

ON MEREDITH'S SOLE POSITIVE AXIOM

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In obtaining 6 and 11 below from 1, C. A. Meredith used eighteen detachments. Exactly twenty-one years after the dating of the original paper [1], it was noticed that the deduction could be refined to sixteen detachments.

1. $CCCpqrCsCCqCrtCqt$
- D1.1 = 2. $CpCCrCCsCCqCrtCqtuCru$
- D2.n = 3. $CCrCCsCCqCrtCqtuCru$
- D3.1 = 4. $CCCpqrCCqCrtCqt$
- D3.2 = 5. $CCqCrtCrCsCqt$
- DD4DD4.5.2.2 = 6. $CpCqp$
- D6.4 = 7. $Cs4$
- D4.7 = 8. $CCsCAuCsu$
- D8.8 = 9. $CC4CAuCAu$
- DD4D4.9.7 = 10. $CCpqCCpCqrCpr$
- D8D5.10 = 11. $CCpCqrCCpqCpr$

This deduction saves a detachment in each of its two halves. Roughly speaking, in the first half Meredith developed by 1 and detached from 3 where this develops by 4 and detaches 2. In the second half $Cs6$ was already present and used in place of 7, which was eventually needed anyway to get 10.

REFERENCE

- [1] Meredith, C. A., "A single axiom of positive logic," *The Journal of Computing Systems*, vol. I (1953), pp. 169-170.

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