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THE QUADRATURE OF A CIRCLE DETERMINED BY ITS SUPERFICIES.

To the Editor of the Acadian Magazine.

SIR,

In your Magazine of July last, I observed a communication signed Δ, said to be "A new and correct method of finding the Quadrature of a Circle." The title together with the plan adopted by your correspondent, excited in my mind no little curiosity, to know whether his hypothesis would stand the test of a strict investigation. His assumption is, that the quadrature of a circle is equal to a square described upon the chord of three-fourths of a quadrature of another circle, whose radius is the side of a square inscribed in the first circle. Or upon the same principle, the quadrature of a circle is equal to a square inscribed in another circle, whose radius is the chord of three-fourths of a quadrant of the first circle. It is obvious that the result of either method will be the same as that of the other, and that in the figure the chord N H, of the quadrant N H, is equal to chord A R, of three-fourths of the quadrant A S B, (which accounts for the analogy in the triangles C O E, A D R) but that either N H, or A R is equal to the quadrant C F B, is a point which remains highly problematical. The circumstance of N H being made radius, and describing a circle upon the same centre, and finding the chord of the quadrant to be the side of a square, without the first and within the second circle, has no influence in support of the hypothesis, as that must take place whatever may be the radius in the first circle, for as circles are to each other, in the duplicate ratio of their diameters, so squares are to each other in the duplicate ratio of their sides, and by 47.5. Euclid, the square of the subtense of the quadrant N H, is equal to twice the square of the radius O N or O H, and consequently when N H is made radius, it will describe a circle, the subtense of whose quadrant squared, will be equal to twice the square of the subtense of the quadrant, within the first circle. Hence it appears that a square inscribed within a circle is equal in magnitude to half the square described about it, and a circle described about a square is double that inscribed within the square. From these analogies it is obvious that the chord Y V must be the side of a square within the circle Y V, and without the circle N H, and can have no bearing in the present question. But are there no criterion by which your correspondent's theory can be established or overthrown? He alledges there are none except actual measurement. But if he intends, by actual measurement, the application of a measuring line or rule, to the periphery of the circle, the inaccuracy of the plan must still leave the question unsettled.

But as the magnitude or superficial contents of circles are equal to the radius, multiplied by half the circumference, consequently if the