

New Concept in Viscosity Measurement

THE FERRANTI-SHIRLEY CONE-PLATE VISCOMETER

This advanced instrument enables the flow behavior of simple or complex fluids to be examined and evaluated with totally new standards of accuracy and precision. The instrument is particularly useful in handling the complex non-Newtonian fluids. Methods long used for characterizing these fluids have been subject to error. The cone-plate principle affords a constant rate of shear, speed accuracy within 0.2%; cone speeds continuously variable so as to give a shear rate range from 2 to 20,000 reciprocal sec.⁻¹; direct reading of speed, full torque at all speeds, five sensitivities by selector switch.

A programmed control unit for use in conjunction with an X-Y recorder to permit automatic plotting of characteristics is also available.

Investigate this advanced viscometer and the new principle that brings a greater degree of accuracy to the examination of fluids under today's more critical and exacting requirements, both in laboratory and production control applications.



Write for literature.

FERRANTI ELECTRIC, INC.
ELECTRONICS DIVISION

95 MADISON AVENUE HEMPSTEAD, N. Y.

Circle No. 130 on Readers' Service Card

REPORT

ganic and physical. Members of the latter group, practicing predominantly the two types of activities, were thought of more or less as pure chemists. In turn, they were separated from the applied chemists, the technologists, or chemical engineers, who reduced "pure chemistry" to practice. These are artificial categories embodied in institutions—societies, divisions, departments—because this is useful. But it is most important to recognize that *they are artificial* and that the three activities are not comparable. The pure chemistries are neither better nor worse than the applied—only different. The three are mutually complementary and supplementary.

That all three activities are supplementary and complementary to each other becomes very evident when the activities involve something beside chemicals—when they involve symbols and concepts. For the triad of activities can operate at all levels of abstraction within the domain of each activity. Hence the chemical engineer has courses in the theory of reduction to practice, as well as in the "analysis" of his methods and the "reduction to practice" of his theory. Likewise, a theorist in chemistry engaged in "synthetic" activities may well be concerned with the "analytic" approach to his theories, but at the level of investigative activity. He is also concerned as well with "higher" synthesis and its application.

We see, then, that *analysis* as it is used in chemistry has broad meaning. It comprises qualitative, quantitative, and relationship components. It applies not only at the level of substances, but also at the level of concepts by means of which substances are manipulated by the intellect. It applies also at the levels of generalizations of concepts.

"Analysis" must in the nature of things precede "synthesis," or theory, in the temporal development of any natural science. Hence there is a tendency for chemists on the theoretical side to see theory as in some way purer, or higher, than "analysis." Bound up in this are many legacies from the past—works of the hands are less noble than