

# The Puget Sound Chemist

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## MAY GATHERING

Since May's activity is characterized by a group convening at a gate, let's call it a gathering rather than a meeting. In other words, a most interesting inspection trip has been arranged through the plant of the Bethlehem Steel Company, Seattle. Those planning to go will kindly observe the following facts: (1) total reservations are restricted to 50; therefore, (2) send in the enclosed post card for reservations to reach the secretary not later than Wednesday, May 28; (3) those attending must be citizens and certify to that fact on the post card; (4) priority will be given to members and associates; guests will have to yield to members and of the member list, those whose reservations are in first will be accepted first; (5) the tour will be on Thursday May 29. Cars must be at the east gate of the plant by 7:30. This is reached by turning south off Spokane Street on the White Center highway, then turning right on Andover Street.

There will be a no-host dinner at the Pine Tree Tea Room, Republic Building. Reservations for it may also be made on the enclosed card.

## LABORATORIES AND PERSONALITIES

### Two State Laboratories

The Chemical Laboratory of the Washington State Liquor Control Board is located in Seattle. The personnel of the laboratory consists of Mr. Fred O. Gibson, Analyst, Herbert S. Madsen, Assistant Analyst, a laboratory assistant, a field laboratory assistant, and an inspector.

The work of the laboratory may be divided into three parts. First, the supervision of the wineries of the state and cooperation with them in the solution of their fermentation and other production problems. Second, analysis and inspection of materials sold by the Liquor Board including those items imported in bulk and bottled at the Board's plant. Finally, they cooperate with the investigation and enforcement division in its work dealing with violations of the liquor law.

Work of a research character deals with analytical methods, experimental fermentations and yeast culturing, evaluation of winery equipment and equipment used in the bottling plant.

#### The Highway Materials Laboratory

is primarily a control laboratory for all materials, as far as is reasonable, that make up our highways. A highway begins at the soil which underlies it and ends with the traffic stripe which finally marks the lanes. The State of Washington, as do all states, issues specifications as to the quality and character of the materials used and how they shall be placed. Upon these specifications construction bids are based. The materials specifications include the tests, or references to methods of test, which are to be used, and the required properties.

The laboratory itself is divided into seven main divisions: 1. Soils and subgrade classification and soils mechanics; 2. Aggregate for surfacing and concrete; 3. Concrete control - compressive strength; 4. Cement physical properties; 5. Analytical chemistry: a. Cement, b. Paint materials, and c. Miscellaneous materials; 6. Asphalt and asphalt aggregate mixtures; 7. Paint physical properties. The methods used in most of the work are those of the American Society for Testing Materials. The control work is at its greatest during the construction season with little during the fall, winter and early spring at which time research problems are undertaken.

The object of the research is to improve specifications, both as to limits and as to methods, such that specifications will allow only satisfactory materials for a given purpose to pass, and to reject only unsatisfactory material. The research program covers a wide field. Recently acquired is a sonic analyzer for determining the fundamental frequency of vibration of materials. The fundamental frequency is related to the modulus of elasticity of the material. Improvement or degradation, if it occurs, in the modulus of elasticity can be followed without destruction of the sample.

The laboratory personnel includes six laboratory assistants, an assistant materials engineer and a materials engineer. The laboratory building is a one story concrete structure having a floor space of 11,000 square feet. Expenditures for state highway construction contracts alone from April 1, 1939, to March 31, 1940, were approximately  $7\frac{1}{2}$  million dollars. The materials laboratory is one factor which has aided greatly in our building up of a State Highway system second to none in the United States.