The trigger for this article was finding a twin for a town mentioned by Darryl Francis (in the sense that one, El Canbaro, was a permutation of the letters of the other, Barcelona, W03-277). I thought it might be amusing to see how many twin places existed, as it seemed to be as good a basis for town twinning as the reasons often given for these excuses for mayoral junketing. I was overwhelmed: more than one third (about three-quarters of a million) of all places participate in twins, but also nearly a quarter of a million exist in triplets, and so on. The most permutable sequence of letters can be arranged into 54 different places, the next into 53 places, and so on. In alphomic form, the sets are: 54 places for AEILMS; 53 places for AAIKRS; 52 places for AAIMRT, AAINRT, AEIMNS, AEIMRS, and AEINST; and 51 places for AAGINR and AEILMR. Note that an A and an I always occur, together with an A or E, and frequently letters from R, S and T. The S is of course useful for plurals or conjugation of verbs, as are letters to make the endings -OR, -ER, -ING etc, and prefixes such as A-, and UN-. Note also that all cases have exactly six letters, which was not a restriction imposed by me. Longer sequences would seem, in theory, to give more scope for longer endings, such as -ING or -NESS, and prefixes like ANTI-; but it may be that shorter words contain a greater mixture of letters. The full sourcing for the 54 case is given below, and the cases with 53 and 52 forms are given in compact form to save space (but see next section for AEINST).

54 places for AEILMS or ISMAEL

<table>
<thead>
<tr>
<th>Place</th>
<th>Country</th>
<th>Latitude</th>
<th>Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alisem</td>
<td>Turkey</td>
<td>37°58</td>
<td>40°58</td>
</tr>
<tr>
<td>Elmasi</td>
<td>Albania</td>
<td>41°10</td>
<td>19°36</td>
</tr>
<tr>
<td>Ezbe Ibrahim `Abd el-Sami</td>
<td>Egypt, 29°33, 30°57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mohammad Sheyk ol Eslami</td>
<td>Iran, 36°38, 51°25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ilemas</td>
<td>Russia</td>
<td>56°38</td>
<td>50°37</td>
</tr>
<tr>
<td>Laem Si</td>
<td>Thailand</td>
<td>9°23</td>
<td>99°19</td>
</tr>
<tr>
<td>Lamesi</td>
<td>Bosnia</td>
<td>44°38</td>
<td>18°39</td>
</tr>
<tr>
<td>Arbet Lemais</td>
<td>Western Sahara, 21°23, -16°50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lem Sai</td>
<td>Thailand</td>
<td>9°23</td>
<td>99°19</td>
</tr>
<tr>
<td>Monte Lesima</td>
<td>Italy, 44°41, 9°15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limaes</td>
<td>Point, Angola</td>
<td>-13°15, 12°39</td>
<td></td>
</tr>
<tr>
<td>Pulau-pulau Maisel</td>
<td>Indonesia, -5°29, 127°32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malei</td>
<td>Croatia</td>
<td>43°44</td>
<td>16°45</td>
</tr>
<tr>
<td>Maseli</td>
<td>India</td>
<td>20°47</td>
<td>80°26</td>
</tr>
<tr>
<td>Masile</td>
<td>Philippines</td>
<td>14°48, 120°49</td>
<td></td>
</tr>
<tr>
<td>Sungai Melais</td>
<td>Brunei, 4°50, 114°59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sidhirodromikos Stathmos Melias</td>
<td>Greece, 39°33, 22°35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mesali</td>
<td>Dem. Rep. of the Congo, 3°04, 21°17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eriipia Ano Mileas</td>
<td>Greece, 40°14, 22°16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Misale</td>
<td>Dem. Rep. of the Congo, -3°31, 17°38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comuna Mislea</td>
<td>Romania, 45°05, 25°49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salemi</td>
<td>Nargay, Afghanistan, 33°46, 69°31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dar Amesil</td>
<td>Morocco</td>
<td>29°19</td>
<td>-10°06</td>
</tr>
<tr>
<td>El-Mi'sa</td>
<td>Jordan</td>
<td>31°27</td>
<td>35°41</td>
</tr>
<tr>
<td>Bab Emsila</td>
<td>Morocco</td>
<td>35°13</td>
<td>-5°34</td>
</tr>
<tr>
<td>Esmali Sai</td>
<td>Afghanistan, 36°18, 64°56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ismael Pinto</td>
<td>Colombia, 8°42, -76°19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rio Laisme</td>
<td>Venezuela</td>
<td>8°50</td>
<td>-63°46</td>
</tr>
<tr>
<td>Oued oua-n- Leimas</td>
<td>Algeria, 28°44, 6°55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lemasi</td>
<td>Greece</td>
<td>38°12</td>
<td>23°50</td>
</tr>
<tr>
<td>Lemsia</td>
<td>Georgia</td>
<td>43°01</td>
<td>42°40</td>
</tr>
<tr>
<td>Les Liames</td>
<td>France</td>
<td>46°33</td>
<td>1°57</td>
</tr>
<tr>
<td>Maesil</td>
<td>South Korea, 34°43, 125°56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maleis</td>
<td>Sudan</td>
<td>6°31</td>
<td>29°52</td>
</tr>
<tr>
<td>Maseil-seil</td>
<td>Philippines, 15°55, 120°53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Masiel</td>
<td>Cameroon</td>
<td>3°27</td>
<td>12°36</td>
</tr>
<tr>
<td>Meisal Lake</td>
<td>Norway</td>
<td>62°46</td>
<td>8°10</td>
</tr>
<tr>
<td>Mesila</td>
<td>Finland</td>
<td>63°45</td>
<td>26°57</td>
</tr>
<tr>
<td>Isla de Misa</td>
<td>Colombia, 7°20, -77°19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miseal</td>
<td>Ireland</td>
<td>52°41, -6°46</td>
<td></td>
</tr>
<tr>
<td>Mseila</td>
<td>Algeria</td>
<td>34°35, 4°34</td>
<td></td>
</tr>
<tr>
<td>Salime</td>
<td>Spain</td>
<td>43°13</td>
<td>-6°50</td>
</tr>
</tbody>
</table>

© Rex Gooch 2004
Sameli, Ghana, 8°09, -2°01
Phumi Samlei, Cambodia, 10°57, 106°01
Gor Selami, Western Sahara, 26°23, -10°37
Mallahet 'Ugret Selina, Egypt, 31°09, 33°05
Sungai Semai, Malaysia, 3°11, 103°04
Semlia, India, 24°30, 74°22
Silame, Guinea, 11°41, -11°56
Semlia, Indonesia, -7°29, 110°10
Silema, Sierra Leone, 8°22, -11°05
Es-Slemia, Libya, 32°37, 12°17
Sliema Point Tower, Malta, 35°54, 14°30
Pointe Smaile, Vanuatu, -16°38, 168°14

53 places from KAISAR or AAIKRS
AIKASAR AKASRI AKRIAS AKSAIR ARASKI ARKASI ARSAKI ASAKIR
ASSAKARI ASIRAK ASKIRA ASKRIA ISARAK ISKARA KAIAS KARIAS
KASRIAR KARIAS KARISA KASAIR KASARI KASARJ KASIRA
KASRIAS KIASAR KIRASA KISARA KRASAI KSAIRA RAASKI RAIKAS
RAISKA RAKASI RAKISA RASIKRA RASKAI SAIKAR SAIKRA SAIKARK
SARKAIR SAKARI SAKIRA SAKRAS SARAIK SARAKI SARAKJ SARAKS
SARKAI SIARAK SIKARA SKARAI SKARIA ARASKI, Estonia, is at www.eki.ee/knn/amas_vy.htm

52 places from AIRTAM or AAIMRT
AIRTAM AIT MAR AMARIT AMARTI AMIRAT AMRATI ARAMTI ARIMAT
IMARAT IMATAR IMATRA IMRTA IRAKTA MAIRTA MAIRATI MARATI
MARIAT MARIAT MATARIA MATARA MATRIA MATRATI MTRATI
MIATRA MIRATA MITARA MITRAA MRATIA MTARIA RAITAM
RAMATI RAMIAT RAMITA RAMITIA RATAMI RATIMIA RMT biases RMTATI
TAAMIR TAIMAR TAIMRA TAIMIRA TAMRIA TARAIRI TARANI TANIRA
TIAMIR TIMAR TEI MAR TRAMAI TRAMIR TRIANU TRIANU

52 places from AIRTAN or AAINRT
AIRTAN ATANAT ANTAIR ANTIRA ARANIT ARITAN ARNAIT ARNITA
ARTANI ARTIAN ARTINA ATNARI ATRAIN ATRANI IANTAR
INARAT INATRA INTARA NTARAT NARATI NARTA NATIRA
NIARATA NIARTA NTARIA NTIARA RAINTA RANATI RANTAIA NTIARAI
RATANI RATINA RATNAA RATNIA RAIRIN TAIARIN TANARIA TANARI
TANRAI TARIAN TARAIN TARINA TARNAI TARAN TIANRA
TIRANA TRAIAN TRAINA TRIANU TRIANU

52 places from AMIENS or AEIMNS
AMIENS ANSEMI ASMINE EIMANS EIMNAS EMINAS EMENA ISMESN ISMENA
MAENSI MAINES MAISNE MANESI MANIES MANISE MANSIE MASEIN
MASENI MASENE MEISNE MENISE MENSINE MENSIA MENSIA
MIANES MIASE MISENE NAMEISE NAMEIS NAMIES NAMISE NA SIEM
NEMASI NE SIMA SAIMEN SAMEEN SAMENI SAMIEN SANIEN SAN-MEI
SEINAM SEINMA SEMANI SEMIAN SENAMI SENMAI SIAMEN SIMANE
SIMEAN SIMENA SINMAE SMAIN SMAIN SMAINE

52 places from MAREIS or AEIMRS
AMSERI ARMESI ARMISE ASERIM ASERIM ASRIM EISMAS EMRAS EMRAS
MAISER MAISRE MARIES MARISE MASERI MASIRE MEIRAS MIRAS
MEISRA MEREIS MREISI MRESI MRESIA MRESIA MRESIA MIERAS
MISARE MISERA MRESI MRESI REMEIS REMIES REMIES
SARME SAMERI SAMIER SAIRES SARIES SARES SAREM SAREMI SEMARI
SEMRIR SERAMER SERAIM SERIMA SERMAI SERMIA SIMARE SIMERA
SIRAME SMEIRA SMEIRI SMREI SMEIRI SREMA SREMA SREMA
Unrestricted Permutations

The next natural step was to ask what would happen if all words were allowed. The results were that 60% of all words had no twin. The top result was 84 different permutations of AEINST (which is kinder to call TISANE, a word in all good dictionaries, and 3 = in place names); 80 each for NASTIER (or AEINRST, the Francis sequence) and SATIRE (AEIRST); 77 of REGAIN (AEIGNR) and ANGREIST (AEGINRST, the Borgmann/Grant sequence); 73 of AMIENS (AEIMNS, 3 = in place names) and ARSINE (AEINRS); 72 of DENIAL (ADEINL); 71 of RAINED (AEINR); 70 of SALINE (AEILNS); and 68 of ISMAEL (AEILMS, the top sequence for place names).

For the first time, there is a sequence of other than six letters, ie the even of NA TIER. A, E, and I are always present, and RST are popular. Full sourcing is given for TISANE, but sources in the last two cases are not given in detail if the word come from the NIMA database, which is usually the case. The top case, TISANE, is also one of the "52" cases which should have appeared above: I have given both place and non-place sources here, so that the one list serves both purposes.

84 words for AEINST or TISANE (including 52 place names, and 29 words from the OED, with some words in both categories)

aienst, OED arm 3a, 1489q
Aniste, Bosnia & Herzegovina., 44°41, 19°14
Anstie (name), OED cavendish 1, 1844q
Asinite, Chad, 12°33, 16°29
ASNITE = Accreditation System of National Institute of Technology and Evaluation, Japan, (eg)
Astein, Austria, 47°43, 14°28
Eastin, US Census personal name
Eistan, Norway, 70°15, 19°32
Enista AB (Swedish corp.), www.carlbro.com/archive24.php (& family name, US, on Web)
Enitsa, Bulgaria, 43°23, 24°04
The Doctrines of Alchemy: Signatures, Correspondences, Entias... www.alchemilla.com/aref.html
Estanin, Iran, 37°06, 57°05; or estain, OED stannum (Old French), or US Census personal name
Estani, Bolivia, -11°38, -65°43
Etinas Island, Philippines, 13°52, 123°52
Ietans, OED snake 8, 1821q
Inseit, OED
Itesan, Niger, 13°53, 5°13
aeinita, OED next
Saitein, Germany, 47°41, 10°16
sanite, OED
Sanite, Ghana, 10°37, -2°05; santie, OED santy
Saitie, China, 32°33, 117°31
Seiant, Romania, 46°25, 21°36
Seitan, North Korea, 37°58, 125°56
Senita, Sierra Leone, 9°13, -12°35; senita cactus, ITIS plant
Sentai, Indonesia, 0°58, 109°49
Sentini, Indonesia, -2°06, 138°35
Setina, Greece, 40°52, 21°38; Carex maritima setina, ITIS plant
Sintia, Mica, Romania, 46°25, 21°36
Sanite, Ukraine, 46°23, 29°27
Anesiti, Latvia, 56°29, 23°02
aseint, OED
Astein, China, 42°55, 93°08
eat-ins, OED -in, 1965q
Estani, Bolivia, -11°38, -65°43
Estani, South Korea, 34°36, 126°59
Sati, Portugal, 39°13, -8°45
nastie, OED nasty 1a, 1576q
sainte, OED bequeath, 1066q
Phou Pha Santia, Laos, 20°04, 103°58
Sante, China, 32°33, 117°31
Sanite, Ghana, 10°37, -2°05
Santei, Indonesia, 0°58, 109°49
Santini, Indonesia, -2°06, 138°35
Setin, Greece, 40°52, 21°38; Carex maritima setina, ITIS plant
Sintia, Mica, Romania, 46°25, 21°36
Sanite, Ukraine, 46°23, 29°27
Anesiti, Latvia, 56°29, 23°02
aseint, OED
Astein, China, 42°55, 93°08
eat-ins, OED -in, 1965q
Sitena, Albania, 39°48, 20°14
staine, OED
stanie, OED stoney
Steina, Iceland, 64°41, -14°38; steina, OED stain
Genus Stenia, Family Orchidaceae, monocot, PS
Taein, South Korea, 35°53, 126°52
Taisen, North Korea, 39°55, 125°29; taisen, OED teise 1, 1330q
Piton Taisne, French Southern and Antarctic Lands, -49°19, 70°01
Tanies Tba, Georgia, 42°38, 45°00
Tansie, Burkina Faso, 10°49, -16°16; tansie, OED silverwort, 1611q
Tasien, South Korea, 36°24, 126°56
Tenisa, Spain, 27°54, -15°30
Tesani, Bosnia and Herzegovina, 43°42, 18°22
Tesina Glavica, Bosnia & Herz., 44°43, 17°35
Tinas, OED tinea
tisane, OED
Tseain, OED Mongolian A 1 a, 1893q

stainen, Hodge
Valea Stanei, Romania, 47°33, 25°11
stiaen, OED stone (North Frisian)
taines, OED taine

NASTIER (AEINRST)

One of the sequences in second-place, NASTIER, has been the subject of much work in the past by Darryl Francis. In total, his contributions W98-163, W99-262, and W00-08 listed 181 permutations. This compares with my puny 80, though he lists such non-dictionary items as “tears in”. I list 24 additional places or zoological names, taking the total to over 200, and offer better sources for some of his sequences. These two figures of 80 and 207 may be compared with the mere 14 words of the most permutable 7-letter sequence in Webster 2, which, it has been reported in Making the Alphabet Dance, has just 14 permutations (This sequence is again NASTIER.). Of my 80, about half are place names or zoological names, and it seems clear that dictionary words and derived forms, ancient and modern, can only account for about one quarter of the 207: the majority of permutations are still such items as plurals of family names, or sequences such as RENT IS A.

Additions to AEINRST:
Arsenti Podere Mont, Italy, 43°04, 10°54
Bled Irtanes, Algeria, 36°30, 1°22
Istrane, Greece, 41°23, 24°06
Nestiar, Russia, 56°33, 45°20
Nistrea, Romania, 47°05, 27°08
Retsani, Greece, 39°44, 22°44
Sen Trai, Vietnam, 21°28, 104°21
Ti-n-Sratine, Algeria, 26°32, 1°36
Jebel Tarsine, Morocco, 30°34, -6°34
Tisnare, Chad, 9°57, 14°31
Tisnare Kanal, Sweden, 58°53, 16°05
Tsareni, Moldova, 47°45, 28°52

Artinse, France, 45°51, 1°46
Salto de Isanter, Colombia, 6°04, -74°07
Neritsa, Russia, 65°20, 52°45
Niaster, Belgium, 50°27, 5°40
Nseirat, Mauritania, 18°02, -8°03
Riasten, Norway, 62°51, 11°45
Si’ertan, China, 37°14, 103°50
Sternai, Greece, 35°31, 24°09
Rio Tiernas, Spain, 41°28, -1°20
Tisaren, Sweden, 59°00, 15°08
Orthocladius traenis neofasciatus, ITIS animal
Chabet Ain Tsirane, Tunisia, 36°50, 8°51
better sources:
ARSTEIN Arstein, Germany, 51°02, 7°44
RASETIN Rasetin Vrh, Croatia, 44°33, 15°53
RENTIAS Rentias Rust, South Africa, -27°01, 26°18 (no apostrophe)
SARTINE Sartine, Belgium, 50°33, 3°16
STERIAN Sterian Dumbrava, Romania, 46°09, 27°35 (was S. Ter-ian, an author)
TERNAIS La Ternais, France, 47°15, -1°59
TERSINA Tersina cardemium wallacei, ITIS animal

alternative source:
rantise, Brandreth: The Scrabble Book, Chancellor Press, 1993

**AEGINRST**

Having come so close, it would seem remiss not to mention the most famous example of word permutations — AEGINRST, which is 5= in my top sequences, having just 74 entries. The present list was based on Borgmann's, but many words were ejected by Jeff Grant, who then added more (see W94-008 & W94-089) to bring the total to 158, which was incremented by two, making 160 (by Darryl Francis, W97-98, W98-33). This compares with 11 for the most permutable 8-letter word in Web2: AEINRSTU. Below I add 12 to this list, making 173 in all. Similar remarks about how such a large number is reached apply as above: Jeff Grant's criteria for inclusion are carefully spelled out in W94-008.

**Additions to AEGINRST:**

Geriants: Geriant is a type of fencing by Poly Vinyl Creations; or David Geriant, an Origami designer
Greinats, Germany, 47°45, 10°22
Grestain, France, 49°25, 0°21
rietgans: Dutch name of Bean goose, Anser fabalis Saheh-ye Rigestan, Afghanistan, 3116, 6548
sargent, OED overplus C, 1640q
Sungai Sengarit, Indonesia, 0°15, 110°14
Sungai Seritang, Malaysia, 4°43, 103°11
snatering: noise made by rietgans, qv (Digswell Lake Society newsletter)
Mount Stigaren, Svalbard, 77°56, 16°38
Mys Tsingera, Russia, 79°08, 104°04
Ti-n-Esgar, Mali, 16°17, -4°17

better sources:
REGISTAN: Jeff Grant gives Registan as a desert; indeed it is: it actually means "sand place". However, there are Registan Squares at the centre of Central Asia's two most famous towns, and the Registan in Samarkand is one of the world's most famous buildings (just rebuilt when I visited!).
SARGENTI: Somatogyrus sargenti praesidii, ITIS animal.
STRIEGAN: striegian (Old English), OED instrie.
In fact, some of his dictionary words or names can be found in more accessible sources, such as Chambers or the OED.

**OTHERS**

key: nothing = place from NIMA, a=ITISanimal, d=EDD, o=OED headword or variant, s=OSPD, t=OED citation, w=W81-104ff., z=New Zealand place ex www.linz.govt.nz/databases/geographic/geodist.html

**80 words from SATIRE (AEIRST)**

AERISTo AIRESTs AIRSETw AISTERt AISTREt AITRES ARESTI ARISTEo ARITES ARTEIST ARTIEsa ASTIERo ASTERIa ASTIERt ASTIREo ASTRIEt
Conclusion

To test the truth of the proposition above (that more dictionaries at this point would add very little), I asked Susan Thorpe to examine a set of words containing highly unusual letter sequences (Hodge: Handbook of American Indians). This failed to contain even a single word in the AEILMS (top places), or the AEGINRST (Borgmann/Grant), or the NASTIER (Francis) lists, let alone add to them. It did, however, contain two of the words in TISANE (my top word), and added one to it: STAIEN. This experiment seems to confirm that significant success in expanding the lists lies in the imagination rather than further dictionaries. The relative success of place names is simply due to their overwhelming numbers. My thanks to Susan Thorpe for conducting the experiment.

To conclude, many sequences give approximately the same number of permutations: if one is reported as being significantly more permutable, that is because a special effort has been made in that particular case to find ever more outré examples.

It should not be too difficult to fill in some of the gaps by using different word endings.

Place names are from the NIMA database. Latitude and longitude are in degrees and minutes. PS source is www.anet.com/~manytimes/plantssyn.txt.

Afterword

On a less serious note, there are many delights to be discovered in a list of anagrams. There is the tautonymic pair BANCABANCA and CABANCABAN in the Philippines. Then imagine the delight of a sadistic crossword compiler, who pretends that an innocent BOOK SALE (OED) is taking place in ABELKOSO (Congo), BEKOLOSA (Madagascar), BOLOKASE (Indonesia), or SABOLOKE (Georgia).