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THE CHEMIST IN THREE WARS'

By OTTO EISENSCHMIL

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The Civil War

At the beginning of the Civil War chemistry was in its infancy. The chemical requirements of armies at that time were, of course, proportional to the world's contemporary scientific standards; they comprised in the main the procurement of a few basic materials such as iron, copper and salt peter; among manufactured products, gunpowder was the most important. Small as these demands appear when compared to those of modern fighting forces, they constituted problems of magnitude for the chemists and industrialists of the time.

The agricultural South, having built its economic structure on cotton, found itself in a precarious posi-

1 A paper read before the American Institute of Chemists at Chicago, September 18, 1942.

tion at the outset of the conflict. According to census figures for the year ending June 1, 1860, the United States had produced in twelve months 884,474 tons of pig iron; out of this total the South, represented only by Tennessee and Virginia, had contributed a mere 25,513 tons. The blast furnaces in the South were small and antiquated; a daily output of thirteen tons, reached by newly erected furnaces in Alabama, was considered a decided improvement over the older plants of Virginia and Tennessee. The methods used were obsolete, chemical control unknown. In many cases iron ore and fuel had to be brought from distant places by a dilapidated railroad system or by teams; nevertheless, the Confederacy is said to have produced 50,000 tons annually during the war—a remarkable achievement, especially in view of the
Editor's Summary

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