The calorific values of the gases, calculated on the basis of British thermal units per cubic foot of gas, prove that the gases produced in the benzene-toluene process constitute a most satisfactory fuel. The heating values are greater than those of good natural gas, owing to the presence of considerable proportions of ethane and ethylene.

The experiments being concerned more with the nature and the quantity of the liquid reaction products than with the gaseous products, attention was concentrated on the former. Too much reliance should not be placed on the percentages of gas formed. As

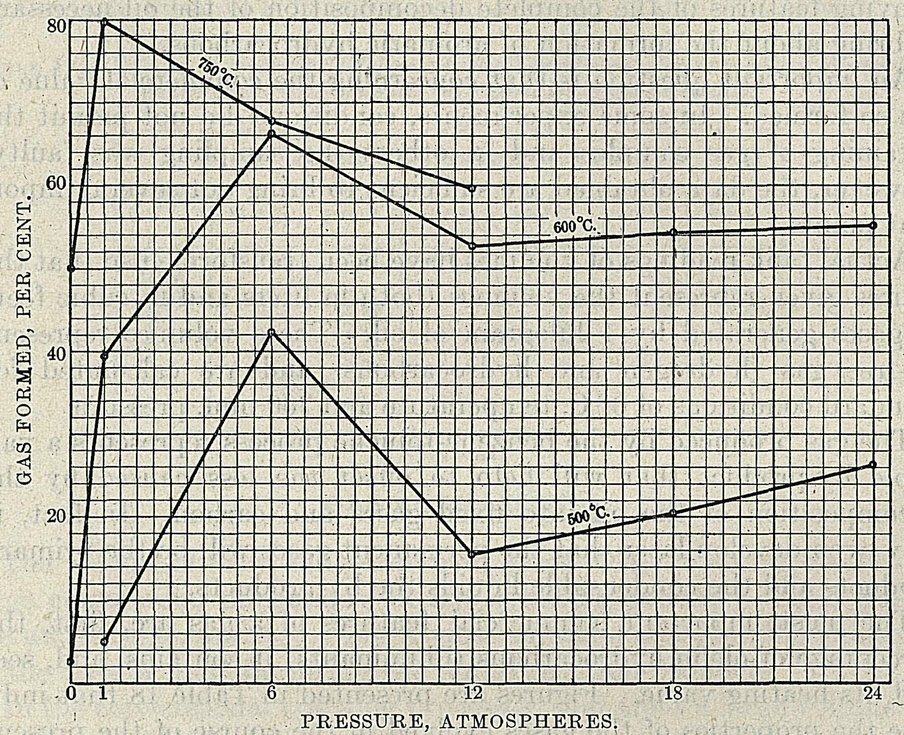

FIGURE 23.—Curves showing percentages of gas formed from cracking a Pennsylvania refined burning oil with varying temperatures and pressures. Results for higher pressures are high because of oil consumed in building up pressures.

previously stated, in the authors' small experimental operations building up pressures consumed a large quantity of the initial charge of any oil treated. In consequence the percentages of gas formed were greater for all pressure reactions than they would be in large-scale operations. The results are of value nevertheless for comparison and show in a general way what may be expected under various temperature and pressure conditions. The results mentioned are shown in Table 18. The percentages of gas formed are shown in figures 23, 24, and 25.