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Van Vleck and the magnetic susceptibilities of gaseous molecules

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In his 1927 Physical Review article and in his 1932 book, *The Theory of Electric and Magnetic Susceptibilities*, Van Vleck used the new quantum theory to derive the magnetic susceptibilities of O₂ and NO in their gaseous form and compared them with experiments. He was therefore very interested in low temperature susceptibility experiments on O₂ at Oxford University in 1954 where individual O₂ molecules were trapped in small, almost spherical cages in organic clathrates. Correspondence between him and this speaker, then at Oxford, led to further measurements of O₂ and also of NO in such clathrates, to theory and to subsequent publications and correspondence. Later communication with Van Vleck on the magnetism in rare earth iron garnets, a subject of long-term interest to him, will be described in connection with experiments carried out at Duke University. Some fond personal recollections of this speaker of his interaction with Van Vleck - both while at Harvard, during visits and through correspondence which extended into the seventies - will be presented.