

A Peep into a Welsh Coal Mine.
BY SEPTIMUS PIESSE.

Mining districts generally are situated in the most romantic and picturesque parts of the world. This is more particularly the case in "Merrie England" and the "Land of the Leek." Thus Wales and the bordering counties have ever been prominent as affording a harvest to mining speculators, who, mole-like, grope below the earth, and as a resort for the lovers of scenery, who admire the surface only. Mountain and valley are to one what the monotonous ironstone and coal beds are to the other; the one will praise the sparkling of the lead or copper ore, the other admires the glistening of the dew-drop upon the hardy fern, and the bubbled torrent as it hurries on its course down the Salmon Leap.

Having passed the green and golden colored fields, bordered with the trim hedge row of black and white thorn, with here and there a wild rose or blossom of woodbine peeping at heaven through the green leaves, then the soft sward, yielding a dainty meal to the lowing cattle and the bleating lamb, then the road side decked with azure harebell and blooming furze—there was the logged mule feeding at will upon nettles; all was bright, was gay, was rural.

Now the scene is changed to engine houses, lofty chimneys, sheds, stables, cabins, hills of coal, of coke, of rubble; piles of rough timber, broken machinery, loose chains, and a thousand other things apparently scattered about, rusty, dingy, black; and well they might be, for the coke hills and chimneys were foaming with smoke, and appeared as though they had been doing so for ages. The clanking of chains, the screeching unlubricated wheels, the waste steam blowing from the boiler valve, and the echoes from the pit's mouth, form together a sight and sound that few can conceive or form even an idea of, if accustomed to a "quiet house."

As we examined the works, we could not but be forcibly struck with the apparent negligence and exposure of all sorts of machinery in full work, wheels revolving, beams oscillating, ropes and chains being wound and unwound, pumps flowing with muddy water, all, as it were, unheeded. Everything about a mine seems to be done for work, and nothing for show, so everything is wrought of the strongest material, but in the roughest way man can put matter together. As the engines are never stopped but for twenty-four hours in the week (that is from six o'clock on Saturday to the same hour on the Sabbath following), they are put to severe tests for labor, and which if deranged throws many men out of employ. They are, of course, constructed in the simplest and strongest way; so little "tackle," indeed, is there about them, that they are often driven by a boy engineer.

Having viewed the miscellaneous works, we had some conversation with one of the "top men," which ultimately led to our descent to the "lower regions;" the terms were very moderate, having only to "stand something to drink." The miners are willing to do anything for strangers for a trifle. It was suggested that we should put on a "smock," which ultimately we had no reason to regret. With our new garment came a little of the excitement of our situation. We could not keep away the thought, should the rope break, or a wheel go wrong, what would become of us? Fearing lest our nerves should fail, we hastened, under the direction of our new friend, to jump into the *corve*, just then about to descend; two or three miners did the same, and in a second the engine, like a mighty giant lifted us all up about four or five feet, and held us dangling over the pit's mouth; at the cry of "hold on!" the engine was reversed, and we began our descent in earnest. We certainly own there was a thrill—the "goose flesh" crept up our back—when we thought of the eighty-five fathoms of space between us and a sure footing. The descent being very slow, we had plenty of time to examine the shaft; it was strong enough no doubt, but we thought it rather shaky, as the bricks had fallen away here and there, and water was

pouring through to no small extent. Having descended about thirty or forty fathoms, the mouth of the pit or shaft began optically to decrease in size, and the rope by which we were held did the same, till having gone down about sixty fathoms, we could no longer discern either; we could, however, trace the rope or band by the light of the candle with which we had provided ourselves, till it appeared as fine as a spider's thread. The further we descend, the less steady we go, the oscillations become greater, we swing from side to side, and, occasionally the *corve* catching against some projection, gives the whole a lift—far, very far from pleasant to those unused to such treatment—and having made rather more than half the descent, we felt as we think a person might feel were they in Mahomet's coffin—a kind of suspension between heaven and earth—only not supported by ether, by magnetism, or gas, but by a cobweb. Still we continue to descend. Now, the echo of voices are heard from below, reverberating gruffly. We have passed the superficial crust of the earth, and bricks are no longer required for support, the shaft being cut through rock of "slaty shale," as the geologists have it, which is mostly the strata that covers coal. Now the glimmer of light is visible, it becomes more distinct, and faces (not so black as you would imagine) come in view.

Now, thank our stars! there is an end of our suspense, both ideal and real; we are landed, as an aeronaut might say when his car had touched the earth, safe and sound. We are at the bottom at last. An archway leads to a considerable excavation, large enough for a wagon and horses to turn round; from this the galleries, as the lesser excavations are called, emanate like small streets from a circus; down one of these we were taken to the stable—a part of the mine that had been exhausted. The horses were in excellent condition, they are of the low cob breed, as best adapted for their situation. When once they are taken down they rarely, if ever, are brought up again, and are even buried below in some instances; of five we saw, one had been down seven and another eleven years. Having satisfied our curiosity here, we turned back to the road or main colliery.

In order to save labor, no more material is cut away than is absolutely necessary. In this mine the coal seam is not more than four feet thick, (the seams vary from eighteen inches to twenty feet), so that measurement may be said to be the height of the workings, which prevents one walking in an upright position. We traversed along this about half a mile, when the sound of the pick and sledge warned us we were near the workers. A turn from this brought us at once to what is called the "wall face," from which coal is actually brought down; here were seen about twenty men in line on their knees and haunches, in full labor, each having a lamp giving no more light than, as the saying is, "to render darkness visible." While here, we could, of course, do no less than mine some coal ourselves, in order to give a charm, as it were, to the visit; and, dear readers, from the little experience we had, we can assure you that the miner's work is not to be envied, especially when we take into consideration the dangers of this occupation—dangers which, in their consequences, may be compared to the mariner's: to-day, he is full of hope, of life, of vigor; to-morrow, a widow and fatherless children weep his loss. Yet the miners, like the sailors, as a body, are a hardy, contented and courageous class of God's people. Having done our work, we withdrew, happy ourselves, but leaving those happier behind us.

The mode of working a coal mine is not sufficiently interesting to the general reader to be detailed here. We may observe, however, *en passant*, that the men work by the piece; that they are divided into classes under the name of "holers," "getters," "butty-men," "trammers," "rolley drivers," "banksmen," &c.; that when the coal is "got," it is

shoveled into the *corve*; the *corve* (generally two at a time) is raised on the *rolley* (a kind of truck), and are drawn to the pit's bottom; a *corve* is then attached to the apparatus by which it is brought up the shaft, and is then consigned to the banksmen; and that long night to which the coal has been inured is terminated with a bright day, and the sun, from which it has been hidden for ages, again shines on it.

In some cases, the coal is drawn from the wall face by manual labor to the mouth of the shaft, but in most instances by horses, under the guidance of a boy or girl carrying a lantern dimly burning. It is usual to have a tram-road or railway for the *rolleys* or trucks to travel upon, and it should not be forgotten that this mode of transit was in use in the mining districts many years before applied in the general way we have it now.

Besides the falling of the superincumbent earth, which in some cases buries them alive, the miners have to task their ingenuity to combat with one of their greatest enemies, namely, the fire-damp. Though some mines are comparatively free from this evil, there are others that have it in excess. This fire-damp is nothing more than what we of the "upper world" call gas-coal. It issues from the coal as it is mined, pours out in jets like those which we daily witness in a miniature degree at home at our own fireside; mixing with the air of the mine it becomes very explosive if not carried off by good ventilation. Mines that are dangerous on this account are obliged to be lighted with a peculiar kind of lamp called the "Davy," which prevents the gas being ignited on the outside, but warns the miner of his danger by the appearance of the flame within the lamp should the gas be in excess. In the ordinary way, common candles are used which the miners are apt to burn when they should not, because they give more light than a "Davy." Good ventilation will, however, subvert the evil of fire-damp, and in order to carry this object out, they generally sink two shafts to each mine; they then make a large fire in one, which, acting as a flue or chimney, causes a draft of fresh air to descend the opposite shaft and to pervade the mine.

I have proposed to illuminate mines by gas. It is somewhat singular that these dark regions should be the last to receive the benefit of that artificial light of which they are the source. Many of the sad accidents which now happen in the mines are indirectly produced by the want of light by the miner, and there is no reason why gauze-protected gas lights should not be used in place of the miserable "glims" now employed.

Besides fire, the miners have also to contend against water, but this is kept away by powerful pumps; that, however, overcomes them for a time occasionally, still further testing their patience. The strata of coal in the majority of mines is not on the level, but "dip" to a considerable degree; in these cases different modes of working are obliged to be had resource to.

When we found there was nothing more to be seen, we made preparations to ascend, which having effected in safety, we must own there was a degree of pleasure felt in again treading the surface of terra-firma.

The origin of coal we cannot here discuss, but it is generally admitted to be the result of some wood or forest that has been laid low during some great change which the surface of the earth has been subject to in a previous age. There is not the least doubt that the present position of the globe has been entirely changed with regard to the relative position it had to the sun in former times, and as a consequence, the surface of the world has been modified with this alteration, either suddenly or through the lapse of ages—more probably the latter.

In all His works there is evidently an object in view by the Creator. We cannot for a moment contemplate these mighty cellars of nature without perceiving at once that they are a superb provision for man's wants; nor could we, both on account of its value and

its composition, have given coal a better name than that which it has—"the black diamond." This wise economy of the Great Author of nature is a great proof of his infinite beneficence.

Parasitic Insects.

When in the summer heat we have been teased so much by mosquitos, and our hands have been busily employed in their destruction, we little thought that they were not only useful, but agreeable creatures, and we are afraid that few of our readers will sympathize with (although they may allow the truth) of the following communication from one of our correspondents, H. Pollard, of Lexington, Mo.:

He says:—"That it is a law of nature that animals make more blood in the summer than is requisite for them, partly from the luxuriance of their food, and partly from the genial atmosphere of the season. If this blood does not find some outlet, either by perspiration or other means, the result is in all animals alike, namely, fever and derangement of the system. Now, the very season when this effect is most liable to be produced, is the very time when the parasites are let loose upon us, and perform for us the operation of blood-letting with but little inconvenience, and very cheap."

He certainly supports his argument with some very strong facts, as for example: "The dog, whose food is the same throughout the year, is always accompanied by the parasitic flea, while the horse, with other animals, and man, are only infested by them in the summer season, when the nature of the food they consume requires them to have blood-letting."

This is very true, and no doubt mosquitos, in common with all created things, have their use; but somehow we cannot refrain from wishing they would fulfil their mission on some other person than ourselves.

The Barometer a Hygrometer.

Messrs. Editors—Your correspondent J. H. P., in describing a device under the head of "a cheap barometer for farmers," mistakes when he supposes that his ingenious contrivance necessarily measures the *weight* of the atmosphere; it only measures the quantity of *moisture* present. The substances suspended to the short arm of his lever absorb by exposing an extended surface to the action of the air. His instrument is more properly a hygrometer. The barometer indicates changes of weight in the air, whether resulting from moisture or other cause. The instrument described would "indicate the change of weight" of the air very well, were that due only to the moisture present. J. G.

Augusta, Me., September, 1857.

Population of Canada.

According to the census taken in 1851, the total population of Lower Canada was 890,261, and of Upper Canada, 952,265. On the 1st of January, 1857, the estimated population, based upon official returns, was, of Lower Canada, 1,220,514, and of Upper Canada, 1,350,923, making a grand total of 2,571,437, showing an increase in between five and six years, of 729,172.

Cleaning Saddles, &c.

The following is a good recipe which will give saddles and bridles a good polish, and be entirely free from all stickiness:—The whites of three eggs evaporated till the substance left resembles the common gum, dissolved into a pint of gin, and put into a common wine-bottle, and filled up with water.

Within the three months just past, eight million six hundred thousand new cents have been issued from the Mint at Philadelphia, the total weight of which would be forty-three tons.

No man knows what powers he has till he has tried them. And of the understanding, he may most truly say that its force is greater generally than he thinks till he is put to it.

The electric light is four times less brilliant than the direct light of the sun.