CHAPTER XX.

THE FIRST SIGNS OF DISTRESS

In fact, we had to ration ourselves. Our provision of water could not last more than three days. I found that out for certain when supper-time came. And, to our sorrow, we had little reason to expect to find a spring in these transition beds.

The whole of the next day the gallery opened before us its endless arcades. We moved on almost without a word. Hans' silence seemed to be infecting us.

The road was now not ascending, at least not perceptibly. Sometimes, even, it seemed to have a slight fall. But this tendency, which was very trifling, could not do anything to reassure the Professor; for there was no change in the beds, and the transitional characteristics became more and more decided.

The electric light was reflected in sparkling splendour from the schist, limestone, and old red sandstone of the walls. It might have been thought that we were passing through a section of Wales, of which an ancient people gave its name to this system. Specimens of magnificent marbles clothed the walls, some of a greyish agate fantastically veined with white, others of rich crimson or yellow

dashed with splotches of red; then came dark cherry-coloured marbles relieved by the lighter tints of limestone.

The greater part of these bore impressions of primitive organisms. Creation had evidently advanced since the day before. Instead of rudimentary trilobites, I noticed remains of a more perfect order of beings, amongst others ganoid fishes and some of those sauroids in which palaeontologists have discovered the earliest reptile forms. The Devonian seas were peopled by animals of these species, and deposited them by thousands in the rocks of the newer formation.

It was evident that we were ascending that scale of animal life in which man fills the highest place. But Professor Liedenbrock seemed not to notice it.

He was awaiting one of two events, either the appearance of a vertical well opening before his feet, down which our descent might be resumed, or that of some obstacle which should effectually turn us back on our own footsteps. But evening came and neither wish was gratified.

On Friday, after a night during which I felt pangs of thirst, our little troop again plunged into the winding passages of the gallery.

After ten hours' walking I observed a singular deadening of the reflection of our lamps from the side walls. The marble, the schist,

the limestone, and the sandstone were giving way to a dark and lustreless lining. At one moment, the tunnel becoming very narrow, I leaned against the wall.

When I removed my hand it was black. I looked nearer, and found we were in a coal formation.

"A coal mine!" I cried.

"A mine without miners," my uncle replied.

"Who knows?" I asked.

"I know," the Professor pronounced decidedly, "I am certain that this gallery driven through beds of coal was never pierced by the hand of man. But whether it be the hand of nature or not does not matter. Supper time is come; let us sup."

Hans prepared some food. I scarcely ate, and I swallowed down the few drops of water rationed out to me. One flask half full was all we had left to slake the thirst of three men.

After their meal my two companions laid themselves down upon their rugs, and found in sleep a solace for their fatigue. But I could not sleep, and I counted every hour until morning.

On Saturday, at six, we started afresh. In twenty minutes we reached a vast open space; I then knew that the hand of man had not hollowed out this mine; the vaults would have been shored up, and, as it was, they seemed to be held up by a miracle of equilibrium.

This cavern was about a hundred feet wide and a hundred and fifty in height. A large mass had been rent asunder by a subterranean disturbance. Yielding to some vast power from below it had broken asunder, leaving this great hollow into which human beings were now penetrating for the first time.

The whole history of the carboniferous period was written upon these gloomy walls, and a geologist might with ease trace all its diverse phases. The beds of coal were separated by strata of sandstone or compact clays, and appeared crushed under the weight of overlying strata.

At the age of the world which preceded the secondary period, the earth was clothed with immense vegetable forms, the product of the double influence of tropical heat and constant moisture; a vapoury atmosphere surrounded the earth, still veiling the direct rays of the sun.

Thence arises the conclusion that the high temperature then existing was due to some other source than the heat of the sun. Perhaps even the orb of day may not have been ready yet to play the splendid part

he now acts. There were no 'climates' as yet, and a torrid heat, equal from pole to equator, was spread over the whole surface of the globe. Whence this heat? Was it from the interior of the earth?

Notwithstanding the theories of Professor Liedenbrock, a violent heat did at that time brood within the body of the spheroid. Its action was felt to the very last coats of the terrestrial crust; the plants, unacquainted with the beneficent influences of the sun, yielded neither flowers nor scent. But their roots drew vigorous life from the burning soil of the early days of this planet.

There were but few trees. Herbaceous plants alone existed. There were tall grasses, ferns, lycopods, besides sigillaria, asterophyllites, now scarce plants, but then the species might be counted by thousands.

The coal measures owe their origin to this period of profuse vegetation. The yet elastic and yielding crust of the earth obeyed the fluid forces beneath. Thence innumerable fissures and depressions. The plants, sunk underneath the waters, formed by degrees into vast accumulated masses.

Then came the chemical action of nature; in the depths of the seas the vegetable accumulations first became peat; then, acted upon by generated gases and the heat of fermentation, they underwent a process of complete mineralization.

Thus were formed those immense coalfields, which nevertheless, are not inexhaustible, and which three centuries at the present accelerated rate of consumption will exhaust unless the industrial world will devise a remedy.

These reflections came into my mind whilst I was contemplating the mineral wealth stored up in this portion of the globe. These no doubt, I thought, will never be discovered; the working of such deep mines would involve too large an outlay, and where would be the use as long as coal is yet spread far and wide near the surface? Such as my eyes behold these virgin stores, such they will be when this world comes to an end.

But still we marched on, and I alone was forgetting the length of the way by losing myself in the midst of geological contemplations. The temperature remained what it had been during our passage through the lava and schists. Only my sense of smell was forcibly affected by an odour of protocarburet of hydrogen. I immediately recognised in this gallery the presence of a considerable quantity of the dangerous gas called by miners firedamp, the explosion of which has often occasioned such dreadful catastrophes.

Happily, our light was from Ruhmkorff's ingenious apparatus. If unfortunately we had explored this gallery with torches, a terrible explosion would have put an end to travelling and travellers at one stroke.

This excursion through the coal mine lasted till night. My uncle scarcely could restrain his impatience at the horizontal road. The darkness, always deep twenty yards before us, prevented us from estimating the length of the gallery; and I was beginning to think it must be endless, when suddenly at six o'clock a wall very unexpectedly stood before us. Right or left, top or bottom, there was no road farther; we were at the end of a blind alley. "Very well, it's all right!" cried my uncle, "now, at any rate, we shall know what we are about. We are not in Saknussemm's road, and all we have to do is to go back. Let us take a night's rest, and in three days we shall get to the fork in the road." "Yes," said I, "if we have any strength left." "Why not?" "Because to-morrow we shall have no water." "Nor courage either?" asked my uncle severely. I dared make no answer.