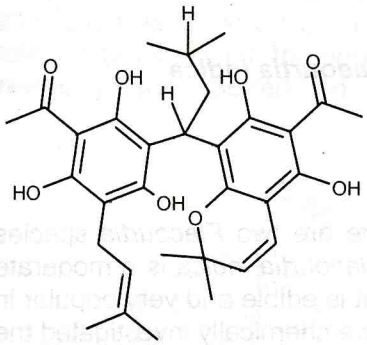
New Benzopyran from *Acronychia pedunculata* and its biopesticide activity on *Aedes aegypti*

Yasodha Ahilan and Vijaya Kumar*
Department of Chemistry, University of Peradeniya, Peradeniya

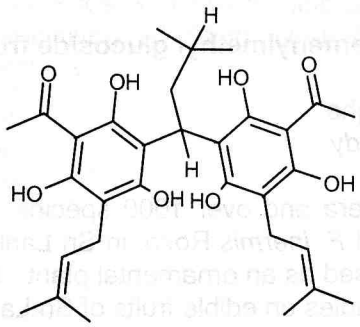
We have previously reported the isolation of a new benzofuran, 7-acetyl-4,6-dihydroxy-2-(1-methylethyl)-5-(3-methyl-2-butenyl)benzofuran along with acrovestone, demethylacrovestone and demethylacronylin from the dichloromethane extract of *Acronychia pedunculata* fruits. Further study has revealed the presence of a novel benzopyran derivative **(1)** and the sesquiterpenoid, clovan-2,9-diol in the extract, the structures of which were established using NMR spectra and comparison of spectral data with those reported for related compounds.

NMR data revealed the presence of two phenyl rings, two acetyl groups, an isopentenyl side chain, a gem-dimethyl substituted chromene ring and five hydroxyl groups in **(1)**. Signals corresponding to a five-carbon moiety suggested that the two rings were connected *via* this bridge. The proton NMR, ^{13}C NMR and the 2D NMR of the new compound **(1)** was similar to that of demethylacrovestone **(2)** except for additional signals for the chromene ring and the absence of signals for one isopentenyl group indicating that its structure could be derived by the cyclization of an isopentenyl group in demethylacrovestone. The NMR values for the chromene ring were comparable with those reported for the chromene ring in acronyculatin E **(3)** which has been isolated from the same plant. Cyclization of the isopentenyl group is possible in two different modes giving two possible structures for benzopyran (**1**). They are 6-acetyl-5,7-dihydroxy-2,2-dimethyl-8-[1-(2-methylpropyl)-1-(3-acetyl-5-(3-methyl-2-butenyl)-2, 4, 6-tri-hydroxy-benzyl)]benzopyran (**1**) and 8-acetyl-5,7-dihydroxy-2,2-dimethyl-6-[1-(2-methylpropyl)-1-(3-acetyl-5-(3-methyl-2-butenyl) -2,4,6-tri-hydroxy-benzyl)] benzopyran.

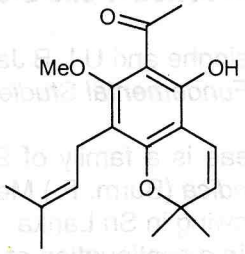
Mosquito larvicidal studies confirmed that the benzopyran (**1**) was weakly active (LC_{50} 10.0) against 2nd instar larvae of *Aedes aegypti*.



(1)



(2)



(3)

* vkumar@pdn.ac.lk Tel: 081-2394436