THE RELATION OF WEAKLY DISCRETE TO SET
AND EQUINUMEROSITY IN MEREOLOGY

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INTRODUCTION*

This paper deals with a formal system introduced by Leśniewski called mereology, in which, as the name implies, the concept of "party of the whole" is primitive. This system studies the properties of the collective class. Mereology is based on ontology, a formal system in which "is" is the primitive term. Ontology in turn is based on protothetic or on propositional calculus and quantification theory.

The collective class differs greatly from the distributive class. However, under the condition, "the a's are weakly discrete", which we introduce, the collective class of the a's and the distributive class of the a's become alike with respect to equinumerosity. We are thus able to prove the analogs of three important set-theoretic theorems under this condition. Two of these were previously known for the condition, "the a's are discrete", but the third is an entirely new theorem.

We then prove that for a certain class of statements dealing primarily with equinumerosity, discrete and weakly discrete are inferentially equivalent.

ONTOLOGICAL PRELIMINARIES

Ontology has the following very intuitive sole axiom.

01 $\quad [Aa] \therefore A\varepsilon a . \equiv : [\exists B] . B\varepsilon a : [CD] : C\varepsilon A . D\varepsilon A . \supset . C\varepsilon D : [C] : C\varepsilon A . \supset . C\varepsilon a$

There is no rule which guides the use of capital and small letters. For easier understanding we shall use capital letters for names that are known to be proper and lower case letters otherwise. In this system two types of

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