The looming crisis enveloping the pharmaceutical industry, the shortage of new drugs, portends a critical healthcare problem for the Western medicine system. Pharmaceutical R & D expenditures are approaching $100B worldwide; however, only a paucity of new drugs is reaching the market. This presentation will explore the antecedents for the current dilemma and suggest approaches to address it. Considering a synthesis between the modern Western methods of drug discovery, firmly rooted in the scientific method and the well established use of medicinal botanicals from ancient and enduring traditional medicine systems offers such a path. This approach; involving the principles of ethnobotony, pharmacognosy and evochemistry will be illustrated with examples of our prior and current research in the field of ethnobotanical medicinal discovery.