Champernowne's number, described 1933 by D.G. Champernowne is perhaps the first real number proved to be a "normal" decimal.

$C = .01234567891011121314151617\ldots$ continued as an infinite decimal where all whole numbers appear in order. A "normal" decimal contains every possible digit pattern. It is also totally and completely "fair". Each digit occurs $\frac{1}{10}$ of the time. Each 2 digit pattern occurs $\frac{1}{100}$ of the time. Each 3 digit pattern occurs $1/1000$ of the time... and so on.

The idea came to me, while mystifying myself with the concept of different sizes of infinity, of creating a "Champernowne Embedding" function. I'll call it CE for short. What we do to find $CE(x)$ is to place each decimal digit of x between digits of C. For example $CE(\frac{1}{3}) = .03132333435363\ldots$ and $CE(7/9) = .071727374757677787\ldots$

For terminating decimals we fill in with zeros. For example $\frac{1}{4} = .25000000\ldots$

So $CE(\frac{1}{4}) = .021520304050607080\ldots$

Now let us go down the rabbit hole!

$CE(C) = .0011223344556677889911001111\ldots$

How about $CE(CE(1/3)) = .001321334253637384\ldots$

And $CE(CE(CE(\frac{1}{3})))$  ?????

More to come --- Maybe?