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106. H. W. Becker: *Combinatory interpretations of Bell's numbers.* A110

These are evolved by iterated matrix multiplication of the table of Stirling's num-·ers, second kind (E. T. Bell, Amer. J. Math. vol. 61 (1939) p. 89; Ann. of Math. ·l. 39 (1938) p. 539). They enumerate: (1) the number of distributions of n individ-·s into crews (or circuits), with m levels of hierarchy (or insulation, or jumpers) in · organization chart; (2) the number of rhyme schemes, or logical relatives (C. S. ·rce, Amer. J. Math. vol. 3 (1880) p. 48) with m plexes of nuance possible to each ·ter. (Specialized, these yield compositions and partitions of numbers under m modes · addition, as normal, weak, strong, and so on.) The readily formulated breakdowns · formulated according to (1) number of crews, or, equivalently, (2) number of dif-·rent letters, and to (1) size of first crew, or, equivalently, (2) number of a's. The ·ove may further be interpreted as a generalization of the substitution cycles and ·scribed polygons of Touchard (Acta Math. vol. 70 (1939) p. 249): in which the cycles · separated by up to m types of parenthesis; or the polygons are bounded by lines · up to m different colors simultaneously. (Received March 21, 1946.)

107. H. W. Becker: *The general theory of rhyme.*

Prosodic rhyme schemes are called sequations, abstractly, of umbra @. They clas-·y according to range (number of different letters), terminal (last letter), singletons ·rhymed letters, more generally any partition of letters), and quantum (number of ·, more generally any composition of letters). Generalizations are the multipolar, ·ltinomial, multinary, multiplex, and multilinear sequations, having respectively · types of accent, alphabet, partial identity, nuance of nuance, and parallelism. ·ecialized patrices (expansions of a matrix, with given path restrictions) are those · which: each letter rhymes s times or more, or less; some letter, or none, occurs s-ply; · rhyme repeats within s adjacencies; the differences of successive letters are re-·cted; given letters are forbidden, or fixed, in certain positions; all numbers in the ·rtition, or range, are odd, or even; there are no nonconsecutive rhymes (these are ·morphic with compositions); the previous is further specialized, to be isomorphic ·h partitions. In permuted sequations, the debuts of the different letters are in non-·habetic order: enumerated by differences of zero, integer powers, and the poly-·mials $(@M+X)^n$. These polynomials kernel the lexicon theorems, by which the ·rices are well-ordered. All are generated by variations of $\exp t@=\exp(e^t-1)$. (Re-·ved March 21, 1946.) A110

108. A. T. Brauer: *On a theorem of M. Bauer.*

In generalization of a theorem of M. Bauer (J. Reine Angew. Math. vol. 131 ·6) pp. 265–267) the following theorem is proved. Let $f(x)$ be a polynomial with ·gral rational coefficients which has at least one real root. Let $G(k)$ be the group ·e residue classes relatively prime to k, and H a subgroup which does not contain · class of numbers congruent to -1 (mod k). Then $f(x)$ contains infinitely many ·me divisors which do not belong to the classes of H. It follows for instance that each ·n polynomial contains an infinite number of prime divisors which are quadratic ·-residues for a given prime of form $4n+3$. (Received March 20, 1946.)

109. A. T. Brauer and Gertrude Ehrlich: *On the irreducibility of ·tain polynomials.*

Pólya has proved the following theorem (Jber. Deutschen Math. Verein. vol. 28 ·919) pp. 31–40): If for n integral values of x, the integral polynomial $P(x)$ of degree