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method of studying molecular electric hexadecapoles through the influence of rare gas matrices on the rotational energy levels of trapped molecules. He showed that, for molecules occupying sites of octahedral symmetry, no terms before the hexadecapole in a multipole expansion of the molecular charge distribution can interact with the field of the surrounding lattice. He calculated the effect of this interaction on the rotational energy and showed how it could be used to obtain the hexadecapole.

One of the most interesting molecular structure studies was done by molecular beam methods on alkaline earth dihalides. Wharton, Berg, and Klemperer (Harvard) reported that many of these are not linear, as previously thought. They found that BaF_2 , BaCl_2 , BaBr_2 , BaI_2 , SrF_2 , SrCl_2 , and CaF_2 are deflected by inhomogeneous electric fields and thus have an electric dipole moment which implies a bent structure. On the other hand CaCl_2 , CaBr_2 , SrBr_2 , and SrI_2 appear to be nonpolar and presumably linear.

Two experimental methods of determining molecular structure, spectroscopy and electron diffraction, were discussed by V. W. Laurie (Stanford) and L. S. Bartell (Iowa State), respectively. In both techniques the problem of molecular vibrations is now the limiting factor on accuracy, and methods for partially correcting for this were presented. However, anharmonicity of vibrations is still a major problem.

Applications of masers in the infrared and optical region is of considerable interest at the present time. C. H. Townes (M.I.T.) discussed presently available sources and described experiments designed to improve greatly the Michelson-Morley experiment which tested the existence of the ether. B. P. Stoicheff (National Research Council of Canada) presented some results of using optical masers as sources for Raman spectroscopy and also described some studies on coherent Raman effects. Other speakers (Porto, Cheesman, and DeSiqueria, Bell Telephone) reported on the use of the ruby optical maser as a Raman source.

The Triple Commission for Spectroscopy held a meeting in conjunction with the symposium; its sessions dealt with several problems in astronomy, such as the application of computers to the analysis of some spectra (J. G. Phillips, University of California, Berkeley) and the spectra of atoms and molecules which had been observed in

stellar atmospheres (P. C. Keenan, Ohio State).

Abstracts of the papers can be obtained from H. H. Nielsen, Department of Physics, Ohio State University, Columbus.

VICTOR W. LAURIE
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Forthcoming Events

September

2-7. **Dynamic Meteorology**, intern. symp., Boulder, Colo. (W. L. Godson, Intern. Assoc. of Meteorology and Atmospheric Physics, 315 Bloor St. West, Toronto, Ont., Canada)

2-7. **International Phycological Soc.**, Naples, Italy. (J. Th. Kosher, Rijksherbarmin, Nonnensteeg 1, Leiden, Netherlands)

2-7. **Space Technology and Science**, intern. symp., Tokyo, Japan. (I. Tani, Japanese Rocket Soc., 1-3 Ginza-Nishi, Tokyo)

2-12. **Genetics**, 11th intern. congr., The Hague-Scheveningen, Netherlands. (S. J. Geerts, Genetisch Laboratorium, Driehuizerweg 200, Nijmegen, Netherlands)

2-13. **Epidemiology and Biometeorology of Fungal Diseases of Plants**, symp. (by invitation only), Pau, France. (R. D. Schein, Dept. of Plant Pathology, 113 Buckhout Laboratory, Pennsylvania State Univ., University Park)

3-6. **Entomology**, Canadian centennial, Ottawa, Ont., Canada. (Executive Committee, K. W. Neatby Bldg., Carling Ave., Ottawa)

3-8. **Anesthetics**, 1st European congr., Vienna, Austria. (K. Steinbereithner, Medizinische Akademie, Alserstrasse 4, Vienna 9)

4-5. **Industrial Design**, 1st intern. technical conf., Leipzig, Germany. (Sekretariat der Tagungskommission, Kammer der Technik, Hauptausschuss, Abt. Technischer Fortschritt, Klara-Zetkin-Str. 115-117, Berlin W.8, Germany)

4-6. **Inorganic Fluorine Chemistry**, symp., Argonne, Ill. (L. Stein, Chemistry Div., Argonne Natl. Laboratory, 9700 S. Cass Ave., Argonne)

4-6. **Proteins and Their Reactions**, symp., Corvallis, Ore. (A. F. Anglemier, Dept. of Food Science and Technology, Oregon State Univ., Corvallis)

4-7. **Biometric Soc.**, Eastern North American region, Cleveland, Ohio. (E. L. LeClerg, Biometrical Services, U.S. Dept. of Agriculture, Plant Industry Station, Beltsville, Md.)

4-7. **Production Engineering Research**, intern. inst., 13th general assembly, Pittsburgh, Pa. (E. Merchant, Cincinnati Milling Machine Co., Cincinnati 9, Ohio)

4-7. **Mössbauer Effect**, 3rd intern. conf., Ithaca, N.Y. (A. J. Bearden, Dept. of Physics, Cornell Univ., Ithaca)

4-7. **American Statistical Assoc.**, Cleveland, Ohio. (R. T. Bowman, Office of Statistical Standards, Bureau of the Budget, Executive Office Bldg., Washington 25)