PAIR AND TRIO ISOGRAMS

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In Language on Vacation, Dmitri Borgmann states that non-pattern words (words with no letter repeated), such as DERMATOGLYPHICS, are just a special case of the isogram, in which each letter is used an equal number of times -- once, twice, three times, etc. Before looking at words where each letter is used more than once, let us exclude the three classes of words not considered legitimate isograms by Mr. Borgmann:

1) palindromes (TERRET, GNIPPING)
2) tautonyms (BERIBERI, TARTAR)
3) words with two or more identical letter groups

As an example of the third class, SENESCENCE has the five letter-pairs CC, EE, EE, NN, SS. Thus there are four E's, but only two C's, N's and S's. The longest known word of this type is UNPROSPEROUSNESS, in which the letter S unfortunately appears four times. Webster's Second Edition lists the word 'antianthropomorphism'. By analogy with 'anthropomorphisms' given in Webster's Third Edition, the plural form ANTIANTHROPOMORPHISMS can be inferred. This amazing 21-letter specimen has nine different letter-pairs, but, alas, also contains three O's.

Having eliminated these three groups of words we can now begin the search for true isograms. Starting with 'pair' isograms, in which each letter appears twice, we find numerous eight-letter examples; here are just a few:

(a) APPEARER
APEASES
CAUCASUS
JIPIJAPA
MILLIEME
MONONYMY
RAPPAREE
VIVIENNE

(b) MESOSOME
PYNEPENY
REAPPEAR
SHAMMASS
SHIPPISS
SIGNINGS
TEAMMATE
TEISTIES

The 'Caucasus' is a mountain range between the Black and Caspian Seas, given in Webster's New Geographical Dictionary, and 'Vivienne' is a common feminine given name.

The words on the left exhibit no letter pattern; however, those on the right include all four letters used in the first half of the word repeating themselves in a different order in the last half -- an interesting phenomenon mentioned in Language on Vacation.
On the ten-letter plane we find the following pair isograms, most of which were noted by Mr. Borgmann in "An Overview of Isograms" in the February 1974 Word Ways:

(a) ARRAIGNING RETARDATED (b) HORSESHOER
CONCIFICATIONS RIVERVILLE INTESTINES
INSCNCIONS SUCCASUNNA FOUCHE COUPE
MA'AMSELLES TESSELLATA SLAKE KALES
NOTIONISTS TETRA-PAPER SWING WINGS
PAPATOETOE TOOL STEELS
REPROPOSES TROMOMETER
REREIGNING WELL-WOODED

'Riverville', 'Succasunna' and 'Pouce Coupe' can be found in the Rand McNally 1972 Commercial Atlas and Marketing Guide; 'swing wings' are mentioned in the World Book Dictionary; and 'Papatoetoe' is a suburb of Auckland, New Zealand's largest city, given in the Timex Index-Gazetteer. 'Slake kales' and 'tessellata' are both taken from Webster's Third Edition.

Longer specimens are very elusive. There are a number of thirteen-letter words which would be twelve-letter isograms if one letter could be removed. For example, INSTALLATIONS and INTERSECTIONS both have an unwanted O, and RESTAURATEURS has an extra R. Nevertheless, there are a number of legitimate twelve-letter examples:

(a) CANCELLANSES INTERINSERTS (b) TRISECTRICES
CHARACTERETH SHANGHAIINGS
CICADELLIDAE TRANSNISTRIA
GRADGRINDIAN TUKITUKIPAPA
HAPPENCHANCE

The only ones not listed in Mr. Borgmann's isogram overview are 'charactereth', as in the Oxford English Dictionary quotation "Religion charactereth itselfe upon the regenerate soule in innocency" (character V.1,b) and 'Tukitukipapa', a Maori place-name in my home province.

Several contrived pair isograms of twelve letters also deserve a mention:

RE-RESIGNINGS acts of resigning again
SPHEROPHORES micro-organisms of the genus Sphero phorus
INGRAMMARING variant of 'grammaring', grounding in the rudiments of grammar
NON-OPPRESSER a nonoppressive ruler
MIS-SENTIMENT evil or misplaced sentiment (cf. mis-speech)

At the fourteen-letter level there are four logological marvels:

INACCIDENTATED united with the 'accidents', in reference to transubstantiation
SCINTILLESCENT scintillating feebly
TAENIODONTIDAE a family of Lower Eocene edentates
UNSUFFICIENCES states of insufficiency
Note that 'Taeniodontidae' is a pair isogram of the 'horseshoer' variety, with letters in the first half repeated in the second.

Good coinages of this length include the following:

**UNCONSTRUCTORS** people who do not construct, or undo the process of construction

**ENDODONTISTISE** to confer the degree of endodontist on (cf. doctorise)

**STUMBLEBUMLETS** petty stumblebums

**GOAT-PHYTOPHAGY** the eating of vegetable matter by goats

**COUNTERTROUNCE** to trounce in retaliation, after being trounced ptero- + pteroid - of the nature of a wing-like fern

The only known pair isogram of more than fourteen letters is the French word **ANTIPERSPIRANTES**. No acceptable English example has yet been discovered, and we are left with the following contrived terms:

**NO PHARYNGOGRAPHY** (16) no description of the pharynx

**ANTITRANSVERSIVE** (16) not transversive, averse to contradiction, opposed to thwarting anything

**TELEPHILOSOPHIST** (16) a philosopher whose views are exerted over a distance (cf. telepsychic, a medium whose psychical powers are exerted over a distance)

**CO-PRAETERPOLITICAL** (18) 'praeterpolitical' means 'lying outside of what is political', so this may be defined as 'unitedly praeterpolitical'

**PSEUDAUTOHERMAPHRODITISM** (24) a superb coinage of uncertain definition, derived from the word 'pseudhermaphroditism' in Webster's Third Edition (proposed by Ralph Beaman)

Surely there must be legitimate pair isograms of more than fourteen letters in some English reference work. Who will be the first to find one?

Next we progress to trio isograms, in which each letter used in the word occurs three times. There are very few examples to be found, and most have only six letters:

**DEEDED** conveyed or transferred by deed

**ESSEES** Essenes, members of an ancient Jewish sect

**FEFFEE** an early form of 'feoffee', a trustee invested with a freehold estate in land

**GEGGEE** the victim of a hoax

**SESES** variant of 'seises', takes possession of

Two nine-letter trio isograms are known and they were both discovered by Darryl Francis:

**SHEESHEHS** plural of 'sheesheh', a tobacco pipe similar to a narghile, but having a glass water-vessel (Funk & Wagnalls New Standard Dictionary)

**SESTETTES** plural of 'sestette', a variant spelling of 'sextet'
Coinages of this length include:

- **GEGGESSES** female geggers or hoaxers
- **MODDOMDOM** a place ruled by 'moddoms', affectedly refined women
- **REPREPPER** one who prepares again
- **TSETSEEST** most like a tsetse fly

In Language on Vacation Dmitri Borgmann mentions the coined word **INTRA-TRINITARIAN**, which consists of the five trios AAA, III, NNN, RRR and TTT, as well as an unwanted sixteenth letter, a fourth I. The H-N Supplement of the Oxford English Dictionary lists the remarkable thirteen-letter word **MONIMOLIMNION**, the lower, denser, non-circulating layer of a meromictic lake. This is very close to being a trio isogram, having the threesomes III, MMM, NNN, OOO and a surplus L. How can we convert it into a trio isogram? Most dictionaries give '‘ll' as a contraction of 'shall' or 'will', for example 'the Chairman'll be here soon'. The '‘ll' contraction can theoretically be added to any noun, so we can add it to MONIMOLIMNION, as in the following sentence:

The MONIMOLIMNION‘ll always be found below the chemocline in a meromictic lake.

In this way it is possible to get an acceptable, albeit apostrophized, fifteen-letter trio isogram. Incidentally, all the letters in this term are found in a seven-letter span of the alphabet (I-O). Perhaps in the future some long dictionary examples will come to light, but in the meantime we'll have to make do with MONIMOLIMNION‘ll.

Unless otherwise stated, words used in this article can be found in the Oxford English Dictionary or Webster’s Second Edition, or inferred from words therein.