

SCIENTIFIC AND USEFUL.

CEMENT FOR MEERSCHAUM.—Make fine freshly calcined plaster of Paris into a cream with water, by sifting or dusting the plaster into the water, and apply as a cement to the broken parts. It sets in a few minutes, but takes a few days to become dry. It is fire-proof.

TO REMOVE IRON-RUST OR TOMATO STAINS FROM LINEN OR COTTON CLOTH.—Wet the spot with cold water and place the cloth in the sunshine. Then mix equal quantities of cream-tartar and table salt, and sprinkle the mixture upon until the dampness has absorbed a great deal, then lay on enough to hide the spot. Wet the spot with cold water every half hour, and if the stain is then seen, cover it again with the cream-tartar and salt. Keep it in the sunshine, and continue these applications till the stain is gone. If recently contracted, two or three applications will remove it.

LEATHER BOARD.—Fish glues, or gelatines, are used to a very limited extent in the manufacture of those universally-used accessories to the production of cheap boots and shoes, commonly known as paste soles and heels. Of course in this, as in the boot and shoe business, the busiest season has gone by, but many hands are still employed in the conversion of the various refuse discarded by the tanners and curriers, and known as "paste roundings, shoulder splits, and skiving," into heels and soles of all kinds of boots and shoes. These materials are cleaned, damp, cut by dies, pasted into moulds, compressed in a powerful press, and dried, and the refuse of this business in its turn is turned over to the manufacturer of what is known as "leather board." This smooth, hard, leather-lined material is largely used in the heels, inner soles, and for the inner stiffening of heels and box toes, and some twenty mills are engaged in its manufacture, turning out from one to five tons daily. About one-third of leather, with varying proportions of canvas, old rope, straw and other "hard stock," is used in its composition. It is manufactured like straw board, which is itself extensively used, especially in cheap slippers and children's shoes, offered in any quantity to a discriminating public at ruinous prices. As many as eighty hands are kept busy in a single establishment in the manufacture of "paste heels," and the stamping of heels and soles from leather and straw board.

TESTS FOR DRINKING WATER.—In Breslau, the Government have taken some wise precautions to prevent the introduction and spread of cholera, and among these they strongly urge the chemical analysis of drinking water. The following tests are the most important, and quite easily applied: 1. Testing for ammonia with Reeser's solution. Presentius prepares this reagent by dissolving 3.5 grams potassic iodide in 10 c. c. water, and afterwards dissolving 1.8 grams mercuric chloride (corrosive sublimate) in 80 c. c. water, then adding the latter solution to the former gradually, till a permanent precipitate is produced. Then add a solution of potash until the fluid measures 100 c. c., and filter. A few drops of this solution added to water containing ammonia gives a yellow or brown color. If only a slight turbidity is produced, or a white precipitate, it indicates a hard water, and is caused by carbonate of lime present. 2. Testing for nitrous acid. To 100 or 200 c. c. water are added 2 c. c. dilute sulphuric acid and freshly prepared starch paste, containing potassic iodide. If a blue color is produced at once, it is due to incomplete putrefaction. 3. Testing for nitric acid. To 25 c. c. of the water is added 50 c. c. pure concentrated sulphuric acid (60° B.), and, while still very warm, an extremely dilute indigo solution is allowed to drop into it. If the color of the indigo disappears immediately, even when repeatedly added, the water may be considered as suspicious, if not dangerous.

"WET THE ROPES."—That some things shrink after they have been washed, and that others expand is well-known, but the cause of this requires explanation. If we take a new rope, ten feet or more long, and fix one end of it across a beam, and to the other end attach a heavy weight, and so stretch the rope till the weight just rests upon the ground, the weight, if the rope be well saturated with water, will be raised from the ground simply by the shrinking of the rope. The following statement is an illustration of the fact: The Chevalier Fontana undertook to raise an obelisk at Rome. While the stone was suspended in the air, just over the pedestal, the ropes stretched so much by its weight that the base of the obelisk could not reach the pedestal, and the work was about to be given over, when a man among the crowd called out "Wet the ropes!" This advice was followed, and the solution was seen gradually to rise to the required height, and was then placed upon the pedestal, where it now stands in front of St. Peter's. The obelisk is now known as erected by Pope Sextus. In the shrinking of various cloths it should be remembered that they are made up of small cords which contract by moisture, more particularly, when wetted for the first time, both in warp and weft, that is, in length and breadth. Paper, with filaments in all directions is forced asunder by the introduction of water among its pores. On this account the wet side will always be the outside of its curl. Wedges of dry wood, driven into clefts of stone, and then well wetted, will rend rocks asunder.

CAISSA'S CASKET.

SATURDAY, Feb. 23th, 1871.

* * All communications relating to Chess must be addressed "CHECKMATE."

TO CORRESPONDENTS.

J. K. HANSEW.—Your excellent Magazine is to hand.

J. H. GRAHAM.—Solutions and a few problems from you would be exceedingly welcome.

SOLUTION TO PROBLEM No. 41.

BY JAS. PIERCE, M. A.

White. Black.

- 1. Kt to Q 5th 1. Any move
2. Mates acc.

SOLUTION TO PROBLEM No. 42.

BY W. T. PIERCE.

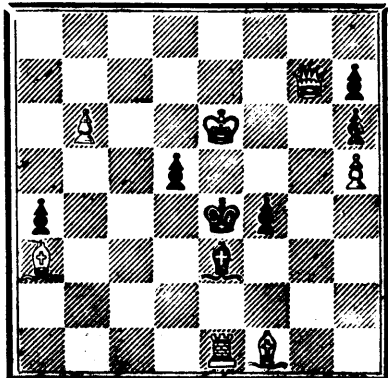
White. Black.

- 1. Q to Q R 4th 1. K to Q 3rd.
2. Q to R 8th 2. Any
3. Mates acc.

PROBLEM No. 49.

BY W. A. SHINKMAN.

BLACK.



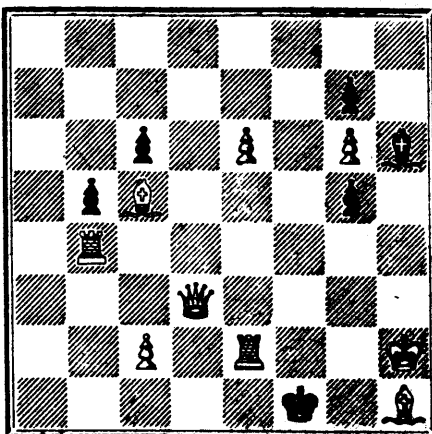
WHITE.

White to play and mate in two moves.

PROBLEM No. 50.

BY W. A. SHINKMAN.

BLACK.



WHITE.

White to play and self-mate in three moves.

OUR PROBLEMS.

Old problematists will unravel the intricacies of the pair of problems given above with unfeigned pleasure, for the structure of each shows the workmanship of a master-hand—the work of a hand whose influence for good over the chessmen seems almost magical. True, the author has not in either wrought a series of misty, complicated puzzles, whose labyrinthian difficulties tax and weary the mind, and fail to give a sweet return for the loss of time and perhaps patience expended upon them, but he has given us sweet chess-nuts, with rich kernels, with an outer covering of no great thickness yet of no mean texture. We take them from the "Maryland Chess Review," a new aspirant to chess fame published monthly under the management of Mr. J. K. Hanshaw, of Frederick, Md. The Review contains about forty pages of first-class chess, and also a few pages devoted to the game of draughts. Send 30 cents to J. K. Hanshaw, box 386, Frederick, Md., for a sample copy.

FARMER SPEEDWELL'S PUDDING.

Old John Speedwell was a well-to-do farmer, living in the western part of Vermont.

His family consisted of his wife Phoebe, two sons, Amos and Jim, and two daughters, Reliance and Prudence, (which names were very appropriate, as the elder daughter was a model of reliance, and the other was prudence personified).

The elder daughter, Reliance, was engaged to be married to a neighboring farmer, a young man whose mother had just died.

In those days there was no butcher to bring fresh meat every day, as at the present time; but people had to rely on their own resources for dinner; and, on the morning which opens our story, old farmer Speedwell had proposed to have some hasty pudding and milk for dinner; and as his word was law, it was agreed upon.

After breakfast, Farmer Speedwell and his sons went to their haying, Dame Speedwell to her work, and the girls busied themselves about their domestic duties.

At the proper time Dame Speedwell made the pudding, taking care to salt it well, as she knew her husband liked a good deal of salt, hung it over a slow fire, and went up stairs to put the winter clothing in camphor.

It was only a few moments before Reliance came into the kitchen, when, seeing the pudding cooking, and knowing that her mother was apt to forget to salt it, she put in a handful of salt and stirred it well, so that her father would not have occasion to find fault.

Soon after, Prudence passed through the kitchen, and, reasoning the same as Reliance had, she also added a handful of salt, and went about her work again.

Before long, Amos entered to get a jug of molasses and water, and soon after Jim, each of whom put in a handful more of salt, as they had no more faith in their mother's remembering it than Reliance or Prudence had.

Just before dinner, Farmer Speedwell returned from work, and when he saw the pudding cooking said: "That pudding smells all-fired good, but I'll bet a six-pence wife's forgot to salt it, as she always does; I used to depend on Reliance, till she got her head 'buck full of that young man o' hers. But I can't reckon on her thinkin' on't now; and, as to Prudence, she is so cautious she would not dare to salt it anyhow; so I guess I'll salt it myself," and suiting the action to the word, he put in a handful and a half of salt, stirring it well in.

Twelve o'clock came, and they were all seated at the table, when Farmer Speedwell helped himself to a good share of the pudding, and took a mouthful; but no sooner had he tasted it than he leaped up, exclaiming: "Who salted this ere puddin'?" then recollecting that he had salted it himself, he left the room saying: "I should think that thundering colt was trying to kick through the barn door!"

The next who tried it was Amos, who leaped up, also, and left "to see what that colt was doing!"

Then followed Reliance and Prudence and Jim, who, each and all, escaped on some pretence, leaving Dame Speedwell in amazement to realize the truth of the old adage: "The proof of the pudding is in the eating."

FALSE ECONOMY.

Everybody should be economical and prudent in these days.

It is highly necessary, yet there is such a thing as false economy.

A lady had a dress to make, and thinking to save a little money, undertook to do the work herself.

Being quite a tyro at the art, she occupied much longer time than a dressmaker would take, and found, to her intense disgust, that she had done her work entirely wrong.

Had she employed a work woman to do the garment, she would have had the time to follow her own profession, make enough to pay her dressmaker, and leave a little balance on hand.

It was a false economy of hers, and she acknowledges that it was.

It is false economy of the proprietor of a firm to work his clerks so hard one week that they will be so completely worn out as to be unable to accomplish anything the next one.

It is false economy to buy thin shoes to be worn in wet weather, for the sake of saving a few shillings, and then get a fit of sickness in consequence, and have a heavy debt to pay to the doctor.

It is false economy to keep the fire low in the winter season, and then have so severe a cold for a fortnight as to be unable to utter a loud word.

It is false economy to go to a large hotel to board during the summer, just for appearances' sake, and then pinch yourselves for food, light, and heat throughout the next winter.

It is false economy to live on a bit here and a bit there at all hour in the day, when the amount thus used would pay for two or three substantial meals.

It is false economy to work all night and remain for hours in bed the next morning; when, if you retire at a reasonable time, you will gain a good night's rest, and arise refreshed and ready to commence work in the bright sunlight, which is far better than any artificial illumination that can be produced.

It is false economy to purchase articles simply because they are "cheap."

One good, durable article will be ten times

cheaper than four of those that break at the first handling.

If you hear of persons complaining that they are no better off at the end of the year for all their economy, you may, as a general thing, conclude that the economy they have been practicing is not the true, but the false kind.

A man, to save money, may starve himself almost to death, and the consequence is that he is too weak to do work.

He has not economized, for the result shows a waste of health and strength.

A shop cannot be kept open without goods; a paper could not succeed without articles to make it attractive, and products could not grow in an unfruitful soil.

How then can a man expect to keep himself in bodily health without proper nourishment?

When studying for the best mode to economize, we should ascertain to a certainty that our decision is true wisdom, not niggardly folly.

THE Brooklyn Eagle is responsible for the following: "Pimpleville, Vt., is evidently not a good field for an Independent, outspoken journal. The Pimpleville Post lately published this item: 'Those who have lately been engaged in sheep-stealing had better stand from under. We know whom we are talking about.' The result was a loss of sixty subscribers, and the paper will go into bankruptcy."

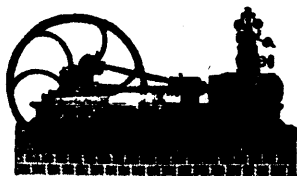
FROSTED HOLLY.—Dip the holly in white of egg or a weak solution of gum, and then sprinkle powdered white sugar over the leaves, it represents frosted holly very well. It is always used for Christmas, and its ornaments dessert dishes, &c., very prettily.

GOOD CORN MEAL PUDDING.—Stir the meal into scalding skim milk, till it is thick as gruel, and, when cool, add ginger, cinnamon, nutmeg, salt, and sweetening to suit the taste, and a little fine cut suet, and some raisins or dried peaches, and a fine cut apple. It should bake an hour or more according to size.

CHEESE TOAST.—Take a slice of good, rich, old cheese, cut it up into small pieces, put it in a tin or iron stew-pan, and to one cup of milk add three eggs; beat eggs and milk together and pour on the cheese; set it on the stove, and when it begins to simmer, stir briskly until it forms a thick curdle, then pour over the toast and carry to table.

TO REMOVE GREASE STAINS FROM WOOD.—Spread some starch powder over the grease spots, and then go over it with a hot flat-iron till you draw the grease; then scrape with glass or a proper scraper, and repeat the starch powder and hot iron. Ammonia liquid may be used as a finish, if the starch does not take all the grease out.

HOW TO COOK CORNED BEEF.—The Boston Journal of Chemistry says: The rule has a Hibernian sound. Don't boil it, for corned beef should never be boiled. It should only simmer, being placed on a part of the range or stove where this process may go on uninterruptedly from four to six hours, according to the size of the piece. If it is to be served, let the meat remain in the liquor until cold. Tough meat can be made tender by letting it remain in the liquor until the next day, and then bring it to the boiling point just before serving.



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