$+ \cdots + G_n$. Let $\overline{C}_n$ denote the point set which is the sum of all the links of the chain C_n, while C denotes the set of all points that the sets $\overline{C}_1, \overline{C}_2, \overline{C}_3, \cdots$ have in common. The point set C is a simple continuous arc* from A to B, lying entirely in the set $M - (G_1 + G_2 + \cdots)$.†

It follows that $M - (G_1 + G_2 + \cdots)$ is connected.

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AN ANALOGUE TO PASCAL'S THEOREM.

BY DR. A. L. MILLER.

A DECAGON is said to be doubly inscribed in a cubic if every odd side of the decagon cuts three even sides on the cubic and and every even side cuts three odd sides on the cubic.

That there exist decagons doubly inscribed in a cubic can be seen as follows. Let the decagon D have for sides $s_1, s_2, s_3, \cdots, s_{10}$ and let the cubic be C_3. Let

$$s_1 \text{ meet } s_{10}, s_2, s_4 \text{ on } C_3,$$

$$s_3 \text{ meet } s_2, s_4, s_6 \text{ on } C_3,$$

$$s_5 \text{ meet } s_4, s_6, s_8 \text{ on } C_3,$$

$$s_7 \text{ meet } s_6, s_8, s_{10} \text{ on } C_3,$$

while s_9 is the line joining the third intersection of s_8 with C_3 with the third intersection of s_{10} with C_3. Then, by Cayley's‡ theorem, s_9 also cuts s_2 on C_3.

By a repetition of this last theorem we obtain the following theorem analogous to Pascal's theorem:

If a decagon be doubly inscribed in a cubic the remaining ten intersections of the odd sides with the even ones lie on a conic.

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* If A and B are distinct points, a *simple continuous arc* from A to B is defined by Lennes as a bounded, closed, connected set of points containing A and B, but containing no proper connected subset containing both A and B. See N. J. Lennes, "Curves in non-metrical analysis situs with an application in the calculus of variations," *American Journal of Mathematics*, vol. 33 (1911) and this BULLETIN, vol. 12 (1906), p. 284.

† For a proof of this statement, see the proof of Theorem 15 of Moore's paper, loc. cit., pp. 136–9.

‡ Cayley: *Cambridge and Dublin Mathematical Journal*, vol. 3.