## LETTER REPETITION IN WEB 3

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What words in the Third Edition of the Merriam-Webster Unabridged Dictionary have the most A's, the most B's, ... the most Z's? The results of a computer search for boldface uncapitalized unhyphenated words is given below. Only one word, pneumonoultramicroscopicsilicovolcanoconiosis, has been omitted from this survey. This word, which should never have appeared in Webster's (its history was discussed by the senior author in the November 1989 Word Ways), is nearly twice as long as the next-longest word in that dictionary. It would seriously distort the statistics for the letter 0 , as it contains nine of this letter, three more than any other word.
A palaecanthocephala tathagatagarbha(s) (6)
B bubbybush flibbertigibbet(s) flibbertigibbety (4)
C chroococcaceae chroococcaceous circumcrescence(s) echinococcic micrococcaceae (5)
D condiddled dadded deadheaded dendrodendritic diddered diddled diddledees didodecahedron disbudded dodded doddered doddled driddled dunderheaded dunderheadedness(es) dyakisdodecahedral dyakisdodecahedron(s) fiddledeedee fiddleheaded granddaddy lepidodendrid(s) lepidodendroid muddleheaded muddleheadedness(es) muddyheaded puddingheaded skedaddled woodshedded (4)
E ethylenediaminetetracetate (7)
F chiffchaff(s) giffgaff(s) giffgaffed giffgaffing riffraff (4)
G aggregating aggreging chugalugging gagging gaggling ganggang(s) gigging giggling gigglingly glugging goggling grigging grogging guggling lallygagging lollygagging zigzagging (4)
H ichthyophthiriasis ichthyophthirius(es) rhamphorhynchid(s) rhamphorhynchoid rhamphorhynchus (4)
I dirigibilities discriminabilities distinguishabilities divisibilities ignitibilities indiscernibilities indiscerptibilities indistinguishability indivisibility infinitesimalities intelligibilities invincibilities (6)
J ajonjoli(s) avijja(s) djokjakarta gastrojejunal gastrojejunostomy hajj(es) hajji(s) jajman(i,s) jajoba jejuna jejunal jejune jejunely jejuneness(es) jejunities jejunity jejunostomy(ies) jejunum jereme jevite(s) jimberjawed jimjams jinglejangle(s) jinjili(s) jipijapa(s) jirijara(s) jiujitsu(s) jiujutsu(s) jogjakarta jojoba jujitsu(s) juju(s) jujube(s) jujutsu(s) ljubljana (2)
K kakkak(s) knickknack(s) knickknackatory(ies) knickknackery(ies) knickknacky kukukuku(s) (4)
L allochlorophyll(s) alloplastically intellectualistically
lillypilly(ies) polysyllabically (5)
M dynamometamorphism hamamelidanthemum immunocompromised mammatocumulus mammectomy(ies) mammiform mammilliform mammogram(s) mammonism(s) mesembryanthemum(s) meshummadim mohammedanism(s) muhammadanism(s) mummiform tetramethylammonium thermometamorphism zamzummim(s) (4)
$N$ inconvenientness(es) nannoplankton nannoplanktonic nondenominational nondenominationalism nonentanglement nonintervention noninterventionist syngenesiotransplantation unconvincingness(es) (5)
0 monogonoporous pseudomonocotyledonous (6)
P aplopappus haplopappus hyperleptoprosopic hyperleptoprosopy snippersnapper whippersnapper (4)
Q qaraqalpaq(s) (3)
R ferriprotoporphyrin ferroprotoporphyrin (5)
S possessionlessnesses (9)
T ethylenediaminetetraacetate tetrasubstituted throttlebottom totipotentiality yttrotantalite (5)
U humuhumunukunukuapuaa (s) (9)
$\checkmark$ overconservative ovoviviparity ovoviviparous ovoviviparously ovoviviparousness vulvovaginitis (3)
W bowwow(s) powwow(s) powwowed powwowing swallowwort whillywhaw(s) whitlowwort williwaw(s) willowware willowweed willowworm willywaw(s) (3)
$X$ dextropropoxyphene executrix(es) exlex(es) exonarthex exotoxic exotoxin hexachlorocyclohexane hexahydroxy hexaxon hexoxide hydroxydeoxycorticosterone hydroxydesoxycorticosterone maxixe(s) myxoxanthin oxyhexactine oxyhexaster paxwax(es) paxywaxy(ies) saxifrax(es) saxitoxin sextuplex xanthotoxin xanthoxenite(s) xanthoxylaceae xanthoxyletin(s) xanthoxylin(s) xanthoxylum(s) (2)
Y acetylphenylhydrazine(s) anhydrohydroxyprogesterone(s) brachydactyly chylophylly cryptozygy cystopyelography cytophysiologically cytophysiology dacryocystorhinostomy dactylosymphysis dihydroxyphenylalanine dyssynergy glycolytically gypsyfy gypsyfying hydrodynamically hydroxydeoxycorticosterone hydroxydesoxycorticosterone hydroxyethyl hydroxyethylation(s) hydroxylysine hydroxymethyl hydroxymethylation(s) hydroxytryptamine(s) hyostyly hyperbrachycephaly hyperbrachycrany hypereuryeny hypereuryprosopy hyperphysically hypocotyledonary hypogyny hypophysectomy hypsibrachycephaly hypsophyllary methylethylpyridine mystifyingly myxomycophyta physiopsychology polycotyledonary polydactyly polyembryony polygyny polyhydroxy polykaryocyte(s) polykaryocytic polymyarity polymythy polyonymy polyoxymethylene polypharyngy polyphyletically polyphylety polyphylogeny polyphyly polyphyodonty polyspondyly polysyllabically polysymmetrically polysynaptically polysyndetically polysynthetically polyvinylpyrrolidone psychoanalytically psychodynamically psychopannychy psychophysically psychophysiologically psychophysiology pyrolytically symphysiotomy symphysodactylia(s) symphytically syndactyly synonymity synonymously synonymy syzygetically syzygy xyloglyphy xylopyrography xylotypography (3)
Z pizzazz(es) razzmatazz(es) (4)
Two words appear in both the $X$ and $Y$ lists, and one in the $L$ and $Y$ lists. The letters of the alphabet can be ranked using this table in terms of their decreasing propensity to appear multiply in Web 3 words: $S$ E IAO NLETR UDMGHKPFBZ YVWQ JX. The letter

U has been demoted from its position at the head of the list because of the anomalous behavior of the Hawaian word humuhumunukunukuapuaa; there are no other words in Webster's having more than four occurrences of the letter $U$ (but dozens with four occurrences).

What does this table tell us about the likelihood of finding specimens with more repeated letters if other dictionaries are consulted? Letters like Y, with 91 occurrences, and J, with 53, cry out for improvement; other candidates are $\mathrm{X}, \mathrm{I}, \mathrm{N}, \mathrm{C}, \mathrm{L}, \mathrm{D}, \mathrm{M}$, $G$ and $W$. And, in fact, most of these can be upgraded by a letter:

Y dacryocystosyringotomy (Web 2), hyperpolysyllabically (Web 2, inferred form)
J jejuno-jejunostomy (Web 2)
X hexahydroxycyclohexane (Random House Unabridged)
I indivisibilities (Web 3, inferred form)
N nonannouncement (Web 2), noncondescendingness (Random House Unabridged)
D disdodecahedroid (Web 2)
G higglehaggling (Web 2, inferred form)
W wow-wow (Web 2)
Jejuno-jejunostomy can be found in solid form in Dorland's Illustrated Medical Dictionary, 24th Edition; wow-wow is listed in solid form in Moby Words by Grady Ward, but his source is unknown. Curiously, there are no words with three occurrences of the letter J anywhere in Webster.
$C$, $L$ and $M$ appear to be the letters most likely to be improved by dictionary-sanctioned entries or inferred forms. Any nominees?

## YES, A SEQUEL

The February 1993 Word Ways ended its review of John Agee's 1991 palindrome book Go Hang A Salami, I'm a Lasagna Hog with the hope that a sequel would appear 2002. Happily, it beat this palindromic deadline by a full 8 years: So Many Dynamos (Farrar, Straus, Giroux), with 59 illustrated palindromes, was published in the fall of 1994. Agee's ability to match an apparently-unpromising palindrome to a droll situation is unparalleled; the venerable WAS IT A RAT I SAW is uttered by a cheese-warehouse worker just passed by another worker with a long tail, trundling a loaded handcart. Frequently Agee exploits the palindromic possibilities of given names, showing characters named Nate, Todd, Don, Sam, Ed, Diana, Otto, Ron, Otis, Dave, Gina, Flo, Rena, Gabe, Elsa and Rob in odd situations. Even Remarkable Elba Kramer does her thing in a boxing ring!

