

to which are a number of screens of various sizes, designed to separate the coal into the different grades in which we see it in the market. The so called waste coal is that portion which passes through the smallest screen used, and is thrown aside with the slate and other waste material that comes from the mine. The great heaps of this waste coal and slate which soon form about every mine are called "culm heaps" or "culm banks."

The accumulation of these heaps of fine coal in the Pennsylvania coal fields, dates from the introduction of the anthracite coal "breaker." Before this machine began to be used the coal was taken unbroken to the market, and the waste heaps therefore received very little coal, but consisted chiefly of slate and slaty coal, which are the surrounding rocks of the coal in the mine. When these breakers were first used, in the early fifties, there was very little demand for chestnut coal, consequently coal of this size and, of course, all smaller sizes went to the culm heaps. This made the percentage of coal wasted very large indeed, and during the first ten years in which breakers were employed in Pennsylvania, for every ton of coal that was sold, 1.3 tons was discarded as waste. In the early sixties not only chestnut but also pea coal began to have a market, and in the following ten years increased the amount of coal sold to about 65,000,000 tons more than had been sold in the previous decade, and reduced the amount of waste to an equal with the amount sold. Still the quantity of wasted coal was altogether too large, and this fact excited the ingenuity of those interested in the industry, with the result that machines called jigs were invented for the preparation of smaller sizes of coal. Thus buckwheat coal and rice coal were produced for the market. These machines greatly checked the increase of waste coal, and ever since their invention in the early seventies, the amount of waste in proportion to the coal sold has steadily decreased. The average amount of coal sold per year from the Pennsylvania mines, since the