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FURTHER TERPENOIDS FROM THE OCTOCORALLIANS
Cespitularia erecta, *Xenia viridis* AND A *Clavularia* SP.

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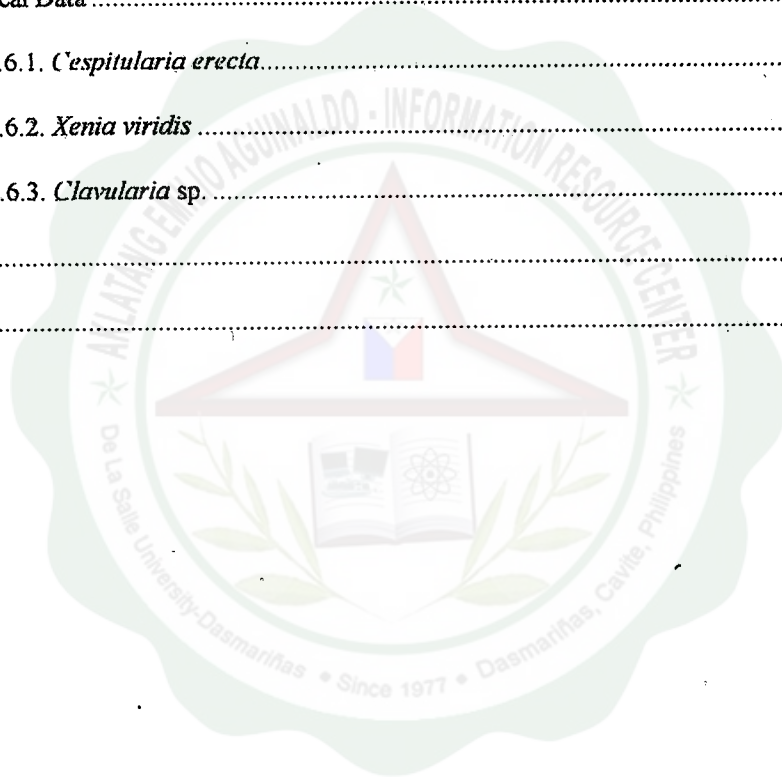
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GLOSSARY

COSYDQF. Correlation spectroscopy, double quantum filtered, a magnetization transfer n.m.r. experiment where the pulse sequence generates oscillating populations of coupled multiplets which when detected gives a 2D spectrum. The resulting spectrum has the normal ^1H spectrum along the diagonal with off-diagonal cross peaks indicating coupled chemical shifts.

DEPT. Distortionless enhancement by polarization transfer. An n.m.r. pulsed experiment that distinguishes CH , CH_2 , and CH_3 groups by their different heteronuclear multiple quantum coherences,

IR. Infrared radiation, referring to the region of the electromagnetic spectrum over the wavelength range of 0.5 to 1000 μm (or conveniently, 4000 to 200 cm^{-1}). IR absorbance by molecules result in vibrational and rotational transitions.

Mesoglea. The gelatinous filling between the outer and inner cell layers of a two-layered animal such as a jellyfish.

n.m.r. nuclear magnetic resonance, a transfer of energy that occurs when a nucleus precessing in a magnetic field is tipped by a secondary field rotating at the same rate. The energy is lost by the secondary field.

Polyp. An organism typically with a body wall of two layers and tubular in form, one end being closed and attached and the other with a central mouth usually surrounded by tentacles.

Symbiont. Organism involved in a symbiotic relationship.

Symbiosis. Mutually beneficial interrelationship between two organisms of different species.

Terpenoid. Organic substances that have carbon skeletons which can be dissected into branched C_5 units called isopentane or isoprene.

UV. Ultra-violet, the region in the electromagnetic spectrum that covers the range 10 -380 nm. Molecular interactions with uv radiation results in electronic excitation.

XHCORRD. Heteronuclear (nucleus X - hydrogen) correlation spectroscopy, a pulsed sequence n.m.r. experiment which maps the ^{13}C nuclei with coupled ^1H nuclei.

Zooid. Individual in a colonial organism. Zooids are produced sexually, but "founder" zooids can reproduce vegetatively to build the colony.

Zooxanthellae. Brown algae.



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ABSTRACT

Spectroscopic investigation of isolates from the lipophilic extracts of three octocorals have added to the rich harvest of terpenoid compounds from these organisms. *Cespitularia erecta* from the Philippines have afforded the first verticillane-type (geranyl-geraniol cyclized at C2 to C7 and at C3 to C16) diterpene from a marine source. The new compound is keto-functionalized at C12, with the C6 methyl, C6, C7 and C8 further forming a furan ring. *Xenia viridis* from New Caledonia yielded two related xenicane diterpenoids differing in functionalization at C7 and C8. The more polar compound has an oxirane ring while the second compound is olefinic. Although acetoxy substitution in the xenicanes is common among previously reported compounds, the two compounds are unique in having both C16 and C17 of the prenyl side chain functionalized. The oxirane ring was found to be susceptible to a slow ring opening under the acidic conditions of the n.m.r. experiment resulting in a C6:C7 double bond and conversion of the epoxide to an alcohol at C8. An unknown Philippine *Clavularia* sp. yielded two more dollabellane diterpenes. The compounds are derivatives of stolonidiol. One is a diacetate with the second acetate on a new oxygenated position on stolonidiol monoacetate: C-2. The other compound is esterified at C-2 with a fatty acid residue.

