

Infrared Symposium Held During Summer

By LOU REINAGEL

From August 24 through August 28, Canisius College played host to the Nation's teachers and scientists in its third annual Infrared Symposium. During the five-day period, fifteen lectures were given to the group of about fifty people representing colleges, institutes, and industries all over the country. The lectures ranged from topics on theory of infrared spectroscopy, through the different aspects of analysis, and into individual problems and research techniques as presented by the respective speakers.

Heading the overall program was Dr. Szymanski, Ph.D., head of the Chemistry department at Canisius College. Other members of the staff of lecturers were Donald A. Herbert of Beckman Instruments, Inc.; Robert T. Conley, Ph.D., of Canisius College; Abram Davis, M.S. of Hooker Chemical Co.; A. Sidney Ayers, M.S. of Yerkes Research Laboratory; Sister Miriam Stimson, O.P., Ph.D., and Sister Irma Gerber, O.P., Ph.D., both of Siena Heights College; Raymond R. Sawyer, Ph.D. from Perkin-Elmer Corp.; and Ernest R. Shull, Ph.D. of Linde Company.

Leroy H. Bille of National Aniline Division along with Mr. Ayers, and Mr. Davis made up the laboratory staff for actual demonstration procedures in the infrared laboratories at Canisius.

A typical day during the week was Thursday, August 27. At 9:00 a.m. the group gathered in the library auditorium to hear Sister Irma Gerber, O.P., give a lecture on the analysis of spectrograms to yield certain materials called Coordination Compounds. At 10:00 Dr. McDonald discussed applications of infrared spectroscopy in the field of surface chemistry which deals with the growth of crystals, among other aspects, on surfaces of metals.

At 1:15 p.m. Dr. Sawyer showed the class some new applications of spectroscopy in industry along with newly developed instruments and accessories. At 2:45 Dr. Shull lectured on the techniques used in industry to evaluate infrared spectrograms and how they helped in industry's work. At 4:15 a problem session was given in which actual aspects

of analyses were worked out by the members of the program. At 6:00 p.m. the laboratory staff demonstrated the use of the infrared spectrograph and its accessories.

The last day of the program, Friday, August 28, was given over to a panel discussion by the members of the faculty staff. Its informal atmosphere encouraged questions from the audience.

The field of spectroscopy has been an important study at Canisius College for many years. It has been within the last few years, however, that infrared laboratories and staff has been emphasized at our College. The value of this field is inestimable in chemistry as infrared instruments are able to identify special groups of compounds only seen in the long wavelength range of the spectrum beyond the range of the eye. The instruments can so distinguish and isolate these groups as to give a clear graphical "picture" of their structure and development.

The picture accompanying this article, for instance, shows the existence of elements as determined by the dips and peaks in the curve. A corresponding grid has been superimposed on the tracing to facilitate the location of these dips on the Angstrom scale. The horizontal grid lines are then used to determine, with great accuracy, the exact amount of the individual element being identified. When several of these lines are combined, studied, and correlated, the identification of special compound groups can then be done.

It is a difficult study and certainly one that takes years of knowledge and training to master. Canisius leads this field in the training of personnel for studies in industry and research. Only four other colleges in the nation are presently offering this type of instruction: M. I. T., Brooklyn Polytechnic University, Fisk University, and University of Minnesota. To offer this type of instruction, a college must be equipped with sufficient staff and instruments that they might present all necessary aspects of the development. Canisius has shown the nation its enviable leadership in the field through this symposium and the many more that will certainly follow.