

Physics:

Under the guidance of R.A. Millikan (Dir. Norman Bridge Lab.) WW visits a series of projects in physics, spending some time with the cosmic ray work, I.S. Bowen's (Prof. Physics) work, G.W. Potapenko's (Assoc. Prof.) ultra short wave work, G.C. Lauritsen's (Assoc. Prof. Phys.) 5,000,000 V. X-ray work, the aerodynamic laboratory, and A. Goetz's (Assoc. Prof.) cryogenic laboratory. Goetz also speaks at length concerning the work on the physics of the solid state. He gives the impression of a very able and energetic experimenter. It is obvious to WW from information conveyed by Millikan, Goetz and other more informal advisers such as E.T. Bell (Prof. Math.) that there is something of a scientific feud on between Goetz and F. Zwicky (Assoc. Prof. Theor. Physics). Z. seems unable to conduct or direct experimental work. On the other hand, there is mutual jealousy between the two as regards the origin of ideas referring to the mosaic structure of crystals. Some members of the staff feel that Z. has all of the ideas and imagination and that Goetz has been quite unfair in stealing the thunder. Other friends of WW indicate that this statement is quite reversed. Independent of who deserves the credit, it seems clear that important progress is much more likely to be made through Goetz's work, inasmuch as he is doing interesting and apparently sound experimentation. Almost all the people with whom WW has talked elsewhere are extremely sceptical concerning Z's ideas. Goetz has developed a clever technique for the production of single crystals of given size. He can, for example, produce extremely small single crystals of given size. He feels that he has established the certain organization property of these crystals, in that a group of molecules begins to have properties when the crystal is about 1,000 milligrams long, which are not describable merely as the sum of the individual properties of the individual molecules. At about this stage the collection of molecules becomes, so to speak, group conscious. Goetz has designed and directed the construction of a small but very efficient cryogenic laboratory. It cost approximately \$10,000 and was producing liquid air, liquid hydrogen and liquid helium nine months after it was started. This is probably a record both as regards time and expense.