LEŚNIEWSKI AND FREGE ON COLLECTIVE CLASSES

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Between 1927 and 1931 Leśniewski published a series of articles on the foundations of mathematics in the Polish journal *Przegląd Filozoficzny*.[1] 65% of the work is devoted to various axiomatizations of Leśniewski's mereology (a theory of collective classes) while the remainder takes up various related issues. In the third part of this series Leśniewski informally sets forth his notion of a collective class, criticizes certain descriptions of distributive classes, and argues that there is no justification in Frege's statement that the conception of a class as consisting of individuals, so that the individual thing coincides with the unit class, cannot in any case be supported.[2]

Leśniewski's refutation of Frege's statement appears to be unknown to western logicians and philosophers. None of the recent books on Frege (e.g., Angelelli, Egidi, Sternfeld, Thiel, Walker) mentions it. Luschei, in his *The Logical Systems of Leśniewski*, mentions it but does not present it. My purpose here is to state and explain Leśniewski's refutation in the hope that it will help stimulate interest in his work. Since Leśniewski bases his refutation on his concept of a collective class, I shall first briefly and informally discuss this concept.

Leśniewski reports that in 1911 he became acquainted with symbolic logic and Russell's antinomy when he came upon Jan Łukasiewicz's *O zasadzie sprzeczności u Arystotelesa* (The Principle of Contradiction in Aristotle).[3] Initially Leśniewski was averse to symbolic logic but Russell's antinomy stimulated him to reflect on those cases in which he actually did consider an object to be (or not to be) a class of objects, and to analyze critically the assumptions of the antinomy from this point of view.[4] Taking the view that if some object is a class of objects *a*, then some object is an *a*, he dismissed empty classes as being mythological entities. He held that time and again it occurs that an object is a class of objects *a* and at the same time it is a class of completely different objects *b*, and he used the following example to illustrate this point. Consider the following segment: