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**Manoj Gopalkrishnan\*** (manoj.gopalkrishnan@gmail.com). *On the Mathematics of the Law of Mass Action.*

In 1864, Waage and Guldberg formulated chemistry's "Law of Mass Action." Since that time, chemists, chemical engineers, physicists and mathematicians have amassed a great deal of knowledge on the topic. In our view, sufficient understanding has been acquired to warrant a formal mathematical consolidation. A major goal of this consolidation is to solidify the mathematical foundations of mass action chemistry: to provide precise definitions, elucidate what can now be proved, and indicate what is only conjectured. In addition, we believe that the law of mass action is of intrinsic mathematical interest and should be made available in a form that might allow it to transcend its application to chemistry alone. We are led to a dynamical theory of sets of binomials over the complex numbers. This is joint work with Len Adleman, Ming-Deh Huang, Dustin Reishus and Pablo Moisset. (Received February 09, 2009)