1116-03-1193 **Maarten McKubre-Jordens*** (maarten.jordens@canterbury.ac.nz), School of Mathematics & Statistics, University of Canterbury, Private Bag 4800, Christchurch, Canterbury 8140, New Zealand. *Non-Classical Mathematics, Forward and In Reverse.*

Non-classical mathematics is mathematics done with non-classical logics. Examples include constructive mathematics, relevant mathematics, and paraconsistent mathematics. This talk concerns the interaction of classical mathematics with non-classical mathematics, and is a presentation with two aspects: Forward, and In Reverse.

In the Forward aspect, we investigate formalizations of various paradoxes, such as Russell's, in which individual parts of the paradoxical conclusion are provable, but where the formal theory itself is non-trivial. Formal theories in which such statements are provable in the literature almost invariably explicitly use a paraconsistent logic, and often lack motivation. But here, by suggesting extra criteria on what is admissible as a proof, we provide an alternative motivation wherein less violence is done to the notion of provability and some long-held intuitions concerning paradoxes are explicitly incorporated.

In the Reverse aspect, we study various versions of logical principles sometimes known as "paradoxes of material implication" over minimal logic, and find a clean set of groups into which these principles can be distinguished, which is indiscernible within classical (or even constructive) contexts. (Received September 17, 2015)