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## LEIBNIZ ON MATTER AND FORM

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THE scientific movement at the close of the Middle Ages was generally regarded as anti-Aristotelian, and science has now been so long in the saddle that Aristotle's physics seem to many to be definitely unhorsed. Still, a scientist here and there, as the late Sir Bertram Windle, has seen a modern tendency to reinstate the central tenet of Peripatetic physics, the doctrine of matter and form. Hard upon the rise of the sciences came the development of mathematics. And it is interesting to note that mathematics show a similar tendency to confirm hylomorphism. Mathematicians have often turned philosophers, and one item that stands out in the encounter of mathematics with philosophy is the difficulty of the extensive continuum. In this connection Boscovich, Bayma, Bergson, Russell, Whitehead are names that leap to mind. Bergson found the continuum so insoluble to reason that he was prompted to throw reason overboard and go in for intuition.

The difficulty is an old one. A case in point is Leibniz. This versatile genius, co-discoverer (with Newton) of the differential calculus, found the continuum a *bete noir*. He compares it to the problem of predestination, declaring,

"Revera ambo hi labyrinthi sunt theologorum et philosophorum, qui omnis aetatis theologos et philosophos divexarunt".<sup>1</sup> And in his second letter to Pere Des Bosses (S. J.) he shows that, unable otherwise to solve the mystery, he at one time even held matter to be actually divided into infinitely small particles.

"Statuo materiam actu fractam esse in partes quavis data minores, seu nullam esse partem quae non actu in alias sit subdivisa."

He escaped from this extreme position only by finally denying extended matter altogether, and defining quantity as number. "Quantitas igitur est numerus partium. Hinc manifestum in re ipsa quantitatem et numerum coincidere."<sup>2</sup>

Mathematics cannot get along without numbers; and points provide the numbers. But a system of points is a logical construct. And mathematicians are justified in forming such constructs for the purpose of reducing extension to mathematical treatment. The fallacy is in

<sup>1</sup> *De Conformitate Fidei cum Ratione*, p. 24.

<sup>2</sup> *Introduction to Metaphysics*.