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6 May 75

Dear Dr Sloane,

congratulations on the publication of your book on integer sequences. I purchased a copy some time ago and have refered to it from time to time.

Thank you for your letter about my paper [1]. The most important series contained there is $s(x)$ which gives the number of stable trees with n points. It is tabulated as s_n in the appendix of [2] for $1 \le n \le 45$.
[3] — I think

Fundamental to finding $s(x)$ are the series $B_1(x)$ and $b_1(x)$ as explained in [1]. These count the number of rooted & free, respectively, trees of with n points that contain no bunch. They are tabulated in the appendix of [3] for $1 \le n \le 45$. A photo-copy is enclosed. I have a more extensive (n about 200) private computer listing for $s(x)$, $B_1(x)$ and $b_1(x)$ if you are interested.

As for stable unicyclic graphs ($u_2(x)$ in [1]) all I have is

no. of points	3	4	5	6	7	8
stable u.g.	1	2	3	8	22	62

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You might also be interested in the following:

Doug Grant has counted the number of trees I_n with stability index n. A table for $1 \le n \le 40$ appears in the appendix of [2] [3].

Allen Schwenk has shown that the number $r_p^{(n)}$ of trees with p points not containing a limb of n points is independent of the structure of the limb. A table of $r_p^{(n)}$ with $1 \le p \le 39$ and $2 \le n \le 8$ appears in the appendix of [4]. I have shown in [3] [2] that $r_p^{(n)}$ is the number of trees with p points and no n-cycle automorphism (except for $n = p = 2$).

Ronald Read has counted <u>all</u> acyclic hydrocarbons. A table appears in [5].

[6] may also contain new series.

Yours faithfully

K.L.McAvaney

[1] Combinatorial Maths, Springer-Verlag Lecture Notes in Maths 403, 79-85

[2] D.D. Grant, ditto , 29-52

[3] K.L. McAvaney, Stability & Enumeration, M Sc Thesis, Uni of Melbourne, Australia 1974

[4] A.J. Schwenk, The Spectrum of a Graph, PhD Thesis, Uni of Michigan, USA 1973

[5] Graph Theory and Applications, Springer-Verlag Lecture Notes in Maths 303, 243-260.

[6] F. Harary & E. Palmer, Graphical Enumeration, Academic Press, 1973.

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letter

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