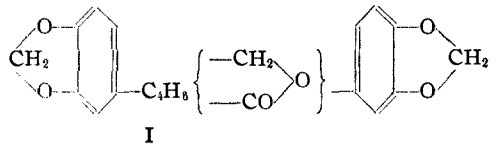
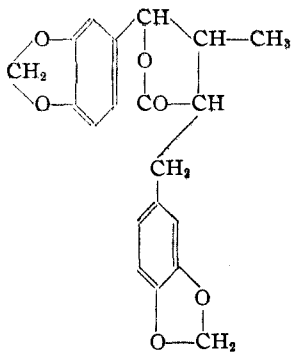
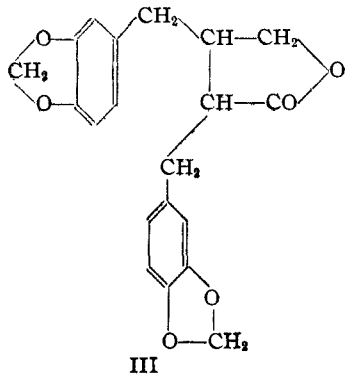
and Bee, *J. Chem. Soc.*, **97**, 1028 (1910)], the constitution (IV) has been proposed for this resinol independently by Haworth (private communication) and the author [Briggs, Peak and Wooloxall, *Proc. Roy. Soc. N. S. Wales*, (in press)].



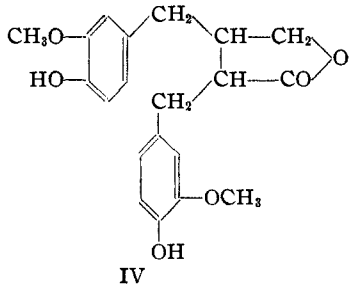
I



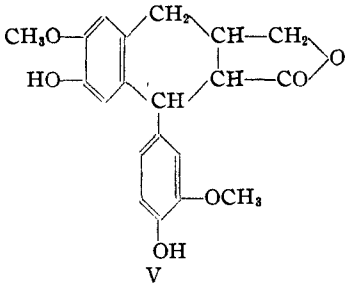
II



III



IV



V

Thus the structure suggested for cubebinolide (III) is very similar both to matairesinol and sulfite liquor lactone (tsugaresinol) (V) [Erdtman, *Ann.*, **513**, 229 (1934); Kawamura, *Bull. Imp. Forestry Expt. Sta. Tokyo*, No. 31, 73 (1932); Emde and Schartner, *Helv. Chim. Acta*, **18**, 344 (1935)].

The transformation of matairesinol into a substance of structure (III) is being attempted to prove this assumption.

DEPARTMENT OF CHEMISTRY
AUCKLAND UNIVERSITY COLLEGE
AUCKLAND, NEW ZEALAND
L. H. BRIGGS

RECEIVED JUNE 19, 1935

THE SOLUTION OF TITANIC HYDROXIDE IN HYDROGEN PEROXIDE

Sir:

Several months ago, in the course of some attempts to crystallize a titanium per-salt, we observed an interesting phenomenon, to which there is apparently no reference in the literature. We found that freshly precipitated and well-washed titanic hydroxide dissolves in dilute hydrogen peroxide to give a clear yellow solution. Thus, 50 cc. of a suspension containing 0.0035 mole of $Ti(OH)_4$, treated with 0.4 cc. of 30% H_2O_2 (0.0035 mole), became clear after one hour at room temperature, or after a few minutes when warmed. Larger amounts of hydrogen peroxide hasten solution; much smaller amounts of hydrogen peroxide give solutions with pronounced opalescence.

The solution has colloidal properties. Diffusion through a collodion bag takes place to only a very slight extent. Nearly complete precipitation occurs on addition of small amounts of electrolytes, but high concentrations of hydrogen peroxide render the precipitation less complete. The precipitates in these cases are yellow and contain hydrogen peroxide.

Gels can be prepared by boiling down the solutions and then cooling. Some were obtained which could be remelted by warming. Some were also obtained which had the property, known for other gels, of temporarily liquefying on vigorous shaking.

The most nearly similar phenomenon of which we are aware is the solution of freshly precipitated and washed manganese dioxide in concentrated hydrogen peroxide (see *C. A.*, **5**, 2470 (1911)).

The solution not only is of some scientific interest, but also may find considerable application in the arts.

DEPARTMENT OF CHEMISTRY
JOHNS HOPKINS UNIVERSITY
BALTIMORE, MARYLAND
S. KATZOFF
R. ROSEMAN

RECEIVED JUNE 21, 1935

THE POLYMERIZATION OF ETHYLENE INDUCED BY METHYL RADICALS

Sir:

In continuing our work on chain reactions induced by azomethane, we have found that ethylene is rapidly polymerized at temperatures near 300° by small quantities of azomethane. Over a ninety-fold range of azomethane pressure and a ten-fold range of ethylene pressure, and total pressures all below 60 mm., the initial rate depends