

## ELEMENTARY TRANSADDITIONS

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The names of the chemical elements are an interesting group of names to conjure with. First of all, there's over one hundred of them, depending on how you count them. Secondly, there's a good mix of short names, long names, and in-between names.

Transpositions of the element names have been examined exhaustively in previous Word Ways. Dmitri Borgmann authored two articles, "An Elemental Problem" in February 1968, and "Elementary Transpositions" in August 1978. Apart from the occasional new transposition of an elemental name (e.g. GREINTON, RINGTONE), there's probably not much to be added to Dmitri's articles.

I explored transadditions of the names of the elements in a November 1977 article "Elementary, My Dear Reader". In that article, I documented known transpositions of element names, and where an element did not have a transposition, I offered the shortest possible transadditions of the element names. So, for example, my article recorded that ARGON had transpositions such as GROAN and ORGAN, and that BISMUTH had no transpositions, but that its shortest transaddition was THUMBNAILS.

In the intervening 28 years, I know of only one relevant article, Edward Wolpow's "Chemical Improvements" in May 1995 which gave 20 improved transpositions and transadditions. I felt it was time to revisit the topic, in order to see whether further improvements could be engineered.

First off, I have ignored all transpositions of element names. I have simply set myself the task of finding the shortest transaddition of each chemical element name. So, for example, in the case of ARGON, I ignored GROAN and searched for the shortest transaddition of the name. In the table below, I have shown SARONG as a one-letter transaddition. That was easy; even if SARONG didn't exist, I could have used GROANS, ORGANS and other -S plurals. Other element names were not so easy. Let's look at FRANCIUM for example. There is no straightforward transposition, so back in 1977 I offered the three-letter transaddition CALIFORNIUM (another element name, coincidentally). However, in 1995 Wolpow improved this by one letter to obtain the two-letter transaddition MICROFAUNA.

The table below shows 122 chemical element names. Some elements have more than one spelling—e.g. CAESIUM and CESIUM. Some elements have more than one name, e.g. atomic number 41 is both COLUMBIUM and NIOBIUM. All element names can be confirmed in Webster's Third New International, the Merriam-Webster 10th New Collegiate, or the Oxford Concise Dictionary (9th Edition). The table shows the shortest transaddition identified in either the 1977 or 1995 article, followed by the presently-known best shortest transaddition, with an indication of how many letters improvement there has been. The transadditions in the table can be found in Webster's Third International except when labeled: W2 Webster's New International (2nd edition); RHD Random House Unabridged Dictionary; EB Encyclopedia Britannica (11th edition); SAMS Modern Dictionary of Electronics by Howard W Sams; FW Funk and Wagnalls New Standard Dictionary; OED Oxford English Dictionary.

I am aware that Sir Jeremy Morse has coined the excellent WELL-MANICURED as a transaddition of LAWRENCIUM. I had hoped to find this in the extensive list of WELL- words in Webster's Second or the Random House Dictionary, but it's in neither—so I'm sticking with the two word term AMERICAN WALNUT.

|             |                     |                        |
|-------------|---------------------|------------------------|
| Actinium    | multiplicand        | numismatic (2)         |
| Aluminium   |                     | multilingualism        |
| Aluminum    | immunological       | funambulism (2)        |
| Americium   | ceramidium          | ceramidium, paramecium |
| Antimony    |                     | mountainy              |
| Argon       |                     | sarong                 |
| Arsenic     |                     | canister               |
| Astatine    |                     | insatiate              |
| Barium      |                     | Umbrian RHD            |
| Berkelium   | tumblerlike W2      | tumblerlike W2         |
| Beryllium   | lumberingly         | lumberingly            |
| Bismuth     | mintbush W2         | mintbush W2            |
| Bohrium     |                     | bothrium               |
| Boron       | bronco              | bronco                 |
| Bromine     | recombing           | combiner (1)           |
| Cadmium     | miracidium          | music-mad W2 (2)       |
| Caesium     |                     | musicale               |
| Calcium     | calumbic            | aciculum               |
| Californium | California nutmeg   | uncomformablility      |
| Carbon      | borchan             | brochan                |
| Cerium      | muckier             | muckier                |
| Cesium      |                     | miscued                |
| Chlorine    | cholinergic         | chronicle (2)          |
| Chromium    | microphthalmus W2   | mesorchium (4)         |
| Cobalt      | blackout            | backlot (1)            |
| Columbium   | columbarium         | columbarium            |
| Copper      | cropped             | cropped                |
| Curium      | Urumchi RHD         | Urumchi RHD            |
| Dubnium     |                     | unimbued               |
| Dysprosium  | praseodymiums       | praseodymiums          |
| Einsteinium | diminutiveness      | diminutiveness         |
| Erbium      |                     | bumpier                |
| Europium    | promiscuousness     | Eupatorium W2 (5)      |
| Fermium     | flummeries          | flummeries             |
| Fluorine    |                     | flouncier              |
| Francium    | microfauna          | microfauna             |
| Gadolinium  | modularizing OED    | modularizing OED       |
| Gallium     | mulligan            | mulligan               |
| Germanium   | organomagnesium RHD | spermagonium (3)       |
| Gold        | lodge               | lodge                  |

|              |                                  |                             |
|--------------|----------------------------------|-----------------------------|
| Hafnium      | humification                     | infracuman (2)              |
| Hahnium      |                                  | humanish W2                 |
| Helium       |                                  | thelium                     |
| Holmium      | hylocomium                       | hylocomium                  |
| Hydrogen     | greyhound                        | greyhound                   |
| Indium       | cumidin, Numidia                 | cumidin, Numidia            |
| Iodine       | ionized                          | ionized                     |
| Iridium      | rhipidium                        | rhipidium                   |
| Iron         | groin                            | groin                       |
| Joliotium    |                                  | ???                         |
| Krypton      | probankruptcy W2                 | pyknometer (3)              |
| Kurchatovium |                                  | ???                         |
| Lanthanum    | non-Malthusian W2                | non-Malthusian W2           |
| Lawrencium   | two-dimensional circuitry SAMS   | American walnut W2 (10)     |
| Lead         |                                  | plead                       |
| Lithium      | epithelium                       | humility (2)                |
| Lutetium     | multitude                        | multitude                   |
| Magnesium    | germaniums                       | germaniums                  |
| Manganese    | managements                      | managements                 |
| Meitnerium   |                                  | immunoreactive              |
| Mendelevium  | measurement voltage divider SAMS | measurement voltage divider |
| Mercury      | conumerary W2                    | conumerary W2               |
| Molybdenum   | uncommendably W2                 | uncommendably W2            |
| Neodymium    | pyopneumopericardium W2          | endomysium (10)             |
| Neon         |                                  | xenon                       |
| Neptunium    | pneumoperitoneum                 | unnilpentium (4)            |
| Nickel       | clinker                          | clinker                     |
| Nielsbohrium |                                  | hemoglobinurias             |
| Niobium      | bituminous                       | limnobium (1)               |
| Nitrogen     |                                  | orienting                   |
| Nobelium     |                                  | columbine                   |
| Osmium       | stomium                          | stomium                     |
| Oxygen       | exogeny, xylogen                 | exogeny, xylogen            |
| Palladium    | Plumatellidae W2                 | ampullariid FW              |
| Phosphorus   | pseudohypertrophies              | neurohypophysis (4)         |
| Platinum     | penultima                        | penultima                   |
| Plutonium    | rumelgumption                    | outmanipulate               |
| Polonium     | uplooming                        | uplooming                   |
| Potassium    | assumptious W2                   | assumption (1)              |
| Praseodymium | praseodidymium                   | praseodidymium              |
| Promethium   | helminthosporium                 | thermopolium (4)            |
| Protactinium | remultiplication W2              | computerization (1)         |
| Radium       | fluidram                         | Mudiria (1)                 |
| Radon        |                                  | dragon                      |
| Rhenium      |                                  | murrhine                    |
| Rhodium      |                                  | humidors                    |
| Rubidium     | Brundisium EB                    | Brundisium EB               |

|               |                       |                           |
|---------------|-----------------------|---------------------------|
| Ruthenium     | uintatherium          | uintatherium              |
| Rutherfordium |                       | ???                       |
| Samarium      | amateurism            | marasmus (1)              |
| Scandium      |                       | muscadine                 |
| Seaborgium    |                       | troublemakings            |
| Selenium      | semilune, seminule    | semilune, seminule        |
| Silicon       | colicins              | colicins                  |
| Silver        |                       | servile                   |
| Sodium        |                       | podiums                   |
| Strontium     | uromantist W2         | uromantist W2, tentoriums |
| Sulfur        | furloughs             | unfurls (2)               |
| Sulphur       |                       | sulphury                  |
| Tantalum      | multinational W2      | matutinal (4)             |
| Technetium    | mechanotherapeutic W2 | catechumenist W2 (5)      |
| Tellurium     | multinuclear          | multinuclear              |
| Terbium       |                       | resubmit                  |
| Thallium      | limphault W2          | limphault W2              |
| Thorium       | mouthier              | mouthier                  |
| Thulium       | Ultima Thule          | multihull (2)             |
| Tin           |                       | unit                      |
| Titanium      | antirheumatic W2      | mutilation (3)            |
| Tungsten      | unsetting             | unsetting                 |
| Unnilhexium   |                       | ???                       |
| Unniloctium   |                       | multifunction             |
| Unnilpentium  |                       | ???                       |
| Unnilquadium  |                       | ???                       |
| Unnilseptium  |                       | unnilpentiums             |
| Uranium       | lunarium W2           | lunarium W2               |
| Vanadium      | nondesquamative W2    | avizandum (6)             |
| Wolfram       | mayflower             | flatworm (1)              |
| Xenon         | extension             | connex (3)                |
| Ytterbium     | butyrometric          | butyrometric              |
| Yttrium       | ytterbium             | maturity (1)              |
| Zinc          | chintz                | zinco (1)                 |
| Zirconium     | mercurization         | computerizing             |