above 35°, particularly at the boiling temperature. Modifications of the process consist in carrying out the reaction under 10 atmospheres pressure in the absence of solvent, and also in vapour phase.

(iii) Thermal fission : Cracking *p*-Cymene at 300°-450° with activated bleaching earths produce toluene and propylene,[18] *e.g.*, with 'tonsil' and at 420°, 60·5% toluene, besides 10% unchanged p-Cymene, saturated hydrocarbons (1·6%; b.p. 50°-60°, and 2%; b.p>180°) and 25% gas (80% propylene) is obtained.[19] Other methods[20,21] cover the production of toluene and propylene using a catalyst comprising of alumina and silica.

Selective elimination of a methyl group from the isopropyl residue as methane has been effected by Ostromisslensy and Shepard[22,23] by passing the hydrocarbon admixed with carbon dioxide through a tube at 650° : 40-50% yield of 4-methyl styrene is thus obtained. This is further investigated in detail by Breneck and Muller[24] who used iron, copper and aluminium catalysts. It is possible under suitable conditions to obtain 62% conversion into the styrene.

The selective dehydrogenation of p-Cymene into 4-α-dimethyl styrene achieved by Balandin and co-workers[12] is a recent contribution to the subject and marks an important advance. At 625°, with vanadium pentoxide as a catalyst, optimum conversion (63·4%) into the styrene takes place in presence of two mols of carbon dioxide. Improvements[25] of this process consist of reducing the partial pressure of p-Cymene by mixing with carbon dioxide and carrying out the reaction at reduced pressures and at lower temperatures, *e.g.*, 500°.

Conclusion : The utilisation of *p*-Cymene in the past for the production of synthetic thymol and menthol is well known. As indicated above, varieties of products could be obtained from p-Cymene, and it is hoped that this review will stimulate further investigations on the commercial utilisation of this important raw material for production of many useful substances.

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OSCAR EDWARD MEINZER*

IN the passing away of Dr. Oscar Edward Meinzer, the world has lost an eminen Geologist and a great authority on Ground-Water Hydrology. His famous treatise "The Occurrence of Ground Water in the United States with a discussion of Principles" published as Water Supply Paper No. 489 by the U. S. Geological Survey in 1923, and his numerous other papers on Hydrological investigations, specially on ground-water problems, contributed to the Governmental publications and Scientific and Engineering Journals, constitute a series of valuable references to Geologists and Hydrologists all the world over.

Dr. Meinzer was born on November 28, 1876, and hailed from a country farm in the State of Illinois. After a distinguished career at the College, he entered the U. S. Geological Survey in 1906 where he served for 40 years until his retirement in 1946. Through these long years of patient and able work, Dr. Meinzer has systematized the knowledge of the occurrence and principles of recovery through wells and springs of the supplies of water which are hidden in the rock formations. He was the leader in the development of ground water for useful purposes. He investigated the Geology and ground water resources in the arid valley regions of the Western States of U. S. A. These valleys were then sparsely populated or desert areas, but have since become prosperous through irrigation from wells developed as a result of his investigations.

Dr. Meinzer was a member of numerous scientific societies. He was the past President of the Society of Economic Geologists, and the Washington Academy of Sciences, and other institutions. At the time of his death he was the President of the American Geophysical Union. He had been awarded the William Bowie Medal in 1943.

Dr. Meinzer was a man of varied interests. He was a student of Philosophy and maintained a searching interest in Religion.

It is reported that Dr. Meinzer was apparently in good health and spirits upto the day of his death, June 14, 1948, when he quietly passed away during an afternoon nap. Thus came the peaceful end of a great career.

M. B. R. RAO.

* Published with the permission of the Director, Mysore Geolgical Department. A detailed Obituary Notse has been published on the opening pages of the *Transactions of the American Geophysical Union.*, August 1948, **29**, No. **4**. from which the material for this hort noter hos been obtained.