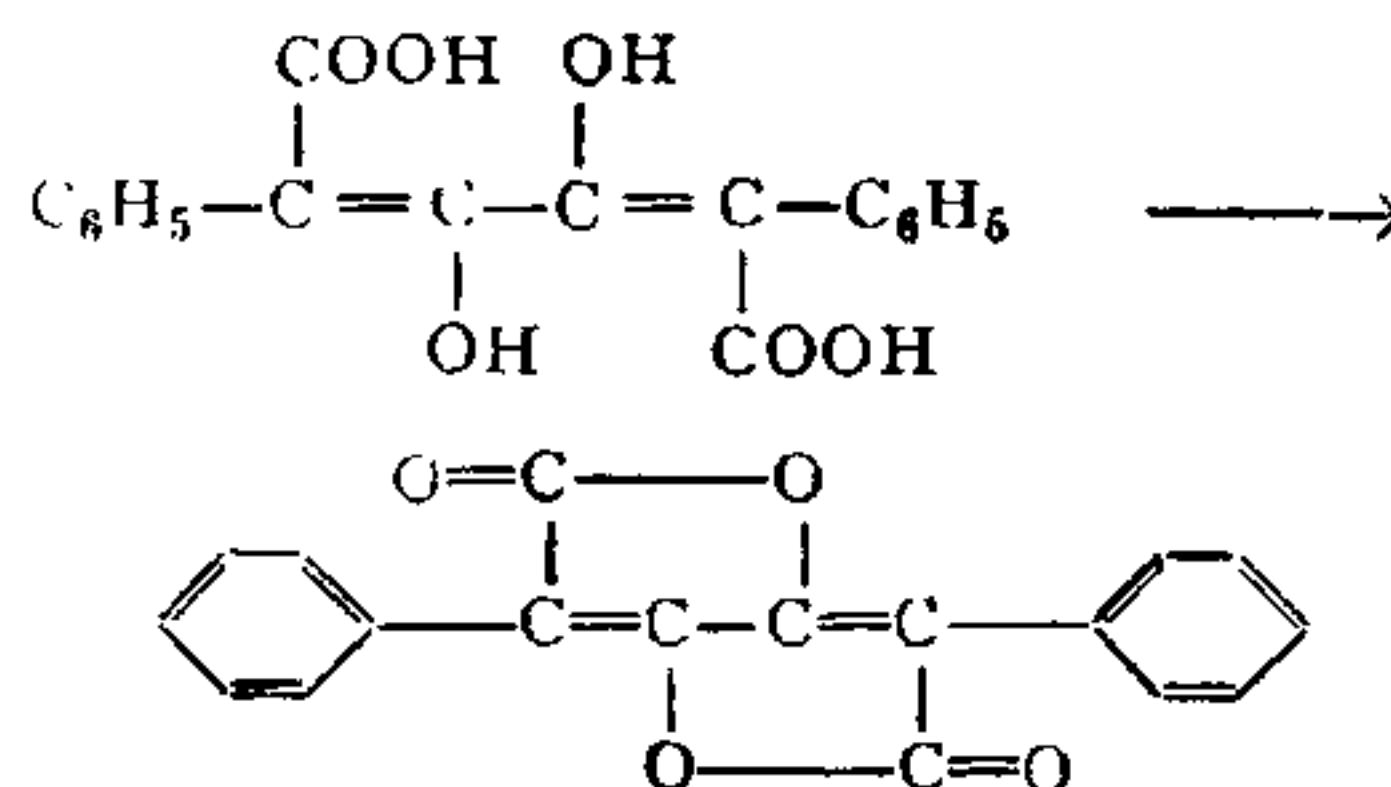
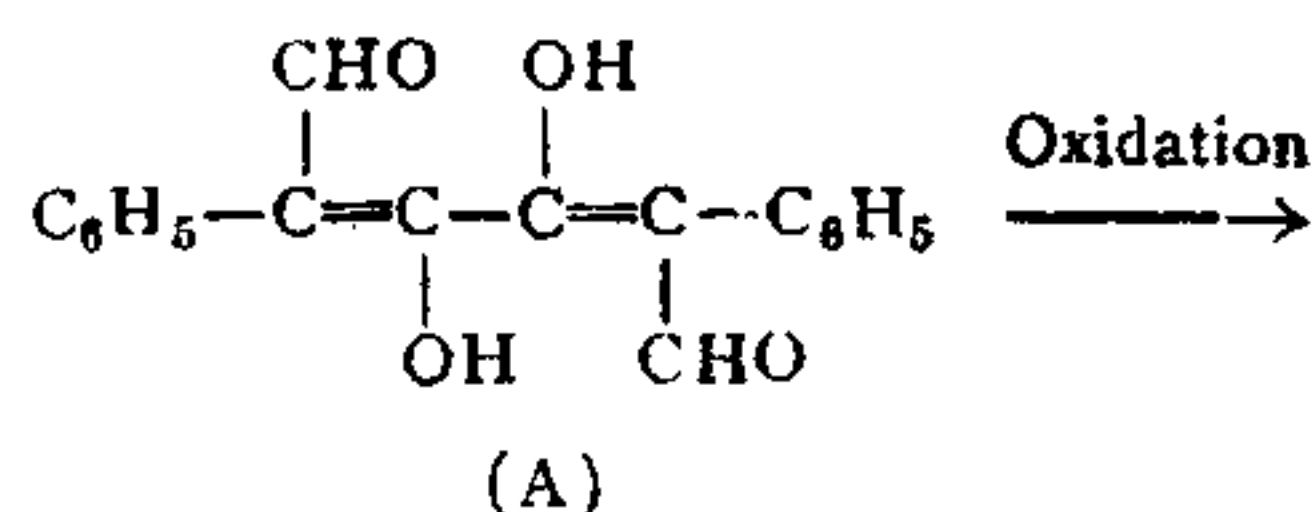
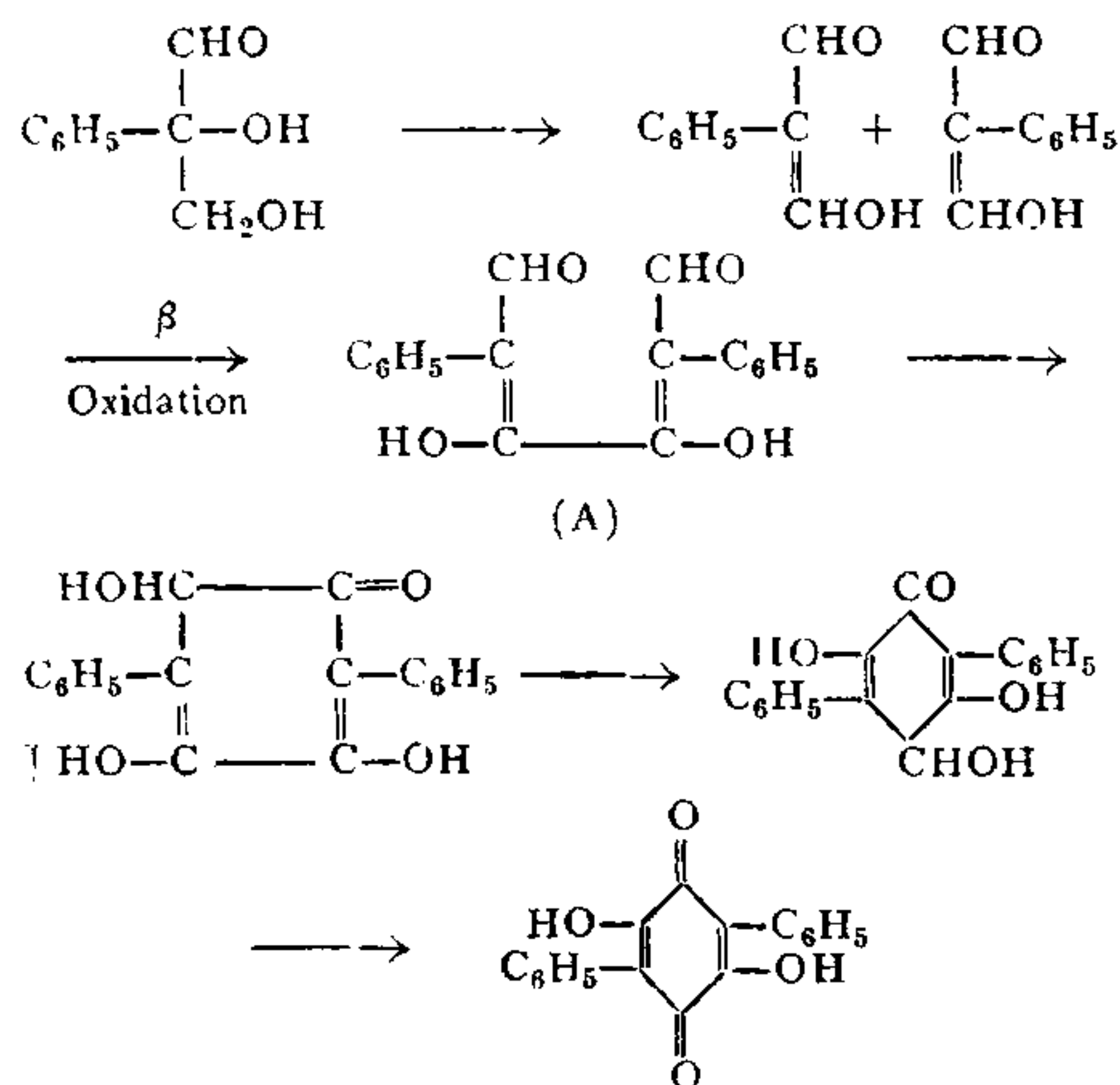


3. The pulvinic acid derivatives are obviously made up of two  $C_9$  units of the forked type. Based on the principle of  $\beta$ -linking of  $C_9$  units, the polyporic acid derivatives also should consist of two such units. Hence both the structures may be considered to be derived from the same precursor, viz., two units of  $\beta$ -phenyl glyceric aldehyde (see Seshadri<sup>1</sup>) or structure A. Though no precise information is available on the details, the following tentative suggestion is made on the possible route of biosynthesis of the two types.



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## DETECTION OF THE NEUTRINO

THE existence of the free neutrino has been experimentally established by a group of scientists led by Frederic Reines and Clyde Cowan, Jr., at the United States Atomic Energy Commission Laboratories.

Over 20 years ago, Fermi and Pauli theorized on the existence of such a particle in order to account for the mysterious disappearance of energy from beta decay. However, the neutrino has hitherto escaped the direct detection deemed necessary to prove its existence in the free state away from the radioactive atom from which it is emitted.

The neutrino interacts only very weakly with material, and could be expected to penetrate a distance of many light years through solid matter. Consequently, the detector used is of extraordinary design. In it more than 100 gal-

lons of ordinary water containing a dissolved cadmium salt served as a target for the neutrinos coming from the reactor. This target was "watched" by a scintillation system, which is in principle like the scintillation detector used by uranium prospectors but which contained over 1,000 gallons of sensitive liquid and 330 large photomultiplier tubes. Despite its huge size and the many billions of neutrinos from the reactor which passed through it each second, only a few neutrino captures were observed in the target water each hour.

During the experiment normally stable protons (hydrogen atoms in the water) were made to absorb a neutrino, emit a positive electron, and become neutrons, and the discovery marks the first time that man has knowingly caused a direct reversal of beta-decay.