of volutile ingredients, It becomes Authracite. Still fortber, when the enrbop plone is present without any volatile matter, it is no longer coai, but graphite, commonly called black lead Not only is this substance not coal at all, but it is non-combustible, and on that account is largely used in making crucibles for the smelting of metallic Other well known uses of ores. graphite are for polishing purposes. for making our common lead pencits, and on account of its softness and greasy nature, it is employed to a considerable extent in connection with machinery, being much used to counteract the friction of the bearings etc. This graphite, in its purer form. is very vulnable and not over plentiful. The best now produced comes from the Ishind of Ceylon. It is extensively mined in Cumberland, England, and so precions was it consider ed at one time, that the mines were strictly guarded to prevent peculation of the material. A strong house way built over the shaft, the doors of which were bolted and locked, while the men were at work within. On coming to the surface at the end of a shift, they were closely searched and made discard their mining clothing before they were allowed to leave the shaft houses, lest they might have any of the precious material concealed about their persons. An armed guard was constantly stationed in a room overlooking this operation. There are numerous deposits of inferior graphite mixed with rock and earth in various parts of the world. We have a good dcal of this quality here in Newfoundland. Nowadays, with modern machinery and modes of treatment, these can be utilized by being purified from This constitutes and dross. earth much of the stove pollsh in use.

Before leaving this part of my subject, 1 must not omlt to mention that the chief ingredient of all coals, carbon, when in a crystallzed condition

constitutes the most precious of precibas stones, the Diamond. It is a very curious fact that while most forms of coal are comparatively soft, this crystalized carbon, or Diamond, is the hardest substance in nature. It will cut or scratch any other mineral, and pothing but a diamond itself will cut another diamond, hence the expresspont, "Diamond cut Diamond."

But to return to coal proper, there is an infinite variation in the quality of the product. Coals with too high a percentage of earthy uniterial are. as a rule, of poor quality, owing to the amount of ash and slag they leave behind during combustion. When considerable pyrites is present, as is often the case, it becomes very injurious to the furnaces. This pyrites, which is that bright, brassy material frequently seen on the cleavage places of some coals, is a compound of sulphur and Iron. The sulphur, when liberated, during combustion, unites with the bars of the grate, and soon destroys them. Sulphur has an extraordinary affinity for iron in any form, and will pass from its original habitat, to combine with the iron. If any person wish to demonstrate this fact for himself, he need only procure a stick of sulphur, heat a piece of iron to redness and bring the two in contact, when he will see the iron eaten up, as it were, by the sulphur. A good, clean coal, then, must be as free as possible from pyrites and clay.

When speaking of coal, I am frequently asked whether such and such a seam is workable or of workable dimensions. It appears to me that few who ask this question have any real conception of what constitutes a workable coal seam. Most people appear to think that to be workable, a coal seam must be of a certain thickness. say 3 or 4 feet at least. This is altogether a mistake. Coal seams of only 2 or 2½ feet, when of good quality