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Polymerization of Tetramethylethylene at Pressures up to 27,500 Atmospheres.

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S. V. Lebedev and E. P. Filonenko studied the polymerization of ethylene derivatives in the presence of floridin /1/. They observed that under the conditions of their experiments only unsymmetrical di-substituted and tri-substituted ethylene derivatives polymerized. V. V. Korshak and K. K. Samplavskaya /2/ analyzed the data of the cited work /1/ and other studies and came to the conclusion that stereochemical factors play an important role in the polymerization of ethylene derivatives. Tetramethylethylene (2,3-dimethyl-2-but^ene) is one of those ethylene derivatives whose polymerization has not been studied up to now. Experiments on the ionic polymerization of tetramethylethylene in the presence of boron trifluoride led to the formation, predominantly, of 2,2,3,5,6-pentamethyl-3-heptene /3/. Analogous results were obtained when tetramethylethylene is polymerized in the presence of 80% sulfuric acid /4/. The structure of the polymerization products provide evidence that the polymerization reaction proceeds not with tetramethylethylene itself, but with its isomers. Actually, in the presence of acid catalysts tetramethylethylene is converted ^{into} with an equilibrium