Coal

Useful?

Coal used for domestic purposes though not popular because it was dirty. Increasingly used for industries such as glass making and eventually to power steam engines (c1710 Newcomen steam engine used for draining mines and working bellows, 1785 Watt engine adapted to rotary motion and used to power factory machinery, eg Crompton's 'Mule').

Also used in the iron industry (after Darbys produced coke for smelting (c1709) and after Cort developed the puddling furnace to produce wrought iron in quantity (1784)).

By early 1800s it was being used in transport (steam boats and ships, 1830 Liverpool to Manchester railway, etc).

Main problems of mining:

1. Flooding (Newcomen's engine could pump out water after c1711).
2. Collapse (wooden pitprops used by preference – they creaked before breaking, which acted as a warning).
3. Ventilation (Fires were burned underground to create a flow of air – coursing. Children managed ventilation doors – 'trappers').
4. Poisonous gasses (birds were kept as pets underground – they acted as a warning by falling unconscious when suffocating gasses were present).
5. Explosive gasses (methane) tested for in primitive ways (a volunteer would be employed to crawl through tunnels testing with a lighted taper) but very dangerous because of the presence of fire and candles underground (Buddle's steam fan helped ventilation after 1800).
6. Darkness (candles were used until development of safety lamps by Stephenson and Davey c1815).
7. Moving the coal (appalling working conditions included dragging baskets or wagons of coal underground and winding hand winches to lift it to the surface. Pit ponies were used. Watt's steam engine could work winches after 1785).