

Chemical investigations of the fruits of *Lettowianthus Stellatus*

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The phytochemical investigations of fruits of *L. stellatus* (Annonaceae) as reported in this Dissertation have yielded four hitherto unknown compounds, namely 3,7- bis-geranyl substituted naphthoquinones (20 and 21), a bicyclo[3.3.0]-1-octen-3,8-dion-4- (3,7-diniethyl-octa-3,6-diene)-6-(2,6-dimethyl hepta-1,5-diene)-6-carboxylic methyl ester 22 and 1,4-dihydroxy-2,6-bis-geranyl substituted inden-3-one (23). All the isolated compounds were inactive in the brine shrimp test, as was the crude extract. Antimalarial and antitrypanosomal tests of the four compounds will be carried out at the Swiss Tropical Institute in Switzerland, but results from these tests will not be available for this Dissertation. The 3,7-bis-geranyl substituted naphthoquinone 21 was found to be very similar to 20. However, compound 20 has keto groups attached to C-1' and C-1" of the geranyl units, whereas 21 has enol-groups at the same positions. This suggested that 20 and 21 are biosynthetic modifications of one another. Although the MS of compound 21 did not reveal the molecular ion peak at m/z 584, other spectral data, especially NMR spectra, provided enough information which enabled elucidation of structure 21. Bicyclo [3.3.0]-1 -octen-3,8-dion-4-(3,7-dimethyl-octa-3,6-diene)-6-(2,6- dimethyl hepta-1,5-diene)-6-carboxylic methyl ester (22) was isolated from the least polar VLC fraction. Purification of 22 by using Sephadex LH-20 was difficult because the solubility of 22 in methanol was poor and only a mixture of methanol/chloroform was found to be an ideal solvent system for this purification. 1,4-Dihydroxy-2,6-bis-geranyl substituted inden-3-one (23) was isolated from the most polar VLC fraction. The purification of 23 just like that of 22 caused some difficulties owing to the lack of the suitable solvent system for purification on Sephadex LH-20. The combination of methanol/chloroform was found to be unsuitable. For this reason compound 23 could not be purified completely using the available laboratory facilities. However, the available spectral data of the impure sample were sufficient for identification of compound 23.