

ON HAUBER'S STATEMENT OF HIS THEOREM

CYRIL F. A. HOORMANN, JR.

Hauber's¹ theorem is one which is often referred to,² yet it seems that few people have actually seen Hauber's original work. Peano,³ for example, cites Schröder, and Schröder in turn says that his source for the theorem is Venn.⁴ In Scholz and Hasenjaeger,⁵ reference is made to Hauber's book, but the section referred to is §293, where Hauber employs the theorem to prove several corollaries to a theorem from Euclid, rather than to §287, where Hauber gives the explicit statement of his theorem.

Hauber's book, *Scholae logico-mathematicae*, is devoted to showing a number of theorems and corollaries which can be proved using Euclid's fourth postulate. And it is from observing the method of proof which is used for many of the results that he comes to formulate his theorem. Hauber recognized its significance and specifically referred to it in his preface as an important contribution.⁶

Hauber's own statement of the theorem is as follows:

Si genus aliquod dividatur in suas species duplici ratione, et singulis speciebus unius divisionis respondeant singulae species alterius ut attributa: vicissim etiam singulis speciebus alterius divisionis singulae species prioris ut attributa respondebunt.

Ut si genus quoddam A dividatur primum in species b , c , ac deinde in species β , γ : ut Omne A sit aut b aut c , et rursus Omne A sit aut β aut γ ; et praeterea, quae sint ex specie b , iis attribuitur β ; quae ex specie c , iis γ ; his igitur positis, vicissim, quae sunt ex specie β , iis attribuetur b ; et quae ex specie γ , iis attribuetur c .

Quod sic ostendetur, Si non iis A , quae sunt ex specie β , omnibus attribuitur b : cuicumque eorum non attribuitur, ei attribuetur c ; quoniam Omne A est alterutrum, aut b aut c , per primam divisionem. Sed omnibus c etiam γ attribuitur per hypothesin. Ergo et omni β , quod non est b , attribuitur γ . Hoc vero fieri nequit: nulli enim β attribuitur γ , quia per hyp. nullum A est et β et γ , sed alterutrum eorum, per divisionem secundam. Non ergo iis A , quae sunt ex specie β , non omnibus attribuitur b : ergo omnibus attribuitur. Similiterque ostendetur, omnibus, quae sunt ex specie γ , etiam c attribui. Quod erat ostendendum.

Received March 19, 1970