

fissures in the rocks, sometimes running for miles, and more or less filled with quartz, calc-spar, and ores of metals, which yield our chief supplies of copper, tin, zinc, and lead.

It is worthy of remark that these lodes are almost wholly confined to our oldest or Palæozoic rocks. The Devonian rocks are intersected by them in Devon and Cornwall, and the Lower Silurian formations in Wales, Cumberland, the Isle of Man, and the hills of the south of Scotland, and here and there throughout the Highlands. In the Carboniferous Limestone they are also largely worked in North Wales, Yorkshire, and Derbyshire.

The chief districts in England where copper and tin are found are in Devon and Cornwall; and in the Lower Silurian rocks of Wales, especially in Cardiganshire and Montgomeryshire, there are ores of copper, and many lodes highly productive in ores of lead, some of which are rich in silver. No tin mines occur in that district. Gold also has been long known in Merionethshire, between Dolgelli, Barmouth, and Ffestiniog, sometimes, as at Clogau, in profitable quantity, but generally only in sufficient amount to show reason for starting companies which occasionally lure unwary speculators to their loss. This Welsh gold is found in lodes generally in and near the base of the Lingula flags, which in that area are talcose, and pierced by eruptive bosses of igneous rocks and greenstone dykes.

In older times extensive gold mines were worked in Caermarthenshire at the Gogofau (*ogofau*, caves), near Pumpsant, between Llandovery and Lampeter. These excavations were first made open to the day in numerous irregular extensive quarryings and caverns, where the gold-bearing quartz-veins and strings were