structure." It has been followed down 300 ft., and is still visible. The manganese (metallic) forms only about 1 per cent. of the manganiferous silver ore (R. A. F. Penrose, Jr).

Manganese is often considered a good indication of gold, e.g., in Victoria, Australia, as psilomelane in quartz reefs, or cementing pebbles in auriferous conglomerate of "banket" (R. Brough Smyth), and, associated with talc, in the gold deposits of Minas Geraes, Brazil (W. J. Henwood).

From the above review we may fairly conclude : 1—That veins of manganese ore, although not of frequent occurrence, are known in ordinary stratified, metamorphic, volcanic and plutonic rocks of various ages ; 2—they are usually very irregular in their filling ; 3—they are associated with little or no gangue as a rule ; 4—manganese ore often forms part of the gangue of gold and silver veins, and when not superabundant is considered a good indication for the precious metals ; 5—down to water level black oxides are most prevalent ; below that these in all cases must probably give place to the carbonate or silicate ; 6—commercially speaking, manganese ore veins do not probably go much deeper than 300 ft. vertical ; 7—They generally run N. and S. or as N. E. or N. W. "counters"; 8—manganese ore generally occurs filling gash or superficial veins, coating joints and bed planes, and occasionally forming pockets, bunches and stock works ; 9—manganese and iron ores are in many cases contemporaneous, but generally there is a tendency for the ores to occur in separate layers, bands, patches or nodules in the same section of a vein, joint or plane, or in separate and parallel veins ; 10 —in certain instances oxide of iron has replaced psilomelane ; in other instances, manganese and silica have been deposited together. The former has been dissolved out, leaving cellular crystals of quartz and clay.

CHESS.

Solution to Problem 157.

White.	Black.
1 P—B7	1 Kt x Kt
2 Kt—K4, etc.	If 1 P plays
2 Q—KKt5 (ch) etc.	If 1 Kt plays
2 Kt—B3 (mate)	

Solved by B. M. R.

Solution to Problem 158.

Q—R sq

Solved by B. M. R. and D. A. G.

Game 161.

Played in Berlin in 1860 between the Emperor Napoleon and the Automaton.

We give it not as a specimen of good chess, but as interesting from its historical associations, and a proof that the "royal game" is not always well played by royal personages.

White. Napoleon.	Black. Automaton.
1 P—K4	P—K4
2 Q—KB3	QKt—B3
3 KB—QB4	KKt to B3
4 KKt—K2	KB—QB4
5 P to QR3	P—Q3
6 Castles	QB—KKt5
7 Q—Q3	KKt—KR4
8 P—KR3	B x Kt
9 Q x B	KKt—KB5
10 Q—K sq	QKt—Q5
11 B—QKt3	KKt x KRP (ch)
12 K—R2	Q—KR5
13 P—KKt3	QKt—KB6 (ch)
14 K—Kt2	Kt x Q (ch)
15 R x Kt	Q—KKt5
16 P—Q3	B x KBP
17 R—KR sq	Q x KKtP (ch)
18 K—KB sq	B—Q5
19 K—K2	

and black mates in four moves.

Comments.

The solution to the novelty problem given a fortnight ago is much simpler than it appears at sight. With the exception of the bishop, mate follows on black moving any of his pieces. White's obvious play, therefore, is to block the bishop, which he does by moving R—K2. If B x R, then Q x B, mate. Any other move, as before stated, would be equally fatal.

In the following position Horwith drew white's game in six moves :—

White—K at QB7 ; B's at QR5 and Q sq ; Kt at Q7.

Black—K at QR sq ; Q at K2 ; Kt's at KKt sq and KR2.

His solution was as follows :—

1 B—KB3 (ch)	K—K2
2 B—Kt6 (ch)	K—R3
3 B—K4	Q—R6
4 B—Q3 (ch)	Q x B
5 Kt—B5 (ch)	K—Kt4
6 Kt x Q	

It has lately been shown that white can win the queen in three moves instead of six, and we would be glad to hear how it is done if any of our players can master it. The solution will appear in two weeks.

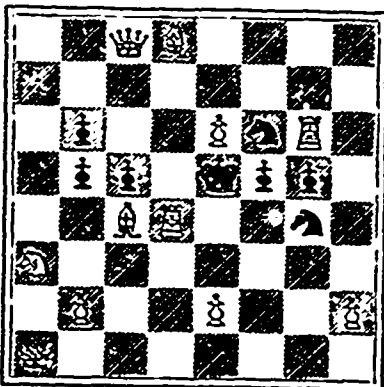Problem 162 shows the greatest number of mates possible in a two-mover—21 :

White—K at KB5 ; Q at Q sq ; R at KR sq ; B's at QR sq and Q5 ; P's at QKt7, Q3, K7 and KB7.

Black—K at KR sq ; R's at QKt sq and KR6 ; B at QB6 ; P's at QKt5 and KKt5.

White to play and mate in two moves.

Problem 161.

Black 8 pieces.

White 11 pieces.

White to play and mate in three moves.

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DRAUGHTS-CHECKERS

All communications to this department must be addressed *directly* to the Checker Editor, Mr. W. Forsyth, 36 Grafton St.

Solutions.

Problem 322.—The position was: black men 5, 21, kings 27, 28; white kings 18, 19, 20, 26 : black to play and white to win. By Oliver McGill, which is the only correct solution that has reached us except that from the authors, Messrs. John Bronsfield and Martin, of Spring Hill, whose end game it was.

27—31	19—24	32—28	24—28
26 30	14 17	23 27	18 23
28—32	24—28	24—20	28—24
20 16	17 13	15 19	6 10
32—27	31—27	5— 9	24—28
18 22	26 31	27 23	23 27
27—32	27—24	20—24	28—24
19 23	22 26	19 15	10 15
31—17	28—32	24—20	24—28
23 26	26 23	15 10	15 19
27—31	32—28	28—24	28—32
16 19	13 17	23 18	27 24
32—28	28—32	24—19	20—27
19 23	17 22	10 6	31 24
28—24	32—28	9—13	white
23 18	22 18	30 26	wins.
24—19	28—32	19—24	
18 14	18 15	26 22	

Problem 325.—The position was: black men 3, 10, 12, 21, king 31 ; white men 5, 11, 23, 30, 32 ; white to play and win.

23 19	19 16	11 7	32 27
a-21—25	12—19	I-18—14	14—18
30 21	1 6	10 17	22 26
31—26	10—15	3—10	white
5 1	6 10	17 22	wins
26—23	23—18	10—14	

a This sacrifice gives the problem all its strength.

Var. I.

18—22	2 6	3— 8	10 15
7 2	24—28	22 18	17—13
15—18	21 17	13—17	18 14
10 15	22—13	6 10	12—16
19—24	15 22	8—12	15 11

and white wins.

Game 211.—White Dyke.

Played recently between our Checker Editor, white, and Mr. Wickwire, of Shubenacadie, black.

11—15	10—17	11—16	13—17
22 17	21 14	a-27 23	19 15
8—11	11—16	b- 7—10	16—19
17 14	26 23	14 7	23 16
10—17	2— 6	3—10	12—19
21 14	29 25	30 25	drawn
9—18	6— 9	5— 9	
23 14	31 26	25 21	
4— 8	9—18	1— 5	
24 19	23 14	22 17	
15—24	16—23	9—13	
28 19	26 19	17 14	
6—10	8—11	10—17	
25 21	25 22	21 14	

b If black had played 1—6 here white could have won by 23 18.

a White might have varied here as follows:

22 18	7—14	27 9	3 8
16—23	18 9	12—16	30—26
14 10	5—14	32 27	c- 8 12

c Here 8—11 would draw, but the move given forms the position which we present as

Problem 327.

Black men 1, 12, 16.
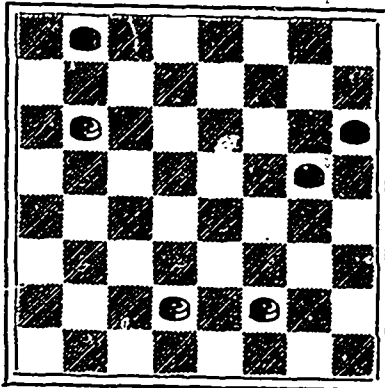
White men 9, 26, 27.
White to play and win.

During the playing of the game we thought this variation would have drawn easily, but failed to see the possibility that this win might occur.