

HINTS FOR SOLVING PUZZLES

Phytolexicon cruciformis CROSSWORDS

Most of the solutions are families, genera or species of vascular plants taken from Stace or from Heywood et al. *Flowering Plant Families of the World*, so not necessarily in the British flora. There are some non-vascular plants of all groups. The list of short generic names given below may be helpful. There are also some words that might be found in a botanical or ecological glossary, and a small number of non-botanical English words, labelled (English) in the clue. There are more of these in some crosswords I wrote in my first batch, which have been mixed in with my second batch. The label (English name) means the English name of a plant. In the case of genera or species the name of the family is usually included unless it would make the clue too obvious. The assignment of families is to the best of my belief current in 2014, but genera keep swapping families recklessly, and there may have been changes by the time you read this; in particular, I have assumed that Chenopodiaceae has been gobbled up by Amaranthaceae. In the case of non-vascular plants I have included a few extra botanical details for those readers who are not bryologists, algologists, mycologists or lichenologists. I have tried to make these puzzles brainteasers but not excessively difficult. I hope you will relish the challenge.

I wish to thank Drs. David Chamberlain, Liz Kungu, Stephan Helfer and Rebecca Yahr, and Prof. David Mann, for help with non-vascular plants.

R.W.

NOTES ABOUT THE PUZZLES

Many of the clues include the name concealed forwards or backwards in a phrase or as an anagram, but English names or other hints are often included. Sometimes I have only been able to find a near-anagram, and if so I have cryptically indicated letters that should be subtracted from or added to the anagram; in particular 'Noël' means omit L, 'Y not' means omit Y from the anagram and 'with/without energy means add/omit E from the anagram before solving. Where two letters lying together in parallel words form the symbol of an element (and in a few other cases) this has

been given as a clue; this may help you to put in some letters. See the list of short generic names given below

GENERAL HELP FOR CODEWORD PUZZLES

Those of you who turn to the puzzle page of the Edinburgh *Evening News* will know how to solve these puzzles. They look like a crossword, but there are no clues. Instead, each number encodes a different letter, and the same number always encodes the same letter (see example number v code letter table below). Because the digits 6, 8 and 9 are not easy to distinguish in font Arial of small size I have not used the codes 8, 9, 18, 19, 28 or 29; the highest code is therefore 32. The words are almost all genera of plants (vascular, bryophytes, algae, fungi and lichens) in the British flora. Names read across or down and do not cross thick lines. Vascular plants in my database are mostly taken from Stace 2nd edn. (so some genera in the BSBI list are excluded), seaweeds from Braune W. & Guery M.D. *Seaweeds* (in RBGE library; includes genera not found in British coastal waters), and other groups from appropriate authoritative on-line databases. Despite *Quercus*, *Aquilegia*, *Equisetum*, *Juncus* and *Juniperus*, Q and J are very rare in generic names so I had to include genera and a few families containing those letters from Heywood et al. *Flowering Plant Families of the World*. The mean length of words in my database is 9.5 letters, compared the mean for standard English prose which I think is about 6. When constructing the puzzles I have tried to include some fairly short names of genera, mostly of vascular plants, that are well known and should be easy to guess, but I have also included some that are long and obscure unless you are a lichenologist or algologist.

Hints on how to proceed:

- Count the number of occurrences of each code. The most common letters in the puzzles are, in descending order of frequency, A, I, E, U, S, R, L and O, with A and I accounting for about 25% of the total. The least common letters are, in ascending order of frequency, Q, W, F, J, K, V, Z and X.
- Look for word endings. Many genera end in –A (especially –IA and –LA), –US and –UM; the terminal sequence x, x, y is very likely to represent –LLA. There are, however, many other endings.

- There aren't many generic names shorter than 7 letters; a list of all those in the database from which the Codewords were compiled is shown below. Among these words are some that contain the same letter twice, e.g. *Hebe*; you should be able to guess some words from the pattern of codes, and this will give you their letters.

Example code letter and number table

1	2	3	4	5	6	7	10	11	12	13	14	15
	B	O	T		S	C	I	E	Y			
16	17	20	21	22	23	24	25	26	27	30	31	32
X		W	D									

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

TABLE OF SHORT GENERIC NAMES WITH DIFFERENT NUMBER OF LETTERS

IVA	CHARA	SEDUM	ADONIS	CONIUM	LAMIUM	POSTIA
POA	CICER	SENNA	AGARUM	CONYZA	LANZIA	POTTIA
ZEA	DASYA	SISON	ALARIA	CORNUS	LAURUS	PRATIA
ACER	DRABA	STIPA	ALISMA	CORREA	LEOTIA	PRUNUS
AIRA	DRYAS	TAMUS	ALLIUM	COSMOS	LESKEA	PTERIS
AMMI	ERICA	TAXUS	ALOINA	COTULA	LEYMUS	PYROLA
ARUM	ERUCA	THUJA	ANEURA	CRAMBE	LILIUM	QUALEA
ATLA	FAGUS	TILIA	ANKYRA	CREPIS	LOLIUM	QUIINA
BETA	FICUS	TSUGA	ARABIS	CRINUM	LUZULA	RADULA
GEUM	FOMES	TUBER	ARALIA	CROCUS	LYCIUM	RESEDA
HEBE	FUCUS	TYPHA	ARCTOA	CYNARA	MALOPE	RICCIA
ILEX	GAGEA	ULMUS	ASARUM	DAHLIA	MEESIA	RUPPIA
IRIS	GLAUX	ULOTA	ASEROE	DAPHNE	MELICA	RUSCUS
IXIA	INULA	UREDIO	ATROPA	DATURA	MENTHA	SAGINA
LENS	JANIA	USNEA	AUCUBA	DAUCUS	MIBORA	SALVIA
LUMA	LARIX	VERPA	AXYRIS	DILSEA	MILIUM	SCILLA
MEUM	LASER	VICIA	AZOLLA	DIRINA	MONTIA	SECALE

RHUS	LEDUM	VIGNA	BALLIA	ECHIUM	MYCENA	SESELI
ROSA	LEMNA	VINCA	BANGIA	EGERIA	MYRICA	SICYOS
ROYA	LINUM	VIOLA	BASSIA	ELIXIA	NARDIA	SILAUM
RUTA	LOTUS	VITIS	BELLIS	ELODEA	NARDUS	SILENE
SASA	MADIA	YUCCA	BERTIA	ELYMUS	NEPETA	SOLIVA
SIDA	MALUS	ACACIA	BERULA	EPHEBE	NEREIA	SORBUS
SIUM	MALVA	ACAENA	BETULA	ERINUS	NESLIA	STICTA
ULEX	MNIUM	ACERAS	BIDENS	EUTYPA	NOSTOC	SUAEDA
ULVA	MUCOR	ACORUS	BIFORA	EXIDIA	NUPHAR	SYNURA
ABIES	MYLIA	CISTUS	BLASIA	FATSIA	ONONIS	TAONIA
ADOXA	NAJAS	CITRUS	BORAGO	FERULA	OPHRYS	TERANA
AGAVE	NONEA	CLEOME	BRODOA	FILAGO	ORCHIS	THOREA
AINOA	PANUS	CNICUS	BROMUS	GALEGA	OTIDEA	THYMUS
AJUGA	PARIS	CODIUM	BUNIAS	GALIUM	OXALIS	TIMMIA
ALCEA	PHLOX	COLURA	BUNIUM	GONIUM	OXYRIA	TOLPIS
ALNUS	PHOMA	CONIUM	CAKILE	HASLEA	PADINA	TRACYA
ANODA	PICEA	CONYZA	CALTHA	HEDERA	PANNUS	TRAGUS
APERA	PIKEA	CORNUS	CATENA	HOLCUS	PELLIA	TRINIA
APIUM	PINUS	CORREA	CEDRUS	HYDNUM	PENIUM	TULIPA
ASTER	PISUM	COSMOS	CHENIA	HYELLA	PEZIZA	UDOTEA
AVENA	PSORA	COTULA	CHORDA	HYPNEA	PHACUS	URTICA
BRIZA	PYRUS	CRAMBE	CICUTA	HYPNUM	PHLEUM	VANKYA
BRYUM	RHEUM	CREPIS	CISTUS	IBERIS	PICRIS	VESTIA
BUXUS	RIBES	CRINUM	CITRUS	ISATIS	PICTUS	VISCUM
CALLA	RUBIA	CROCUS	CLEOME	JUBULA	PIERIS	VOLVOX
CAREX	RUBUS	CYNARA	CNICUS	JUNCUS	PITHYA	VULPIA
CARUM	RUMEX	DAHLIA	CODIUM	KALMIA	POHLIA	XERULA
CHAGA	SALIX	ACTAEA	COLURA	KERRIA	POPOVA	XYLOMA
				KURZIA	PORINA	ZINNIA