

lent special impetus to the study and development of sacred hermeneutics. The growth of this peculiar by-product of scholasticism is outlined, with references to the work on number symbolism of the Venerable Bede, St. Augustine, and numerous other prominent ecclesiastics. In particular, a remarkable example is given of a ninth century rendering of the account given in Genesis 18 of the conflict of the 318 servants of Abraham against the four kings. The classic example of the number of the beast is also studied, and it is shown that its interpretation serves to establish the date of the writing of Revelation, long in dispute, as well as affords a key to the system of number symbolism used by St. John.

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SOME REMARKABLE DETERMINANTS OF INTEGERS.

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1. THE determinants in this note are arithmetical rather than algebraic in character; their properties, not obvious by the usual reductions, follow immediately from simple considerations in the theory of numbers. Throughout, letters other than x and functional signs denote positive integers, and $[x]$ is the greatest integer in x .

2. Let $D_n | F(k), G(k) |$ denote the determinant of the n th order whose first and last columns are respectively $F(1), F(2), \dots, F(n)$, and $G(1), G(2), \dots, G(n)$; and whose $(1+k)$ th column ($k = 1, 2, \dots, n-2$) is derived from the first by prefixing k zeros and repeating in succession each element of the first $(1+k)$ times, until in all a column of n elements has been written down

$$(1) \quad D_n | F(k), G(k) | \equiv \begin{vmatrix} F(1) & 0 & 0 & \cdots & G(1) \\ F(2) & F(1) & 0 & \cdots & G(2) \\ F(3) & F(1) & F(1) & \cdots & G(3) \\ F(4) & F(2) & F(1) & \cdots & G(4) \\ F(5) & F(2) & F(1) & \cdots & G(5) \\ F(6) & F(3) & F(2) & \cdots & G(6) \\ \cdot & \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot & \cdot \end{vmatrix}.$$