

= 0, or till the said series of fractions is terminated, or exhausted. And then it would follow, from what has been shewn above concerning the literal parts of the terms of the said series, that the said series which is equal to $\overline{a+b}^m$, or the m th power of the binomial quantity $a+b$, would be $a^m + \frac{m}{1} A a^{m-1} b + \frac{m-1}{2} B a^{m-2} b^2 + \frac{m-2}{3} C a^{m-3} b^3 + \frac{m-3}{4} D a^{m-4} b^4 + \frac{m-4}{5} E a^{m-5} b^5 + \frac{m-5}{6} F a^{m-6} b^6 +$ &c, continued to b^m . Q. E. I.

28. This method of discovering (by a conjecture grounded on some trials in particular examples) that the generating fractions by which the numeral co-efficients of the third, and fourth, and other following terms of the series that is equal to $\overline{a+b}^m$ (or any integral power of the binomial quantity $a+b$), are derived from m (the index of the power to which the said binomial quantity is raised), or from the co-efficient of the second term of the said series (which is always equal to the said index) are $\frac{m-1}{2}$, $\frac{m-2}{3}$, $\frac{m-3}{4}$, $\frac{m-4}{5}$, $\frac{m-5}{6}$, &c, is suggested by Professor Saunderson, in the second volume of his Algebra, in the chapter on the Binomial Theorem; where the Reader will find a good explanation and illustration of the said celebrated Theorem, by a variety of examples, both in the case of Integral powers, and in the case of Roots and other Fractional powers, and even in the case of Negative powers, and of powers that are both fractional and negative; but no demonstration of it in any case, not even in that of Integral and Affirmative powers.

29. We have now shewn with demonstrative certainty that the literal parts of the terms of the series which is equal to $\overline{a+b}^m$, or the m th power of the binomial quantity $a+b$, when