

ATTRACTANTS AND TRAIL-FOLLOWING COMPOUNDS FOR THE
SAINTONGE TERMITE: TRICYCLOEKASANTALAL AND DIHYDRO-
AGAROFURAN FROM SANDALWOOD OILS AND A SESQUITER-
PENOID C₁₅H₂₄O FROM PINE WOOD INFESTED WITH LENZITES
TRABEA.

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The trail pheromone cis-3, cis-6, trans-8-dodecatrienol, isolated from Reticulitermes virginicus and from Lenzites trabea-infested pine wood (Matsumura, 1968, 1969) also is a trail pheromone for Reticulitermes santonensis (Ritter, Coenen-Saraber, 1969). From the fungus-infested wood we could isolate a second compound which is very effective in inducing trail-following and which also appears to be a potent attractant. This again raises the question whether social insects derive their trail substances from their food or synthesize these substances themselves (Blum and Brand, 1972).

The isolated compound is a sesquiterpenoid C₁₅H₂₄O which has not yet been identified, although some of its chemical and chromatographic properties and its spectral data (IR, MS, NMR) have already been determined. For further structural and biological investigations we sought readily available sources from which it might be isolated in larger quantities.

Sandalwood oils contain compounds with the elementary formula C₁₅H₂₄O, some of which have gas-chromatographic properties very similar to those of the isolated compound. None of them, however, appears to be identical with it.

From East-Indian sandalwood oil we could isolate a compound C₁₂H₁₈O, which was active for the Saintonge termite both as an attractant and as a trail-following compound. The presence in East-Indian sandalwood oil of this compound, tricycloekasantalal (an oxidation product of α -santalol) was already known (Kretschmar et al., 1970), but not its activity for termites.

From West-Indian sandalwood oil we similarly isolated dihydroagarofuran, C₁₅H₂₆O which so far has only been found in agarwood oil (Maheshwari et al., 1963). This compound too was active in both bioassays mentioned above.

Mixtures of either of the two identified compounds with the natural trail pheromone were found to be exceedingly active. Laboratory and field experiments indicate the possibility of using these compounds in termite control.

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