

THE IRON WORKS AT MERTHYR TYDVIL, SOUTH WALES.

Among the rival iron districts which now pour out their millions of tons annually all over the world, Merthyr Tydvil, was one of the earliest in the field, its product being celebrated long before the Staffordshire mines were opened. The principal works at and in the neighborhood of Merthyr are Cyfarthfa (Mr. Robert Crawshay, the subject of our portrait), Pen-y-darren (Messrs. Fothergill & Co.), and the Dowlais Iron Company's. The first of these has as many as 5,000 hands on its pay roll, and the last 16,000.

The name of Crawshay has been identified with the Cyfarthfa works for three generations. The first ironmaster in the family was (in the words of one of his grandchildren) the son of a most respectable farmer in Normanton, Yorkshire. At the age of fifteen, father and son differed. "My grandfather, an enterprising boy, rode his own pony to London, then an arduous task of some fifteen or twenty days' traveling. On getting there he found himself perfectly destitute of friends. He sold his pony for \$75. He hired himself for three years by paying the \$75, the price of the pony. His occupation was to clean a counting house, to put the desks in order, and to do anything else he was told. By industry, integrity, and perseverance he gained his master's favor, and was termed 'The Yorkshire Boy.' The trade in which he was engaged was a cast iron warehouse. By honesty and perseverance, he continued to grow in favor. His master retired in a few years and left my grandfather in possession of his cast iron business in London, which was carried on on the very site where he ended his days—in York Road. My grandfather left his business in London and went to Merthyr Tydvil. Who started with humbler prospects in life than my grandfather? No man in the works is so poor but that he can command \$75. Depend upon it that any man who is industrious, honest, and persevering, will be respected in any class of life he may move in."

There is a sort of ancestral and patriarchal feeling at Cyfarthfa which seldom exists elsewhere. There are many men who have grown gray in the employment of the Crawshays, who have never changed or would wish to change their place. They have begun as children, perhaps only fetching and carrying small articles, for a few shillings a week, and have gone on to earn, as firemen and puddlers, their three pounds. There is not the same intense pressure to produce here as in other districts. The owner, having inherited a few loose millions, can afford to take things considerably and calmly. If you take the manager of a company, with his \$25,000 a year salary, and wanting to make another \$25,000 a year by his commission and percentage, you have, of course, a very different set of circumstances; he is anxious to produce as fast as possible; but the owner of Cyfarthfa is reported to have once truly said that he could afford to shut up his works for fifty years.

Mr. Robert Crawshay is the owner of Cyfarthfa Castle; the unique character of the stern rough place, fit residence for an iron king, impresses you strongly. Some iron rails, a kind of tramway, come almost to the front door. The place might be a fortress, a mill, a lunatic asylum, unless you knew to the contrary. A somewhat steep ascent leads you to the gardens behind the house, with conservatories and ferneries. Some of the hothouses are very rich in their contents. The flowers might be the glory of any conservatory, but even in looking at the flowers you could not get rid of the idea of iron and coal.

Mr. Crawshay is also well known as an amateur photographer, and his liberal encouragement of the art, by giving valuable prizes for specimens of portraiture, has already been commented on in our columns. He has recently executed a portrait of Mr. Justice Grove, F.R.S., the eminent philosopher and jurist, which the *Photographic News* describes as "nearly faultless."

THE BABY HIPPOPOTAMUS' BIRTHDAY.

The interesting fact of the first annual celebration of the birthday of Miss Guy Fawkes is announced by *Land and Water*. The individual bearing this much execrated name is an infantile hippopotamus in the Zoological Gardens in London, who, just one year ago on the fifth of November, was ushered into existence—a circumstance duly noted in these columns at the time. Mr. Frank Buckland, the well known naturalist, called upon the young lady with the usual felicitations and wishes of "many happy returns of the day." He arrived at about breakfast time, and found the object of his visit deeply absorbed in partaking of a breakfast from nature's fount, under water. He describes the condition and behavior of the babe, as follows:

"The water in the bath was as clear as crystal, and I was able to observe everything that went on. The mother lay herself down on her side, turning over like a huge bacon pig asleep. The young one stood on all fours at the bottom of the tank, and took her food very much after the fashion of a calf. She stayed under water from half a minute to a minute and three quarters; she then came to the surface, took a deep inspiration, and sank again, as quietly as a frog. It was very interesting to see with what little splash or noise

when it is moist and wet, she and her mother are let out into the bath outside; when it is dry and frosty, they are kept in the house, as the frost would crack and parch their delicate skins. When in her morning bath, she is very playful and plunges about like a porpoise. The pair of hippos sleep on the straw all night, but they spend a great portion of the day in their bath in the house in a sort of semi-sleep. They float up to breathe apparently without an effort, like corks rising to the surface. When under water, they keep their eyes wide open after the manner of crocodiles.

When the mouth of the young one is wide open, it will be seen that the tongue is arched directly upwards so as to form a compact valve, which prevents the water going down the gullet. The old father in the next den talks to his wife and child by means of sonorous gruntings, and they answer him. The father's face is much longer and sharper than that of his wife, and his eyes and nose are much more prominent. I understand from Mr. Bartlett, who kindly allowed me a private interview with the hippos, that another baby is expected about next April, and that Barnum is most anxious to obtain it. I doubt if he will; let him go and catch a wild baby hippo for himself."

Prismoidal Railway.

In our last volume, we gave a drawing of the Prismoidal Railway of Mr. E. Crew, of Opelika, Ga. Messrs. Lafferty Brothers, of Gloucester City, N. J., have lately constructed a four ton locomotive on this novel plan, which is thus described in the *Philadelphia Ledger*:

It is built for a street railroad company in Georgia. This engine can with propriety be called a velocipede, as it rests upon two wheels, one following the other. The rail or track upon which it is to run, a sample of which is laid in the yard of the builders, is styled a "Prismoid, or one track railway," and is composed of several thicknesses of plank, built up in the style of an inverted keel of a vessel, with a flat rail on the apex. Upon a trial of speed, about 12 miles an hour was attained, and the inventor and patentee claims that the speed can be almost doubled on a lengthened track.

Mr. E. Crew, of Opelika, Ga., is the inventor and patentee of both tracks and engines, and he claims that his inventions demonstrate a tractive power superior to anything in the locomotive line, of equal weight. The capacity for running on curves is very much greater than the two rail system. The track upon which the trial was made contained 36 feet of lumber and 18 pounds of iron to the lineal foot, proving itself equal to a span of 20 feet, remaining firm and unyielding under the pressure of the engine as it traversed the road. The revolving flanges attached to the engine, and which run on the outside of each wheel, Mr. Crew claims, absolutely lock the rolling stock to the prism, and obviate the necessity of so much heavy rolling

stock in light traffic at a high rate of speed. It is also claimed that a prismoidal railway built with a base of 14 inches and angles of 45° can be built at a cost of \$3,000 per mile.

The inventor is of opinion that his engine and track are particularly adapted to the propelling of canal boats, and will compete successfully with horse power on canals without necessarily interfering with the use of the latter, but he does not state in what way. The engine will shortly be shipped to its destination, Atlanta, Ga., where it goes into operation on a street railroad, built at an elevation of twelve feet above the sidewalk.

ELECTRIC INDICATOR OF VITIATED AIR.—A solution of palladium chloride is so connected with a battery that, as long as no metal is precipitated, no current passes; but as soon as carbon monoxide occurs in the atmosphere, metallic palladium is precipitated, which establishes a current, and rings a bell to give warning of the presence of the noxious gas.—*La Gazette Industrielle*.



MR. ROBERT CRAWSHAY OF MERTHYR TYDVIL, SOUTH WALES.

these gigantic creatures can lift their heads to the surface of the water. After she had finished her breakfast, Prescott, the keeper, enticed Guy Fawkes and her mother out of the water; the little one is as tame, playful, and docile as a kitten. We made her out to be about six feet four long, and two feet ten at the shoulders. Her back is a slaty black color, but her cheeks, chest, and legs are of a lovely pink salmon color. We calculated her weight to be nearly one ton, and her mother would make and weigh about three little hippos. She eats and sleeps well; and besides her natural nourishment, her meals consist of chaff, bran, mangold wurzel, scalded oats, biscuit, and sugar. She is very fond of anything sweet. She has already learnt to beg for food; she puts her head out between the bars, opens her mouth, and pricks up her little ears when she wants to beg. The gape of her mouth is about eighteen inches, she has already a most lovely set of white teeth, and the tusks begin to project out of her pink gums. Her mother is very watchful over her, and, if she thinks any one is about to disturb her child, hisses loudly like a big snake. Every morning