

mornings when she knew that before nightfall she would be in his presence!

"Miss Littledale!"

He was standing leaning over the gate: the man whose absence had cast a gloom over everything.

"Oh, Mr. Dacre!"

She ran swiftly to him, her face wreathed with smiles, and her eyes bright with joy.

Neither spoke for a moment, but his hands had sought hers, and his eyes were more eloquent than words.

"Why have you come?" she asked at length, and her voice trembled as she put the question.

"To say good-bye."

"Did we not say it last night?"

"How could we when a dozen eyes were on us?"

She smiled at him shyly, but said nothing.

"Would such a good-bye have satisfied you? Could you have been content to part with a mere handshake? Oh, Mabyn!"

"I was not content."

The words came at length hesitatingly, but every syllable fell distinctly on his ear.

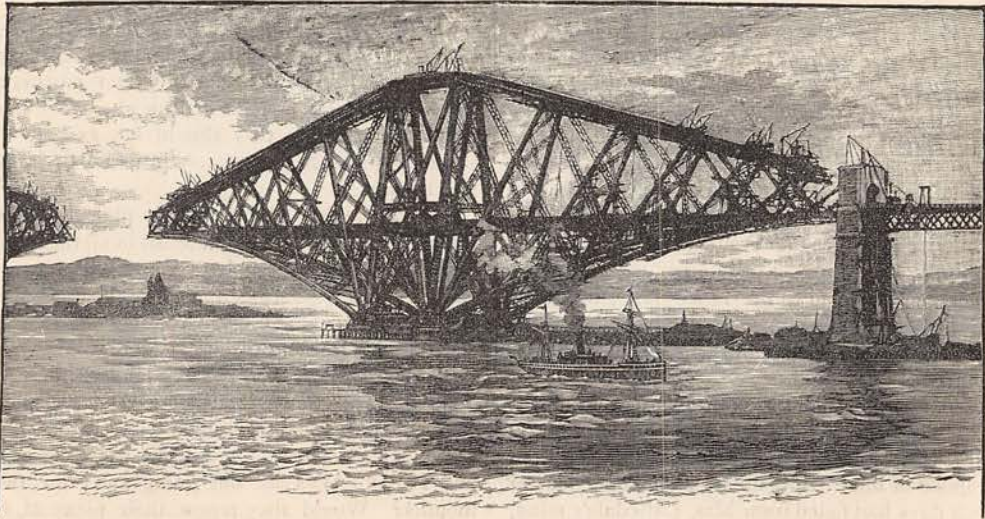
He held her hands in a firmer grasp.

"Look up, Mabyn. Mabyn, you must let me read all that your eyes have to tell me. Mabyn, my——"

But a heavy footstep was heard on the gravel pathway, and, with a startled cry, Mabyn drew away her hands.

END OF CHAPTER THE FOURTH.

A WONDER OF THE NORTH.



SOUTH CANTILEVER, FORTH BRIDGE.

(From a Photograph by A. A. Inglis, Edinburgh.)



NEXT summer, if all goes well, the London tourist will be able to bowl along from King's Cross on a direct line of rail for Perth and the Highlands. At present, if he does not wish to "leave the metals" and resort to the ferry-boat, he must take the "west coast route," by way of Glasgow and Stirling. But when the Forth Bridge is completed he will not require to go so far out of his way. After touching at Edinburgh, he will dart across the estuary of the Forth through the middle of a mighty framework of steel, resembling to the mind's eye the stranded skeleton of some huge leviathan or antediluvian monster. Passing by Kinross, with its romantic prison of the ill-fated Mary Queen of Scots, he will

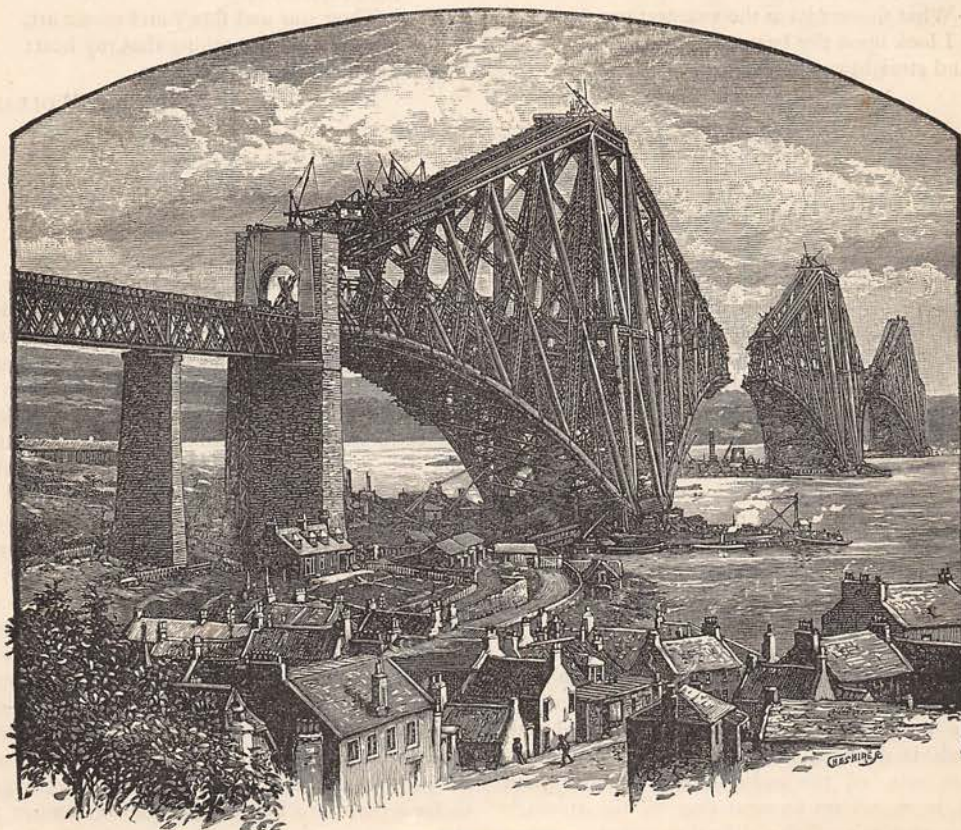
thread the windings of Glenfarg, and thus arrive at Perth Junction an hour before he would have done so by the more westerly route.

It is to compete with the Caledonian Railway Company of the west, for the north of Scotland traffic, that the North British Railway Company, with an admirable spirit of enterprise, have undertaken the colossal task of bridging, not only the Frith of Forth, but also the Frith of Tay. The first Tay Bridge was, as most of us remember, carried away in a hurricane, but undeterred by this catastrophe, the directors of the company have superseded it by another of more solid workmanship. The engineer of this second work, Sir John Fowler, was likewise chosen as the designer of the more important viaduct over the Forth, and the same contractors, Messrs. Tancred, Arrol, and Company, were selected for its construction.

The site of the Forth Bridge is at a point some miles north-west of Edinburgh, where the estuary of the river is narrowed by a promontory on the north shore, and broken in mid-stream by a small and rocky island, called Inch Garvie. It is close beside the two villages of North and South Queensferry, both well known to Scottish history. Readers of the "Antiquary" will recollect the Hawes Inn, where Monkbarns foregathered with young Mr. Lovel, as they waited for the tide to turn, in order that they might cross the ferry. Mr. Louis Stevenson has also shown his interest in this hostel by making it the scene of David Balfour's disappearance in "Kidnapped"; but both of these characters would be greatly astonished were they to step out of the inn door now, and see the gigantic webs of steel which tower over the bed of the river, and fairly dwarf the landscape. The Antiquary indeed might perhaps suggest that it was "very like a whale" of a most prodigious breed, but he would probably decline to believe it was a bridge.

At this point the river is about a mile in width, having high banks on either side, and a bed of trap rock overlaid with a stiff boulder clay, almost as hard as a stone. The two channels formed by Inch Garvie are nearly 200 feet deep, and, owing to the difficulty of building foundations, Sir John Fowler and Mr.

Baker conceived the bold design of traversing the water-way by two immense girders of great span. Inch Garvie would support their central pier, and two other piers could be founded on the bed of the river by means of iron caissons filled with concrete. Each of the spans would be 1,710 feet in width, and at both the banks the line could be carried on a series of granite piers supporting iron girders of the ordinary type. The great width of the spans led them to adopt the device of building enormous cantilevers of steel resting on the granite piers of the tideway, and carrying short connecting girders to bridge the gaps between them. Our general view of the bridge, as it now stands, will serve to explain this design, and it will be remarked that the huge cantilevers rising from the piers are being built outwards from the centre without any scaffolding, by balancing the work on both sides of the supporting foundations. As each side progresses at the same pace there is no fear of the cantilever, however massive, toppling over. The total height of a cantilever above the water is about 360 feet, and the rails which run through the heart of it are 150 feet above the high-water level, so that ships of the largest size can pass up the river at the middle of the arching span, where the straight girders connect the extremities of the cantilevers. The total length of the viaduct, including the terminal



THE FORTH BRIDGE.

(From a Photograph by G. W. Wilson, Aberdeen.)

girders, is about $1\frac{5}{8}$ miles. The superstructure is composed of Siemens-Martin steel, of which over 50,000 tons have been required, and the piers in the river are nearly fifty feet in diameter at the top above high-water mark, and faced with grey granite.

It is a curious thing to see this gigantic structure slowly developing in the air as if it were a living growth. For the hydraulic riveters make no din, and the size of the cantilevers is so vast that the workmen and their machines appear like midgits far aloft. Two or three thousand men are engaged on the work, but they are scarcely to be seen or heard. They are lost in the airy wilderness of steel, like rooks amongst the branches of a tall elm-tree.

The reader will be able to judge of the dimensions of the structure by comparing the cantilevers with more familiar objects, such as the trees of the shore,

the lighthouse on the end of the Ferry Pier, or the cranes employed on the summit. As a Grenadier Guard is to a new-born babe, so is the Forth Bridge to the Britannia Bridge of Stephenson. There is no greater monument of the "iron age," for the Eiffel Tower is a mere gilded toy in comparison. Fortunately we have every prospect of its safe completion, since it has stood the test of several very high gales, and with the connecting girders in position, the strength of the whole must be very much increased. A considerable number of deaths by accident have taken place amongst the workmen, but these have been owing to their own carelessness and disobedience of orders, rather than to any fault in the arrangements of the contractors, and the successful execution of the work is largely owing to Mr. Arrol. Most likely the great viaduct will be formally opened towards the end of this year.

J. MUNRO.

FOR ME.

WHEN I would see
The fairest stars that shine at night,
I gaze upon thine eye's soft light,
And stars shine there for me.

When I would know
What flowers have the sweetest grace,
I look upon thy beauteous face,
And straightway roses blow.

When I would hear
The music of all nightingales,
I listen to the soft love-tales
Thou whisperest in mine ear.

And so, for me,
Thou star and flow'r and music art,
And there is nothing that my heart
Desires, not found in thee.

J. T. BURTON WOLLASTON.

A WORD ABOUT INVALID DIET.

BY A FAMILY DOCTOR.



IF it be a fact—and who shall dare to doubt it?—that pure blood is made by food, and not by physic, the subject of my paper to-day needs to be prefaced by no apology.

Although, however, it is more especially addressed to the invalid, whether chronic or otherwise, and to the convalescent, "those who are whole" may gain a

few useful hints therefrom. Let me remind the reader at the commencement that the food we eat is meant to nourish the body; that those who eat for the pleasure of eating, too often over-eat; that it is not the amount actually swallowed, but that which is digested which must be called nutrition; that one of the evils of eating more than sufficient is to set up fermentation in the stomach and other portions of the digestive canal, causing acidity, eructations, painful flatulence, and sometimes

diarrhœa; that the nutrition of the system is thus very much interfered with, and good digestion rendered impossible; that the body takes days to get over an error in diet of the sort I refer to; that if this is harmful to those in health, it is doubly so to the delicate invalid, and that even those whose digestions are extra-strong suffer from over-eating in the long run, for instead of the food going to harden the muscles, and inure the body against cold and illness, it is stored up in the shape of clogging and unwholesome adipose tissue, and both muscles and nerves are weakened instead of being strengthened.

Now let me give one caution to those who may be acting as amateur nurses to sick or invalid friends or relations. The doctor will invariably lay down rules as to diet. You are to obey these unhesitatingly and to the very letter. The patient may fancy this or fancy that, but you must exercise denial even to sternness. Our tastes during health are safe guides to us, as a rule, in the choice of food; our palates were given to us for a purpose; but nurses must remember that in sickness the tastes become changed—often depraved, if I may use the expression; many and many a