

**A new dammarane triterpenoid and other secondary metabolites from selected three
annonaceous plant species**

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This dissertation reports on the isolation and characterization of three terpenoids including a new dammarane triterpenoid from *Isolona heinsenii*, sterols from *Lettowianthus stellatus* as well as a flavonoid and phenyltetralin lignin from *Polyceratocarpus schefflerii*. The larvicidal activities against *Aedes aegypti* mosquito larvae of crude extracts and some isolated compounds are also reported. The ethanol extracts of root and stem bark of *I. heinsenii* yielded two known terpenoids, namely polycarpol (**75**) and the indole sesquiterpene, polyalthenol (**76**). Polyalthenol and the new dammarane triterpenoid, heinsenol (**81**) were also isolated from the ethanol extract of the leaves of *I. heinsenii*. The ethanol leaves extract of *L. stellatus* yielded a mixture two steroids β -sitosterol (**103**) and stigmasterol (**104**). From the ethanol extracts of the root bark of *P. schefflerii* a known flavonoid, catechin (**105**) and the known phenyltetralin lignin, lyoniside (**108**) were isolated. The structures of the isolated compounds were determined by using NMR and MS data. All crude extracts from *P. schefflerii* showed poor larvicidal activity. On the other hand, the crude extracts of leaves and root bark from *I. heinsenii* exhibited good larvicidal activity with LC₅₀ values of 50 μ g/mL and 30 μ g/mL; and LC₅₀ values 20 μ g/mL and 10 μ g/mL for 48 hours and 72 hours, respectively. The ethanol stem bark extracts of *I. heinsenii* showed a moderate activity by having 200 μ g/mL and 150 μ g/mL for 48 hours and 72 hours, respectively. When evaluated for their larvicidal activity, polycarpol exhibited activity with LC₅₀ value 200 μ g/mL after 72 hours while polyalthenol exhibited significant activity with LC₅₀ value 20 μ g/mL, 5 μ g/mL and 3 μ g/mL after 24, 48 and 72 hours. The results obtained are clear indication of the potential that still lies in uninvestigated plants species for control of malaria vector.