

the invisible; and to do this one has to draw on his experience, and, in default of this, on his imagination, and to exercise that faculty that has been held above to be common to all men. If the mining reports of some fifty years ago or more be gone over, among them many will be found that appeal more strongly to men's cupidity by means of inflating imagination than to their sober sense. But money was then made rapidly in other ways besides mining, and good judgment then did not seem as necessary as now in order to achieve success. In those days after promising the manner of deposition of the mineral, they went on to show it exemplified in that particular case. The manner of deposition seems to be about as much of a mystery now as then, and the great majority of men care less of where it came from, but show a commendable commercial curiosity as to where it is and its extent and richness. And to properly judge of this is the problem of first importance set for every mining engineer to solve.

The general formula that can be integrated between the limits set by every mine, has not yet been deduced, and some think never will be. But some mines have been very justly judged and certain cases sufficiently well proved to give us great hopes for the future.

It seems necessary in the first place to be emancipated from all theories, but this, like all first steps, is the most difficult. In spite of ourselves observed facts will tend to crystallize around one as an axis, and the fact that refuses to be adjusted, though disturbing, is put aside for future study and in most cases is forgotten, and the crystal building continues. When all is done, it is rather oddly shaped and a lot of facts are left over, but we made it and are proud of it and from it make spectacles through which we examine before pronouncing judgment. When free from theories the next step is to observe facts. The importance of different facts in relation to each other cannot be estimated until a sufficient number are observed, but when gone over and made thoroughly familiar with, they seem to arrange themselves in their order of importance and give us good grounds for judging in special cases. All know the "indications" of some mines and how often they are verified. Supposing "indications" be known for any particular case, it is not impossible that the value of a "prospect" for example, might be readily determined. It is true the value of many is so estimated but subsequent development has determined quite a different value.

Divining rods have proved of but doubtful utility, and there are not sufficient number of successful uses of them recorded to establish their value as prophets. The only divining rod trusted by a miner is called a drill, and to obtain the best results with it work must be directed intelligently. In order to do this the environments of all occurring ore must be carefully observed, and free from all prejudice to consider from these where they would likely be duplicated, if at all. The cause of these environments, and why they are as they are and not different, is no doubt of great interest, and if known might prove the master key to unlock all ore. But at present facts prove a safer guide, and though misleading at times, and absolutely refusing to lead at others, in the end will be more satisfactory and productive of better results.

The old philosophy of fitting facts to theory seems to have held longer in mining than anything else, but there seems to be the disposition now to observe facts and let the theory show as it may. The little God of Luck that was, and is now to a great extent, the patron saint of the miner has been deposed from the shrine of many and the more thoughtful have ceased to sacrifice to him.

SALMON RIVER, MIRA, CAPE BRETON COUNTY.—Coal is known to the writer to crop at various points in the coal measures south of the Mira, and the valleys of the Salmon and Gasperaux Rivers. Having examined this region with care during the summer of 1891, I have pointed out a seam of hard coal from eight to twelve feet thick, burns with a white flame leaving a minute quantity of white ash. The crop occurs close to the Salmon River on the left bank in very tough bluish fireclay. The roof consists of calcareous black shale, while the foot-wall or pan stone, as the miners term it, is a coherent reddish sandstone, declaring this to be a fine coal crop. I was informed by Mr. Donald McKinnon, who kindly aided in procuring samples, that Mr. Wm. Sefference obtained enough coal from this spot to carry on his force work. I have hinted the discovery to Mr. Joseph McMillan of Sydney, who has since taken up the ground under license to search. It is well to see that some of our Sydney people are plucky enough to give the coal in the interior of Cape Breton a trial. This location is only about four miles from Mira River, being far from railways and navigation means a considerable, but as we are promised a railway on the southern side of the Island, and judging from the surveys already accomplished, we find our coal at Salmon River well situated. When we have this facility we shall warrant an extensive trade in coal, iron, manganese, barytes, limestone and argentiferous limestone, all of which occur in the immediate vicinity of the Salmon and Gasperaux Rivers.

JOHN MACMILLAN,
Geologist.

DISCOVERY OF COAL AT THE STRAITS OF MAGELLAN.—A seam of coal of very fair quality for steaming purposes is said to have been found by accident in the Straits of Magellan. Signor Fossetti, the captain of an Italian steamer, was compelled to anchor in Shagnet Bay to make some repairs, and while there he discovered coal very near the surface. Reaching Valparaiso, he sent a score of experts to examine the discovery in a steam launch, who found that the coal was not only abundant but of excellent quality.

Mr. William Penn Hussey and A. H. Doren, of Danversport, Mass., have been making an extended trip through the Province examining coal, gold and other mines with a view to investment.



Some Children Growing Too Fast

become listless, fretful, without energy, thin and weak. Fortify and build them up, by the use of

SCOTT'S EMULSION

OF PURE COD LIVER OIL AND HYPOPHOSPHITES Of Lime and Soda.

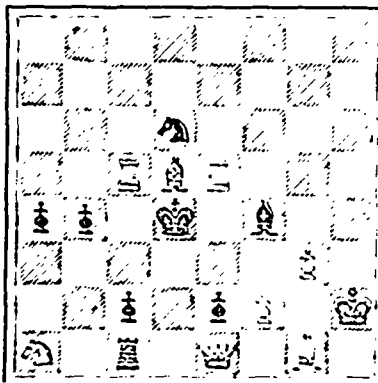
Palatable as Milk. AS A PREVENTIVE OR CURE OF COUGHS OR COLDS, IN BOTH THE OLD AND YOUNG, IT IS UNEQUALLED. Genuine made by Scott & Bowne, Belleville, Salmon Wrapper: at all Druggists, 60c, and \$1.00.

CHESS.

Solution of problem 100 Kt. to Q7. Solved by C. W. L. and Lieut. McGowan, R. A.

PROBLEM 102.

From Detroit Free Press
By J. C. J. Wainwright, Boston, Mass.
Back 8 pieces.



White to play.

White to play and mate in two moves.

GAME No 103

The following superb game was between Showalter and Phillips.

Showalter. Phillips.
WHITE. BLACK

- | | |
|------------------|------------|
| 1 P to K4 | P to K3 |
| 2 P to Q1 | P to Q1 |
| 3 Kt to QB3 | Kt to KB3 |
| 4 B to KKt5 | B to K5 a |
| 5 P to K5 | P to KK3 |
| 6 B to Q3 | Kt to R2 |
| 7 B to Q3 | Kt to QB3 |
| 8 Q to Kt4 | F to B1 |
| 9 KKt to K2 | B to K2 |
| 10 Kt to Kt3 | P to B1 |
| 11 Kt takes BP | P takes Kt |
| 12 B takes BP | Kt to Kt4 |
| 13 P to KR4 | Kt to B2 |
| 14 I to K6 | Kt to Q3 |
| 15 B to Kt6 | B to E3 |
| 16 B to K3 | Kt to K2 |
| 17 B to Q3 | P to B3 |
| 18 Castles QR | Kt to B2 |
| 19 P to B1 | P to KR4 |
| 20 Q to R3 | Kt to R3 |
| 21 P to R5 | Kt to Kt5 |
| 22 Kt to K2 | P to KK3 |
| 23 P takes P | B takes KP |
| 24 Kt to B1 | K to Kt2 |
| 25 R takes B1 | K takes R2 |
| 26 B to K5 ch | K to Kt2 |
| 27 Kt to B4 | B to Q2 |
| 28 R to K1 | Kt to B3 |
| 29 Kt to K6 ch | B takes Kt |
| 30 B takes Kt ch | K takes B |

- 31 Q takes B ch K to Kt2
32 Q to B9 ch K to R3
33 P to Kt7 Q to Q3
34 Mates in 7 e

NOTES.

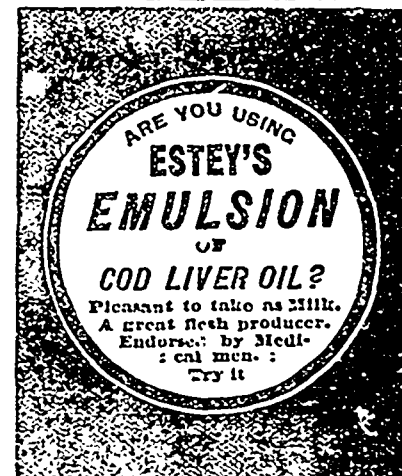
a A b7 move, perhaps to escape the battery.

b A very fine premeditated sacrifice, even if not sound.

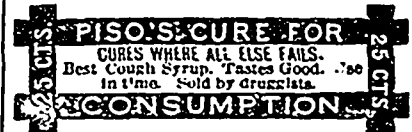
c This opens up an attack from the White Roks! We prefer Kt takes B, followed by some sort of development of the QR and B.

d Q to Q2 gave Black considerable chances of defence, but this means refusing a whole Rook.

e By announcement! Showalter's opponent was Dr. D. T. Phillips.—*The Week.*



Estey's Emulsion cures Coughs, Colds, Consumption, Throat and all Lung troubles. A great remedy for weak and delicate children, builds them up, strengthens the bones, makes new blood. All dealers sell it, don't be induced to take any substitute—it isn't any.
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