

case we start with $(a + bx^n)^p$. If the learner's memory were not very robust and his spirit did not condemn the aid of a rule in rhyme, I should prefer to dictate to him the answer in a more condensed and winning form, viz:—

Monomial's index leave unchanged,
 Except to lessen when required ;
 Binomial's increase by one,
 But change not if 'tis less desired.

This, it seems to me, is Todhunter's third chapter in a nutshell. I am inclined to view it as one of the few unobjectionable outcomes of the modern over-examination system, it having been devised in 1868 when preparing for an approaching hour of trial. Another such product of the same period but of a less artificial character was published in the *Journal of Education* for 1875 with the title "On Integration by Parts." Both of them I have found of considerable service in teaching.

Historical Note on the so-called Simson line.

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The theorem that the feet of the perpendiculars drawn to the sides of a triangle from any point in the circumference of the circumscribing circle are collinear is ascribed (Gerg. Ann. iv., p. 250, ca. 1814) by Servois, though not with confident knowledge, to Simson. Baltzer, who gives us this information, refers also to Gerg. Ann. xiv., p. 28, p. 280, and to Poncelet. Fuller details, showing how the question of authority has hitherto stood, will be found in an extract from a letter of Mr Mackay's in *Nature*, xxx., p. 635. Mr Mackay has further stated that he has not found the property mentioned in any of Simson's published works.

It seems, therefore, of some interest to point out that the theorem is enunciated and proved in a paper with the title "Mathematical Lucubrations," published in Leybourn's *Mathematical Repository*, old series, vol. II., p. 111. The author is Mr William Wallace, assistant mathematical master in Perth Academy, afterwards professor in the Royal Military Academy of Woolwich, and in the University of Edinburgh. The date of publication is 1798. No reference is made to Simson, the theorem apparently being given as new.
