi+mnop DOMIPHEN cf+no+rstu FORTUNES
ab+de+lmno LEMON-DAB de+lmno+tu MOUNDEL T fghi+lm+tu MIGHTFUL
ab+de+rstu ABSTRUDE de+no+rstu ROUNDEST fghi+no+tu INFOUGHT
ab+lmno+st LAMBTONS de+no+stuv UNSTOVED fghi+op+rs HIP-FROGS
ab+no+rstu TABROUNS de+op+rstu SPROUTED fghi+op+st GIFT-SHOP
bc+de+no+tu OBDUCENT efgh+i+no+tu FOUGHTEN hi+lmno+st SHILMONT
bc+de+notu CONTRUBS ef+lmno+st LOFTSMEN hi+op+rstu PHOTURIS

cdef+no+tu CONFUTED ef+im+rstu FULMERTS

cd efghi+ki+st FLIGHTDECKS

cdefghi+kl+st FLIGHTDECKS

2+2+5
abcde+hi+st BED-CHAIRS abcde+no+rs ABSCONDER efgh+i+no+st NIGHT-FOES
abcde+kl+tu DUCK TABLE abcde+no+tu DOUBTANCE
abcde+lm+rs SCRAMBLED de+imnop+st POND SMELT

2+2+7
cdefghi+kl+st FLIGHTDECKS

cdefghi+kl+st FLIGHTDECKS

2+3+3
abc+op+rst CRAB-POTS cde+ij+stu JUSTICED ef+nop+rst FORSPENT
ab+ghi+lmn HAMBLING def+hi+rst RED-SHIFT ghi+mn+tu MOUTHING
ab+ghi+rst BAR SIGHT def+nop+rs FORSPEND ghi+no+stu THINGUMS
ab+nop+rst PROBANTS de+ghi+rst DREIGHTES ghi+no+rst SHORTING
cde+hi+rst DITCHERS de+hij+mono DEMJOHN ghi+no+stU SHOUTING

cde+kl+stu DUCKLETS de+mno+rst MORDENTS ghi+op+rst OPIGHTS

cde+mno+stu DOCUMENT de+mno+st UNMODEST gh+i+mn+stu NUGHTSOM

cde+no+rst CONSTRED de+nop+rst PORTENDS hi+nop+rst HORN-TIPS

cde+no+stu CTENODUS ef+mno+rst FORSMENT

2+3+4
abcd+ijk+rs JACK-BIRDS cde+ijkl+no DJENKOLIC de+mno+rst UNDERMOST
abc+no+rstu OBSCURANT cde+mnop+rs COMPRENDS ef+no+rstu UNSPORTED
ab+mno+rst BRAMPTONS cde+no+rstu CONSTRUED fghi+no+rstu UNFORGETS
ab+mno+rstubb UMBROSANT cde+op+rstu PROCEST fghi+op+rstu PROFIGHTS
ab+no+rst Subpatron dfe+no+rstu UNFROSTED fghi+op+rstu PROFIGHTS
bcd+hi+rst DITCH-BOURS de+lmno+stu MOUNDEL T ghi+mnop+rs MORPHINGS

cde+hi+rst DISCURATH de+mnop+stu EMPOUNDST

2+3+5
ab cde+hi+rst BREAD-STICH abcde+no+stu DOUBTANCES efghi+mno+st FISHMONGER
ab cde+kl+stu DUCK TABLES ab+efghi+rst BEAR-FIGHTS efghi+no+rst FORENIGHTS
ab cde+mno+stt UNCOMBATED de+lmnop+stu PLUMSTONED efghi+no+stu TONGUE-FISH

2+3+6

defghi+mno+rs HEMINGFORDS
(Hemingford Abbot and Hemingford Grey are two villages in Cambridgeshire, England)
ab+lmno+rstu  MULBARTON'S  FITCHBURGS  abcde+hi+rstu  SCHUBERTIAD
bcde+no+rstu  CURBSTONED  fghi+no+rstu  FOUR THINGS  abcde+no+rstu  CRAB-SNOUTED

3+3+3

cde+mnop+stu  DOCUMENTS  cde+nop+rstu  PRODUCENTS  abc+efghi+rstu  BRIGHT FACES

cde+nop+stu  CONSPUTED  cde+mnop+stu  CONSUMPTED

ghi+mnno+stu  MOUTHINGS

ghi+mnop+rst  HOT SPRING

2+2+2+2

ab+de+gh+rs  BEGHARDS  ab+gh+i+no+tu  BONAUGHT  de+hi+lm+op  DEMOPHIL
ab+de+hi+rs  BREADISH  ab+hi+lm+rs  MARBLISH  de+hi+no+st  HEDONIST
ab+de+hi+st  SHITABED  ab+hi+mn+rs  BRAHMINs  de+hi+no+rs  HORDEINS
ab+de+kl+no  A-KENBOLD  ab+hi+op+rs  BOARSHIP  de+hi+op+rs  SPHEROID
ab+de+mn+tu  ADUBMENT  ab+i+hi+op+st  SHIP-BOAT  de+ij+no+rs  JOINERS
ab+de+no+rs  BROADENS  ab+i+j+no+st  BANJOIST  ef+hi+mn+st  SHIFTMEN
ab+de+no+st  DAB-STONE  bc+ef+hi+no  BONCHIEF  ef+hi+op+rs  FORESHIP
ab+de+no+tu  UNBOATED  bc+hi+op+rs  CORBSHIP  ef+kl+no+st  FOLK TUNE
ab+de+op+st  STOP BEAD  cd+hi+no+rs  CORNDISH

2+2+2+3

abc+hi+op+rs  COARSHIP  abc+bl+kl+stu  BASKETFUL  de+gh+i+mn+st  THEGNEDOMS
abc+kl+no+xy  BLACK ONYX  abc+ghi+no+tu  BAI THOUNG  de+ghi+i+mn+st  DEIGHTONS
abc+kl+op+st  BLACK-POTS  ab+hi+lm+tu  THUMBNAIL  de+ghi+i+st+yz  DISGYSETH
ab+de+hi+rst  RHABIDES  ab+hi+lo+rst  BARONSHIP  de+hi+i+mn+rs  MODERNISH
ab+de+hi+stu  HABITUDES  ab+hi+no+rst  HOT-BRAINS  de+hi+mn+rst  THIRDSMEN
ab+de+mnop+rs  DOBERMANS  ab+hi+op+stu  ABOUT-SHIP  de+hi+no+rst  DISPONETH
ab+de+mnop+rs  UMBONATED  ab+i+j+no+rst  BAR JOINTS  de+hi+i+no+rst  DISTHORNE
ab+de+mnop+rs  EMBRANDST  bc+ef+mn+or  COMB FERNs  de+hi+i+no+rst  HUDSONITe
ab+de+mnop+rs  UMBESTAND  bc+gh+i+no+rst  BOTCHINGS  de+lm+op+rst  PREMOLST
ab+de+mnop+rs  ROPE-BANDS  cde+gh+i+no+st  GONE DUTCH  de+no+rs+uvw  VERWOUNDS
ab+de+mnop+rs  ADSORBENT  cde+hi+n+st  CHEDISTON  ef+hi+i+no+rst  INFORSETH
ab+de+mnop+rs  EASTBOUND  cde+hi+st+yz  SCYTHIZED  ef+hi+op+rst  POT-FISHER
ab+de+mnop+rs  ABSORPTED  cd+ghi+i+no+rs  CHORDINGS  ef+kl+i+no+rst  FOLK TUNES
ab+ef+gl+mn+rs  FLAMBERGS  cd+hi+i+mn+rs  RICHMONDS  hi+no+rst+x  THYROXINS
ab+ef+hi+rst  FATHER SIB  def+hi+i+no+rs  HEINSDORF  hi+op+rst+w  SPIXWORTH

2+2+2+4

abcd+hi+op+rs  CHIP-BOARDS  ab+hi+i+mnop+tu  THUMB PIANO  de+hi+i+no+rstu  DISONURETH
abcd+hi+no+rst  COSH BANDIT  ab+hi+i+no+rstu  RHINOBATUS  hi+i+lm+op+rst  PSILOTHRUM
ab+de+lmno+tu  METALBOUND  cd+ghi+i+no+rs  CHINGFORDS
ab+ghi+j+no+rs  JOB SHARING  cd+hi+i+no+rs  DISJUNCTOR

2+2+2+6

abcdef+hi+kl+rs  FLASHED BRICK
Buried in these lists is a handful of rather special words and these examples are taken from words with five or more letters:

1. In some cases each alphabetically-consecutive group of letters which appears in the alphome also occurs in alphabetical order in the word itself:

<table>
<thead>
<tr>
<th>Word</th>
<th>Alphome</th>
<th>Alphome</th>
</tr>
</thead>
<tbody>
<tr>
<td>KLOMP</td>
<td>KL M</td>
<td>KLM+OP</td>
</tr>
<tr>
<td></td>
<td>O P</td>
<td></td>
</tr>
<tr>
<td>SHINTO</td>
<td>S T</td>
<td>HI+NO+ST</td>
</tr>
<tr>
<td></td>
<td>HI N O</td>
<td></td>
</tr>
<tr>
<td>ALMS-TUB</td>
<td>A B</td>
<td>AB+LM+STU</td>
</tr>
<tr>
<td></td>
<td>LM STU</td>
<td></td>
</tr>
</tbody>
</table>
DJENKOL = DE
       J K L
       N O = DE+JKL+NO

2. In other cases each alphabetically-consecutive group of letters which
appears in the alphome appears in reverse alphabetical order:

PLONKED = P ON
       L K
       ED = DE+KL+NOP

POUTISH = PO
       UT S
       I H = HI+OP+STU

3. A word may be exactly the same as its alphome in which case it is
called an alphomic word. Thus the word HIRST is the same as its
alphome HI+RST, whilst DEHIST is the same as its alphome DE+HI+ST.

4. If a word is a reversal of its alphome it is called a reverse alphomic
word. Thus POLKED is the reverse of its alphome DE+KL+OP.