D. A. Preece: *Daisy chains — a new combinatorial concept*

"Daisy, Daisy, give me your answer, do!"

If n is odd, a daisy chain for the units of $\mathbb{Z}_n$ is obtained by arranging the units of $\mathbb{Z}_n$ on a circle in some order

$$a_1, a_2, \ldots, a_{\phi(n)}$$

such that the set of differences

$$b_i = a_{i+1} - a_i$$

($i = 1, 2, \ldots, \phi(n)$, with $a_{\phi(n)+1} = a_1$) is itself the set of units. I shall give various constructions for daisy chains for odd values of n having prime power decompositions of the forms p^i , $p^i q^j$, and pqr . Some of the constructions depend on results given some years ago by the astonishingly prescient Cameron and Preece in their web-notes on primitive lambda-roots. I shall also be addressing the important combinatorial concepts of fertility and green manures[1]

[1] In agriculture, a "green manure" is a crop that is not harvested, but is instead ploughed in, for future benefit.