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A new SIS model has been developed and is used to study and analyze the transmission and dynamics of malaria. The model which takes into consideration the demography of the vector that transmits the parasite that causes malaria is different from the standard SIS model in that oscillatory dynamics is naturally achieved as opposed to being forced via a forcing function. The model will be compared with the standard Ross–Macdonald SIS model to highlight its novelty. (Received September 14, 2010)