

tant source of trade relied on, and to grasp which has been the primary and controlling motive in prosecuting the work to its present destination, is the boundless and inappreciable coal fields of that county. Within a range of from six to twelve miles from the basin of the canal at Cumberland the deposits of bituminous coal of a superior quality are numerous, and, morally speaking, inexhaustible. Those that have been already opened consist of horizontal strata, slightly elevated, and declining towards the valleys, so as to be situated in the best possible manner for self-draining. According to Professor Silliman, the quantity of coal in that region that is thus situated "is so abundant that it will not be exhausted for centuries. It will be the province of a distant posterity to drain to lower beds by tunnelling, or by the unlimited and untiring energy of the steam engine." But the boundless extent of the Alleghany coal fields, as well as the superior quality of the *Cumberland coal*, are matters so well established now as to render a parade of authorities on the subject in this place superfluous. Such as may desire to pursue the inquiry will find a mass of testimony collected together in the Appendix to our special report of the 16th of November, 1843, and new illustrations of its value will be seen by reference to the voluminous and very learned report of Professor Johnson "on American coals applicable to steam navigation and to other purposes," made to the Navy Department, in June, 1844, and recently published under an order of the United States Senate. In this last mentioned document, which contains the results of a long series of scientific experiments, it will be found that, "*in the order of evaporative power under equal weights*," "*of evaporative power under equal bulks*," which is deemed of the highest importance for the purposes of steam navigation, and of the "*evaporative power of combustible matter*," the Cumberland coal takes rank as number one in a list of thirty-seven different varieties of coal, obtained from various regions in the United States and Great Britain and her dependencies, including the Newcastle, Sidney, Pictou, Liverpool, and Scotch coals.

"As a fuel for domestic purposes, (according to the report alluded to,) it possesses, on the one hand, a flame abundantly sufficient to give cheerfulness to the aspect of a parlor fire, and, on the other, a *durability* approximating that of some of the lighter anthracites; and, as a furnace coal for the manufacture of iron, it will be found among the best of the bituminous class, since, either with or without previous coking, it may be very advantageously employed in the blast furnace."

"Three different sizes of chain were in progress of manufacture at the different periods at which these experiments were made. They can, however, be all reduced to the same size, by a comparison with a common standard sample of coal, which was used on two sizes of chain. Thus Atkinson & Templeman's (Cumberland coal) made eighteen links of a chain one and three-eighths inches in diameter, and eight links of another chain one and fifteen-sixteenths inches in diameter, by the use in each case