i sit numerus omni assignabili major, Fractio quoque $\frac{i-1}{i}$ ipsam unitatem adæquabit. Ob similem autem rationem erit $\frac{i-2}{i} = 1$; $\frac{i-3}{i} = 1$; & ita porro; hinc sequitur fore $\frac{i-1}{2i} = \frac{1}{2}$; $\frac{i-2}{3i} = \frac{1}{3}$; $\frac{i-3}{4i} = \frac{1}{4}$; & ita porro. His igitur valoribus substitutis, erit $a^z = 1 + \frac{kz}{1} + \frac{k^2z^2}{1.2} + \frac{k^3z^3}{1.2.3} + \frac{k^4z^4}{1.2.3.4} +$ &c. in infinitum. Hæc autem æquatio simul relationem inter numeros a & k ostendit, posito enim $z = 1$, erit $a = 1 + \frac{k}{1} + \frac{k^2}{1.2} + \frac{k^3}{1.2.3} + \frac{k^4}{1.2.3.4} +$ &c., atque ut a sit $= 10$, necesse est ut sit circiter $k = 2,30258$, uti ante invenimus.

117. Ponamus esse $b = a^n$, erit, sumto numero a pro basi Logarithmica, $lb = n$. Hinc, cum sit $b^z = a^{nz}$, erit per Seriem infinitam $b^z = 1 + \frac{knz}{1} + \frac{k^2n^2z^2}{1.2} + \frac{k^3n^3z^3}{1.2.3} + \frac{k^4n^4z^4}{1.2.3.4.} +$ &c., posito vero lb pro n, erit $b^z = 1 + \frac{kz}{1}lb + \frac{k^2z^2}{1.2}(lb)^2 + \frac{k^3z^3}{1.2.3}(lb)^3 + \frac{k^4z^4}{1.2.3.4}(lb)^4 +$ &c.. Cognito ergo valore litteræ k ex dato valore basis a, quantitas exponentialis quæcunque b^z per Seriem infinitam exprimi poterit, cujus termini secundum Potestates ipsius z procedant. His expositis ostendamus quoque quomodo Logarithmi per Series infinitas explicari possint.

118. Cum sit $a^\omega = 1 + k\omega$, existente ω Fractione infinite parva, atque ratio inter a & k definiatur per hanc æquationem $a = 1 + \frac{k}{1} + \frac{k^2}{1.2} + \frac{k^3}{1.2.3} +$ &c., si a sumatur pro basi Logarithmica, erit $\omega = l(1 + k\omega)$ & $i\omega = l(1 + k\omega)^i$.

Mani-