of shale b having been previously taken down) in the southwesterly half of the opening, along a distance of about sixty feet and to an additional depth of seven feet. The limestone was more or less charged with ore along the whole of this distance; but having in view the disadvantages which attend such large excavations in depth, it was resolved to sink a shaft, in order to examine the

20

е.. h.,

d.,

It.

le n

ais is d a of

atly .

gan ....

rian .

they

nde's

n, as stal-.

acke

f the .

-east-

width ....

venty.

sterly

hava

Then

18,. OIL

r feet,

point ...

----

A, Hill limestone, B, underlying shale, C, cupriferous limestone, D, hanging shale.

ground before hand. Accordingly shaft No. 4 was commenced in the south-west end of the working, and sunk, at intervals, to a depth of seventy-five feet on the inclination of the bed. The first twenty-five feet sunk below the open working was in rock containing very good orc, of which rock eighteen and a half cubic fathoms were excavated, and yielded—

 $1\frac{2}{3}\frac{2}{3}\frac{1}{4}$  tons of first quality ore of 24.0 per cent of copper. 133 $\frac{2}{3}\frac{1}{4}$  " crush " 2.0 " "

These quantities correspond, after deducting the loss in dressing the crush ore (one-third of the copper contents), to 18.6 tons of 12 per cent ore, or about one ton per cubic fathom. The cost of sinking these twenty-five feet, and bringing the rock to the surface, amounted to \$482.94; or to \$26.10 per cubic fathom of rock, and \$25.96 per ton of 12 per cent ore. Below the twentyfive feet the ground was found to be poor; and in June, 1862, the sinking was discontinued, in order to the stoping of the ore ground on each side of the shaft. Up to the end of July, 45.62 cubic fathoms were stoped out in the north-east side of the shaft, and yielded—

5