The estimated production of gasoline in the United States in 1915 was 41,600,000 barrels and the amount exported in that year was 6,500,000 barrels, leaving a difference of 35,100,000 barrels for consumption in this country. These figures compare with a production of 12,900,000 barrels, exports of 1,640,000 barrels, and an available difference of 11,260,000 barrels in 1909; and a production of 6,920,000 barrels, exports of 1,640,000 barrels, and an available difference of 6,326,000 barrels in 1904.

In regard to the consumption of gasoline, the Secretary of the Interior says:

"The new uses of gasoline and kerosene (coal oil) are of comparative minor importance. The consumption of gasoline has been due to the tremendous growth of old uses.

"The principal uses of gasoline to-day are as follows:

"(*a*) Automobiles, motor boats, motor cycles, and air craft.

"(*b*) Stationary internal-combustion engines.

"(*c*) Traction and other portable units.

"(*d*) General industrial and household uses.

"None of these have yet reached a stage where the future can be accurately forecasted."

The Secretary states that the recent extraordinary rise in the price of gasoline is due to the following causes: The increased consumption of gasoline within the United States, which is estimated to have been 25 per cent greater in 1915 than in 1914; the increase in exports; the depletion of gasoline stocks due to increased domestic and export demands; the decreased production of crude oil containing a large percentage of gasoline; the increase in the price of crude oil; and financial influences.

A fact frequently forgotten is that, in spite of the enormous production of petroleum in this country, approximately 65 per cent of the world's output, our petroleum deposits are of limited extent as compared with our deposits of coal. The restricted area of prospective oil lands limits the possible number of new fields and makes imperative both the best use of our present known supply and the curtailing of unnecessary extravagance and of waste in the use of petroleum products. The use of oil as a fuel, when less economically valuable but equally available fuels, such as coal, are at hand can not be too strongly condemned. We are constantly acquiring knowledge of the nature of the constituents of petroleum and of the possibility of converting these constituents into much wanted and valuable products adapted to higher forms of industrial use.

In conjunction with its efforts toward minimizing of wastes such as are described above, the Bureau of Mines has established at Pittsburgh, Pa., a laboratory that is investigating problems relating to the

economical and efficient utilization of petroleum and the conversion of heavier and less desirable oils into lighter and more valuable products. This is the highest type of conservation, and conspicuous success has already been attained in the early investigations, the results of which are being given to the public in this bulletin. For the future there is even greater promise of valuable additions to our knowledge in this field, to be obtained through work in the laboratory and, on a larger scale, through the cooperation and support of producers and consumers of petroleum products.

This bulletin deals with the cracking of petroleum and other hydrocarbons and the production thereby of gasoline, benzene, and toluene. The authors give a comprehensive review of the literature and present in much detail the results of the experiments made by Dr. W. F. Rittman, now chemical engineer of the Bureau of Mines, in the development of improved processes for manufacturing gasoline and benzene-toluene, and present some of the results achieved in working out the benzene-toluene process on a commercial scale.

Applications for patents on both processes have been filed with the intent of having the processes dedicated to the public and the patents assigned to the Secretary of the Interior as trustee for the people of the United States. On February 1, 1916, seven refineries, in six States, were installing plants for the gasoline process. Benzene and toluene were being produced in large quantities by the other process.

VAN. H. MANNING.