The trigger for this article was finding a twin for a town mentioned by Darryl Francis (in the sense that one, El Canarbo, 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

Alisem, Turkey, 37°58, 40°58
Elmasi, Albania, 41°10, 19°36
Ezbet Ibrahim 'Abd el-Sami, Egypt, 29°33, 30°57
Mohammad Sheykh ol Eslami, Iran, 36°38, 51°25
Ilemas, Russia, 56°38, 50°37
Laem Si, Thailand, 9°23, 99°19
Lamesi, Bosnia and Herzegovina, 44°38, 18°39
Arbet Lemais, Western Sahara, 21°23, -16°50
Lem Sai, Thailand, 9°23, 99°19
Monte Lesima, Italy, 44°41, 9°15
Limaes Point, Angola, -13°15, 12°39
Pulau-pulau Maisel, Indonesia, -5°29, 127°32
Malesi, Croatia, 43°44, 16°45
Maseli, India, 20°47, 80°26
Masile, Philippines, 14°48, 120°49
Sungai Melais, Brunei, 4°50, 114°59
Sidhiodromikos Stathmos Melias, Greece, 39°33, 22°35
Mesali, Dem. Rep. of the Congo, 3°04, 21°17
Eripia Ano Mileas, Greece, 40°14, 22°16
Misale, Dem. Rep. of the Congo, -3°31, 17°38
Comuna Mislea, Romania, 45°05, 25°49
Salemi Nargay, Afghanistan, 33°46, 69°31
Dar Amesil, Morocco, 29°19, -10°06
El-Mis'a, Jordan, 31°27, 35°41
Bab Emsila, Morocco, 35°13, -5°34
Esmali Sai, Afghanistan, 36°18, 64°56
Ismael Pinto, Colombia, 8°42, -76°19
Rio Laisme, Venezuela, 8°50, -63°46
Oued oua-n-Leimaa, Algeria, 28°44, 6°55
Lemasi, Greece, 38°12, 23°50
Lemsia, Georgia, 43°01, 42°40
Les Liames, France, 46°33, 1°57
Maesil, South Korea, 34°43, 125°56
Maleis, Sudan, 6°31, 29°52
Maseil-sei, Philippines, 15°55, 120°53
Masiel, Cameroon, 3°27, 12°36
Meisal Lake, Norway, 62°46, 8°10

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Sameli, Ghana, 8°09, -2°01
Gor Selami, Western Sahara, 26°23, -10°37
Sungai Semail, Malaysia, 3°11, 103°04
Semlia, India, 24°30, 74°22
Silema, Sierra Leone, 8°22, -11°05
Sliema Point Tower, Malta, 35°54, 14°30

Phumi Samlei, Cambodia, 10°57, 106°01
Mallahet ‘Ugret Selima, Egypt, 31°09, 33°05
Semali, Indonesia, -7°29, 110°10
Silame, Guinea, 11°41, -11°56
Es-Sлемia, Libya, 32°37, 12°17
Pointe Smaile, Vanuatu, -16°38, 168°14

53 places from KAISAR or AAIKRS
AIKASAR AKASRI AKRIAS AKSARIR ARASKI ARKASI ARSAKIR
ASAKARI ASIRAK ASKIRA ASKRIARS SARAKI SIKARAS KARAIS
KASARI KIASAR KISARA KISARAS KRASAI KSAIRAS RAASKIR
RAISKA RAKASI RKITA SISKRA SAIKAR SAIKRA SAIRAK
SAKAI SAKARI SAKIRA SAKRIAR SARIAK SARIKAR SARIKRA
SARKAI SIARAK SIKARA SKARAI SKARIA
ARASKI, Estonia, is at www.eki.ee/knn/amas_vy.htm

52 places from AIRTAM or AAIMRT
AIR-TAM AIT MAR AMARIT AMARTI AMRATI ARAMTI ARMATI
IMARAT IMATAR IRMATA IRMTA MTRA ITARAR ARAMATI
MARIAT MARITA MARTIA MATAIR MATARI MATRAI MARIAT
MIATRA MIRATA MITARA MTRAAM MRATIA MTAIRA RAITAM
RAMATI RAMIAT RMIAT RMTIA RATMAI RATMIA RIMATA
TAAMIR TAAMIR TAMIRA TIRAMAI TARMAI TAMARAI TIA-MAR
TIAMR TIMARA TIRAI MA TRAMAI

52 places from AIRTAN or AAINRT
AIRTAN ANATIR ANTARI ANTIRA ANRITA ARANIT ARITAN
ARTANI ARTIAN ARTINA ATNAR IANART IARTAI
INARAT INATARA ITSARAR ISNAR IARTAIN ARANTAI
NIARTA NIATARA NTARIA NTIARA RANTA RANITA RANTAI
RATARI RATNARI RATNIA RARANI TANASK TANARI TANARI
TANRAI TARANI TARAN TARAIN TANIAR TANARI
TIRANA TRIANA TRAIAN TRIANAE

52 places from AMIENS or AEIMNS
AMIENS ANSEMI ASMINE EIMANS EMINAS EMNASE IMESAN ISMENA
MAENSI MAINES MAISEN MANESI MANIES MANISE MASEIN
MANESI MANEIS MINESAN MENSAN MENSNA MENSEN NA SMEA
MIANES MINSAE MISANE NAMEIS NAMEIS NAMISE NA SIEM
NEMASI NE SIME SAMEIN SAMEIN SAMEIN SANMIE SANMIE
SEINAM SENIMA SEMANI SEMIAN SENIAN SENMAI SIMAN
SIMNAE SIMENA SIMEA SIMEAN

52 places from MAREIS or AEIMRS
AM SERI ARMEIS ARMISE ASERIM ARIMS ERSIMAS EMISERMS IMSEAR MAISRS
MAISER MAISRE MARIES MARISE MARSER MASIRE MIRASER MIRASER
MEISRA MERAIS MESAIR MESRAI MESRIA MAISER MIERS
MISARE MISERA MSAIRE RAMESI REMASI RIMESA RIMESA
SAIRME SAMERI SAMIRI SAREMI SARIME SEMAR SEMIAR
SEMIRA SERAMI SERIAM SERIMA SERMIA SIMAR SIMERA
SIRAME SMEIRA SMEIRA SREMA SREMA SIMRA SIMERA
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 (AEIGINR) and ANGREIST (AEGINRST, the Borgmann/Grant sequence); 73 of AMIENS (AEIMS, 3= in place names) and ARSINE (AEINRS); 72 of DENIal (ADEINL); 71 of RAINED (AEDIrN); 70 of SALlNE (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 seven of NASTIER. 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 words 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)

<table>
<thead>
<tr>
<th>Word</th>
<th>Source Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>aiens</td>
<td>OED arm 3a, 1489q</td>
</tr>
<tr>
<td>Aniste</td>
<td>Bosnia &amp; Herzegovina., 44°41, 19°14</td>
</tr>
<tr>
<td>Anstie</td>
<td>(name), OED cavendish 1, 1844q</td>
</tr>
<tr>
<td>Asinet</td>
<td>Chad, 12°33, 16°29</td>
</tr>
</tbody>
</table>

ASNITE = Accreditation System of National Institute of Technology and Evaluation, Japan, (eg)

Astein, Austria, 47°43, 14°28
Astin, US Census personal name
Eistin, 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

Estain, 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
Inseat, OED
Itesan, Niger, 13°53, 5°13
neista, OED next
Saiten, Germany, 47°41, 10°16
Sanite, OED
Santie, Ghana, 10°37, -2°05; santie, OED janth
Sai-tien, China, 32°33, 117°31
Seiant, OED
Seitan, North Korea, 37°58, 125°56
Senita, Sierra Leone, 9°13, -12°35; senita cactus, ITIS plant
Sentai, Indonesia, 0°58, 109°49
Setani, Indonesia, -2°06, 138°35
Setina, Greece, 40°52, 21°38; Carex maritima setina, ITIS plant
Haraichthys setnai nigrellus, ITIS animal
Sintea Mica, Romania, 46°25, 21°36

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Sitena, Albania, 39°48, 20°14
staine, OED
stanie, OED stone
Steina, Iceland, 64°41, -14°38; stéina, OED stain
Genus Stenia, Family Orchidaceae, monocot, PS
Taesin, 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, -1°42
Taesin, 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
tineas, OED tinea
tisane, OED
Tseain, OED Mongolian A 1 a, 1893q

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 Irtsane, 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 Tarisne, Morocco, 30°34, -6°34
Tisnare, Chad, 9°57, 14°31
Tisnare Kanal, Sweden, 58°53, 16°05
Tsaren, 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
Chabert 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)

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
Greinats.: Dutch name of Bean goose, Anser fabalis Sahe-h-ye Rigestan, Afghanistan, 3116, 6548
Sargens, OED overplus C, 1640q
Sargai Seritans, Malaysia, 4°43, 103°11
Sargaiting: noise made by rietgans, qv (Digswell Lake Society newsletter)
Sungai Sengarit, Indonesia, 0°15, 110°14

better sources:
REGISTAN: Jeff Grant gives Registan a 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: striegan (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

80 words from SATIRE (AEIRST)
AEIRSTo AIRESTs AIRSETw AISTERT AISTREt AITRES ARESTI ARISTEo ARITES ARTEISt ARTIESa ASTEIRo 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 outre 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).