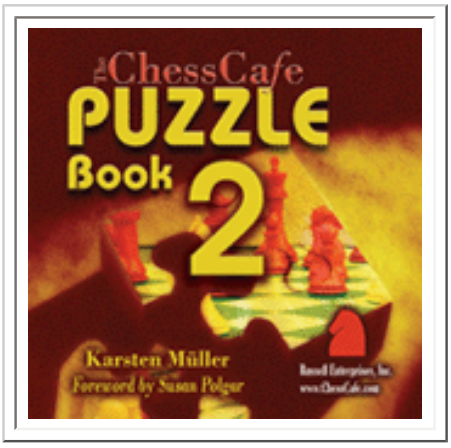
COLUMNISTS

Endgame Corner

Karsten Müller



Chinese Chess

This month I want to make a comparison between Chinese chess and Western chess with a focus on endgame fortresses, but first an explanation of Chinese chess seems to be in order.

The Rules

Chinese chess is played on the intersections of a 9x10 board. The two sides are called red and black. Each side has a king (general), two rooks (chariots), two cannons (or catapults), two knights (horses), two elephants (ministers or bishops), two mandarins (guards or assistants) and five pawns (soldiers). In the middle of the board there is a river. The pieces that can cross the river (rooks, cannons, knights and pawns) are called attacking pieces. The king and the guards are confined to the palace, the 3x3 square around the king (d1-d3-f3-f1 for red).

The rook moves the same as in Western chess. The cannons move like a rook, but to capture it needs a frame (any other piece) to jump over in order to capture the enemy piece behind the frame. This is similar to a cannon ball fired above the frame, which obliterates the enemy by landing on it. The knights move one point vertically or horizontally and then one point diagonally away from its former position, but they cannot jump. For instance, a knight on b1 can move to a3, c3 and d2, but any piece on b2 would block the access to a3 and c3 and any piece on c1 blocks d2. So with pieces on b2 and c1, a knight on b1 cannot move at all. The pawns move and capture in the same way. If they have not crossed the river they can only move forward, if they have crossed the river they can move and capture forward and sideways. If they reach the last rank they remain pawns and can then only move sideways.

The king is confined to the palace and can move forward and sideways, but not diagonally. It also has a special feature called telepotency, where the two kings may not face each other directly on an otherwise open file. For example, a red king on e1 and a black king on e10, with no other pieces on the e-file is an illegal position. This is especially important in the endgame. The guards move diagonally to five different squares inside the palace: d1, d3, e2, f1 and f3 (for a red guard). The ministers move two squares diagonally to seven different squares: a3, c1, c5, e3, g1, g5 and i3 (for a red minister). Ministers cannot jump, so a minister on c1 cannot move to a3 if any piece occupies b2. This is known as stuffing the elephant's eye.

The aim of the game is to checkmate the enemy king or to stalemate the opponent, which is also a win for the side giving stalemate. If both sides do not possess any attacking pieces (rook, knight, cannon and pawn) the game is a draw.

There is a special rule disallowing perpetual check and perpetual attack:

- A player may not put the opponent into check with the same piece more than three times in a row without either side moving any other pieces.
- Continual chasing of a piece is not allowed, e.g. if a black piece moves from

position 1 to 2 to avoid being captured and the red piece moves from A to B to chase black, then red is not allowed to chase continuously, if

- a) the black piece is not protected in position 1 and 2.
- b) black uses exactly two positions 1 and 2 to avoid being captured, and
- c) red uses exactly two positions A and B to chase black. If any of the three conditions is violated continual chasing is allowed.

According to H.T. Lau in *Chinese Chess* (Tuttle Publishing 1985), the values of the pieces are: rook 9, cannon 4½, knight 4, minister 2, guard 2, pawn 2 (after crossing the river), pawn 1 (before crossing the river). And according to D.B. Pritchard in *Popular Chess Variants* (Batsford 2000), they are: rook 12, cannon 6, knight 5, minister 3, guard 2, pawn 2 (after crossing the river), pawn 1 (before crossing the river).

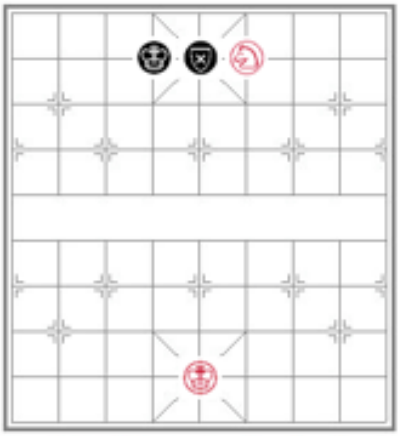
One guideline is: losing one minister greatly endangers the king to the attack of a cannon, while losing one guard opens the gates for an attack of the rooks. In the endgame the value of the cannon decreases as there are fewer pieces that can act as a frame, and the value of the knight increases as there are fewer pieces to block its legs.

Fortresses and Sieges
I will compare the fortress and siege techniques by material and motifs.

A) The Knight in the Attack

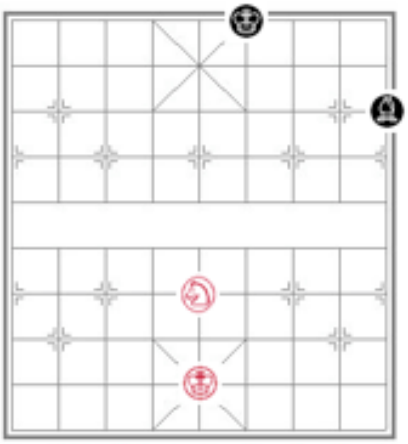
A1) Domination and Zugzwang

A knight always wins against one guard:



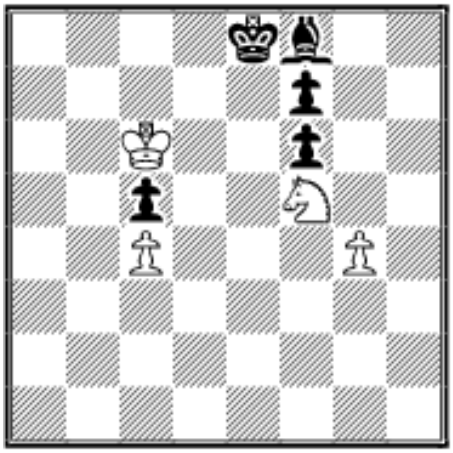
1.Ne7+ Kd8 2.Ng8 Gf8 3.Nf6 Ge9 4.Nd7 Gf10 5. Nb8 Ge9 6.Nc10+, forking the king and guard and winning the guard.

The ending of knight vs. minister is more interesting. If the minister and defending king are on one side of the board with the attacking king controlling the central e-file it is very dangerous.



Red wins by **1.Nd6** (but not 1.Ng5?, when 1... Mg6! blocks the legs of the knight in a forward direction, so that it cannot move to f7 to stuff the elephant's eye in a central direction) **1...Mg10 2. Ke3 Kf9 3.Nf5 Kf10 4.Ng7+–** with full domination. Black is in *zugzwang* and must lose the minister and the game.

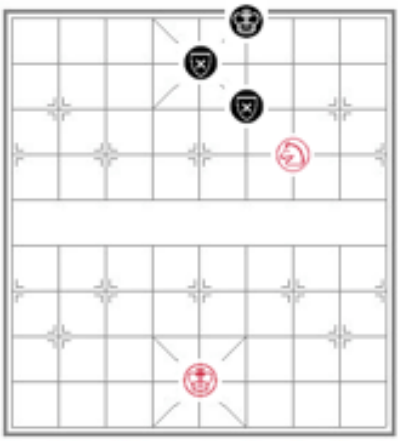
Here is a similar domination in Western chess:



72.01 Domination

White wins with **1.Kc7!**, which forces Black to allow a pawn endgame: **1...Be7 2.Nxe7 Kxe7 3. Kc6+–** and White wins the resulting race.

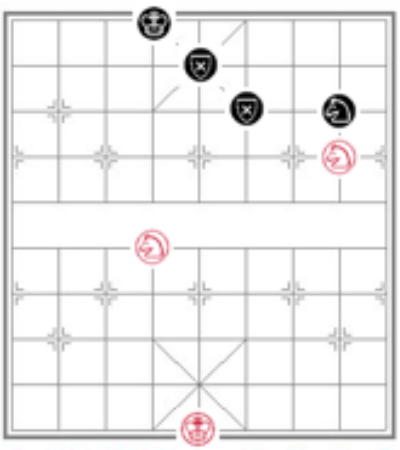
Two guards draw against a knight:



1.Nh9+ Kf9 2.Ke3 Gd10 (of course not 2... Gf10?? 3.Ng7 mate) **3.Kf3 Ge7 4.Kf2**, Black is now in *zugzwang* and it seems that he loses his pinned guard on f8, but red's knight will be won back because of the pin: **4...Gd10 5.Nxf8 Ge7** winning the pinned knight and drawing.

A2) Two Knights are a Powerful Attacking Force

If one knight is added to both sides the attacker always wins:

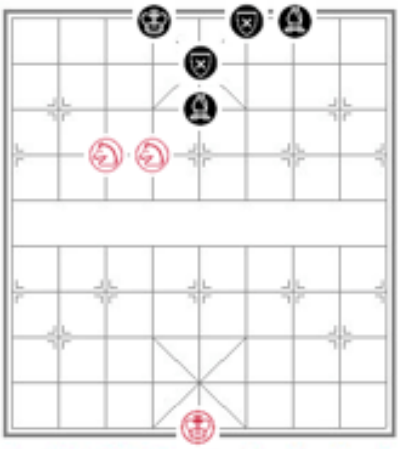


1.Nc7 Nf7 2.Nb9+ Kd9 3.Nf6 Nd6 4.Kd1 Gd8 5. Nd7 (after 5.Nxd8?, Black can use the pin because of the telepotency of the king with 5... Nf7=) **5...Gfe9 6.Kd2 Gf10 7.Ke2 Gfe9 8.Ke1 Gf10 9.Nf8+ Ne8 10.Nc7+ Ke9 11.Nxe8** and red wins.

Of course, adding more winning potential increases the chances of the attacker in both versions of chess. One example in Western chess that fits into this context is the endgame of two knights vs. king, which is drawn, while as a rule

three knights defeat one knight.

Two knights are indeed a very powerful attacking force in Chinese chess. They can even defeat two guards and two ministers (something a rook cannot do) if the defense is properly coordinated:

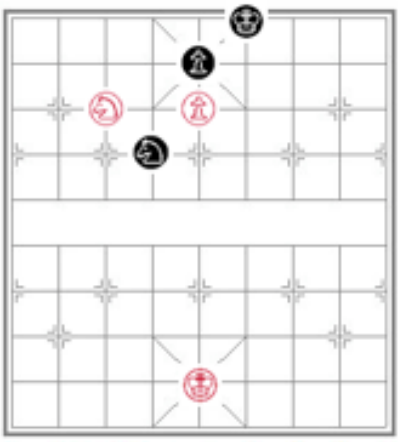


1.Nb9+ Ke10 2.Nc9+ Kd10 3.Nxe8+ Kd9 4.Ng9 +–.

In Western chess there are similar paradoxes: a rook and bishop defeat two knights in a pawnless endgame, while queen against two knights is drawn if the defender is reasonably placed.

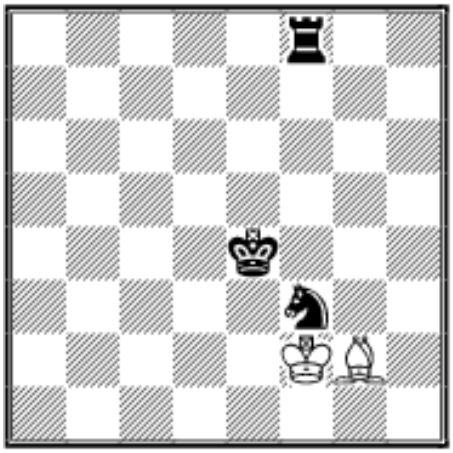
B) Pin

Li presents the following example in *Syllabus on Horse* on p.182:



Red to move can win with **84.Pxe9!**, as knight and pawn win against a single knight and the pawn is already well-placed in the center of the palace to restrict the king. In the game Wu Xia-Wen Jin, National Team Championship Harbin 2003, red played **84.Nxe9? Nf6 85.Pf8 Ke10!** and the knight can not extricate itself from the pin, so the game was later drawn.

Of course, similar fortresses exist in chess as well:

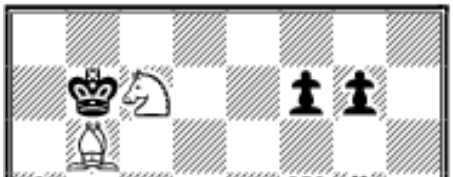


72.02

Black cannot win as he cannot rescue the pinned knight: **1.Bh1=**

The following fortress is quite typical, as the last pawn is often worth its weight in gold.

72.03 *V. Kramnik* (2770) - *G. Kasparov* (2849)
BGN World Championship, London 2000



Objectively Black is lost, but Kasparov makes White's job as difficult as possible.

52...Be3!

Exchanging the important defender.

53.Bxe3

53.Nd5? Bxb6 54.axb6 Kc6=.

53...Rxe3 54.Rxf7?

54.Nd5 (Kramnik) was necessary to protect the a-pawn with the knight from behind.

54...Re5?

Miguel Illescas proved that 54...Kc6! leads to a drawn position.

55.a6+?

55.Nd5+ Ka6 56.Nb4+ Kb5 57.Rf4+– (Kramnik).

55...Kb6 56.Rxg7 Ra5

Kramnik has a piece and a pawn to his advantage, so he should win, shouldn't he?

57.Kd2 Ra1 58.Kc2

58...Rh1?

Wim van Os indicates that the black rook had to stay on the a-file.

59.Kb2?

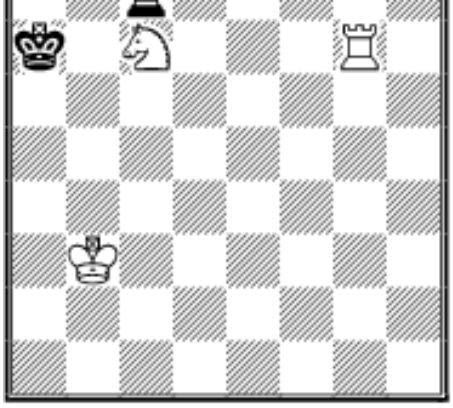
Kramnik misses his chance. 59.Rg8! Rh2+ (59...Kxc7 60.a7+–; 59...Ra1 60.Nd5+ Ka7 61.Nb4+–) 60.Kd3 Rh3+ 61.Ke2 Rh2+ 62.Kf3 Rh3+ 63.Kg2! (van Os) (63.Kg4? Ra3!=) 63...Ra3 64.Nd5+ Kc5 (64...Ka7 65.Nb4+–; 64...Kxa6 65.Ra8++–) 65.Rg5 Kb5 66.Rg6 Kc5 67.Nc7+–.

59...Rh8 60.Kb3 Rc8 61.a7

61.Kb4 Rxc7 62.Rxc7 Kxc7 63.Kc5 Kb8=.

61...Kxa7

The endgame with rook + knight vs. rook is nearly always a draw. In Chinese chess, rook and knight would prevail.



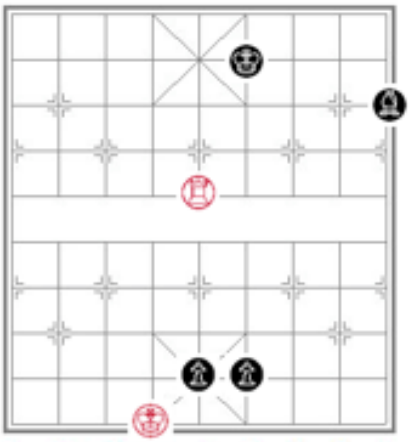
62.Kb4 Kb6 63.Nd5+ Ka6! 64.Rg6+ Kb7 65. Kb5 Rc1 66.Rg2 Kc8 67.Rg7 Kd8 68.Nf6 Rc7 69.Rg5

69.Rg8+ Ke7 70.Nd5+ Kf7!=.

69...Rf7 70.Nd5 Kd7 71.Rg6 Rf1 72.Kc5 Rc1+ 73.Kd4 Rd1+ 74.Ke5 ½–½

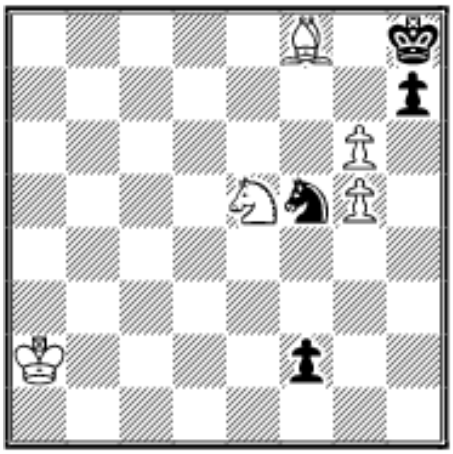
C) Incarcerated Piece

Such fortresses occur in both versions of the game:



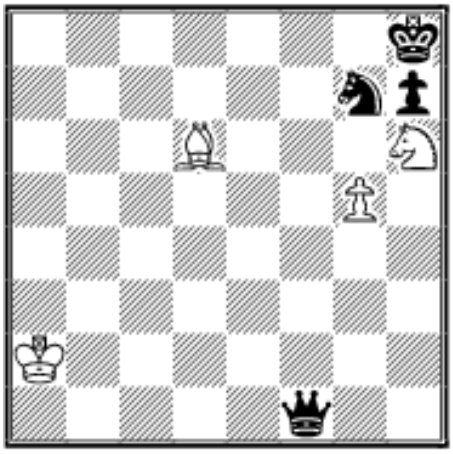
Normally one minister and two pawns lose against a rook, but in this special case red's king is incarcerated and, surprisingly, the rook cannot defeat the minister: **1.Ri6 Ke9 2.Rxi8 Pf1** and Black draws because of the mating threat.

One example from chess:



72.04 *G.Zakhodiakin*
Shakhmatny Listok 1930

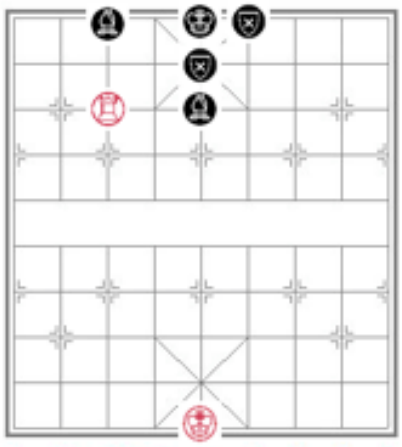
1.g7+ Nxg7 2.Nf7+ Kg8 3.Bc5 f1Q 4.Nh6+ Kh8 5.Bd6=



D) Secure Camp

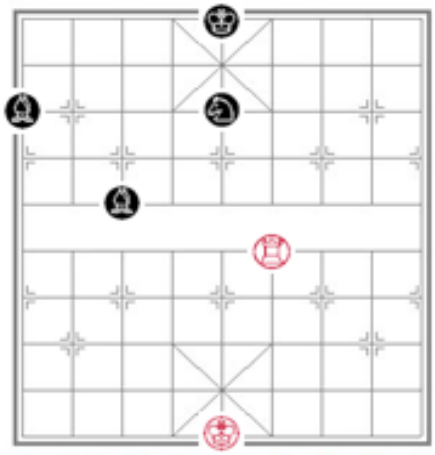
This fortress also exists in both versions of the game. For Western chess I refer the reader to the rich body of literature of the game. For Chinese chess I present the following:

1) The rook cannot win against full defense:



Guards and ministers are well-placed on different sides and the rook cannot make progress.

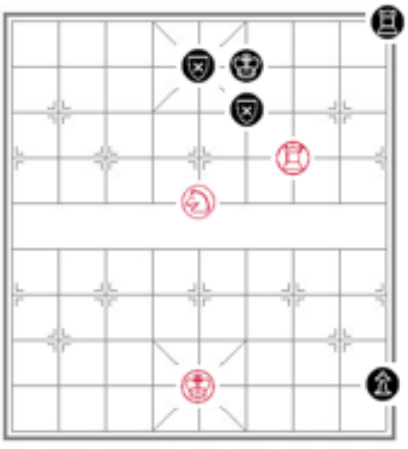
2) With two ministers and knight it is different. The rook usually wins, but there is one fortress with so-called high ministers:



It is important that the king can freely move in its palace without stuffing an elephant's eye.

E) The Unfortunate Pawn

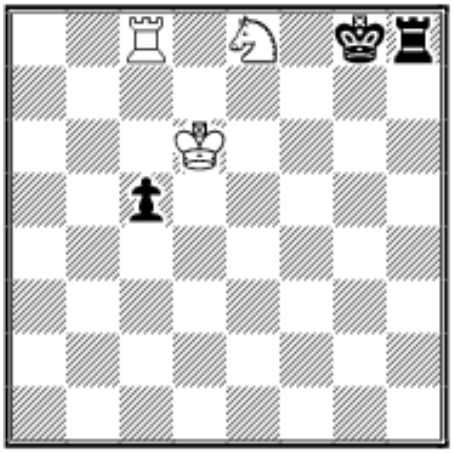
Rook and knight form a formidable attacking duo, but rook and two guards can draw against them, if they are reasonably placed. But sometimes the rook is hindered by a friendly pawn:



1.Rg9+ Kf10 2.Ng7 Ke10 3.Nh9 Kd10 4.Rg4 Gd8 5.Nxf8 Rf10 6.Nd7 Re10+ 7.Kd2 Re8 8. Rg10+ Kd9 (8...Re10 9.Rg8 Ge9 10.Rc8 Kd9 11. Re8 Kd10 12.Ke2 and red wins the pinned guard or the rook) **9.Nb8+ Ke9 10.Nc10+ Kf9 11.Rg9+ Kf10 12.Rg2 Ri8 13.Ke2 Re8+ 14.Kd2 Ri8 15. Ke2** and Black loses the guard or the pawn because of the mating threat Rf2+ as he is not allowed to give the check on e8 any longer.

In chess the additional pawn not only prevents rook checks, but also stalemate:

72.05 ***Mandler*** 1927



1.Ke7!

1.Ke6? Kh7 2.Kf7 Kh6=.

1...c4

1...Rh4 2.Nf6+ Kg7 3.Rg8+ Kh6 4.Kf7+–; 1... Kh7 2.Rc6+–; 1...Rh7+ 2.Ke6 Rh8 3.Rc7+–.

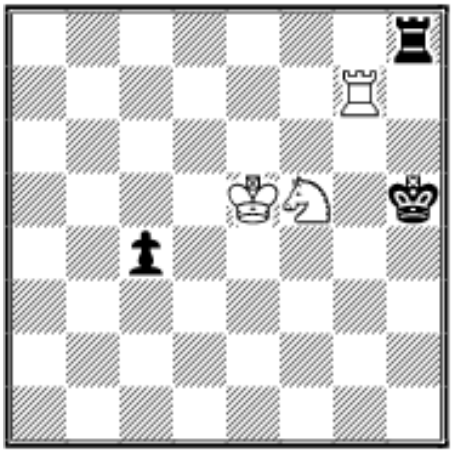
2.Ke6!! Kf8

2...Kh7 3.Rxc4 Rf8 4.Nf6+ Kh6 5.Rh4+ Kg7 6. Rg4+ Kh8 7.Kf5 Ra8 8.Rh4+ Kg7 9.Rh7++–.

3.Nd6+ Kg7 4.Nf5+ Kh7 5.Rc7+ Kg6

5...Kg8 6.Rg7+ Kf8 7.Rf7+ Ke8 8.Nd6+ Kd8 9.Rd7#.

6.Rg7+ Kh5 7.Ke5

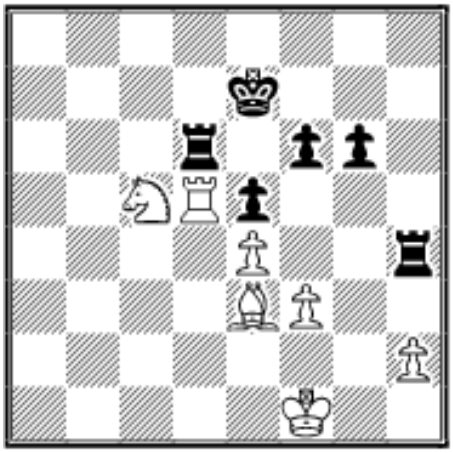


The remaining pawn is Black's undoing.

7...c3 8.Kf4 c2 9.Rg5#

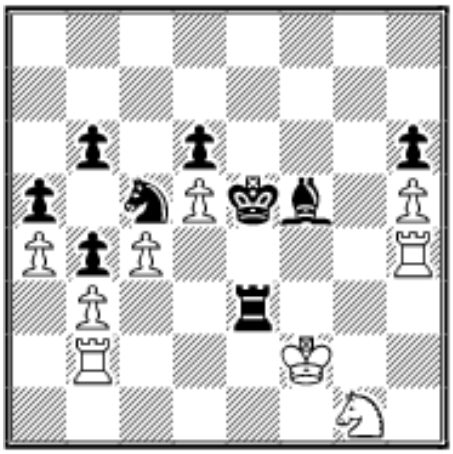
I would like to thank Dr. René Gralla and Michael Taktikos for providing material and ideas for this column.

Solutions to last month's exercises



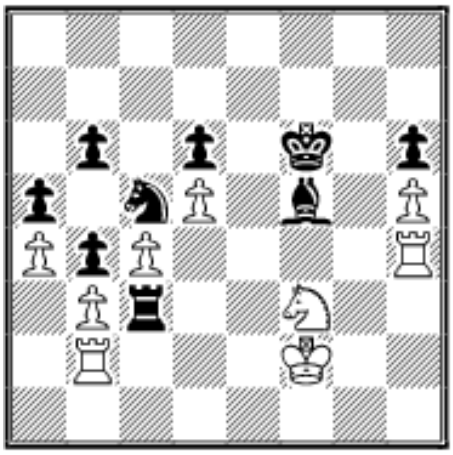
E71.01 *M.Stean* (2420) – *W.Browne* (2550)
Buenos Aires ol (Men) 1978

White can exchange rooks with the small combination: **38.Rxe5+! Kf7** 38...fxe5 39.Bg5+ Kf7 40.Bxh4+–. **39.Rd5 Rxd5 40.exd5 Rxh2 41. Ne4** The passed d-pawn will decide the issue sooner or later. **41...Rh5 42.Nc3 Rh2 43.Bd4 f5** 43...Rd2 44.Bxf6+–. **44.Be5 Rc2 45.f4 Ke7 46. Ne2 Rd2 47.Nd4 Kd7 48.Ke1 Ra2 49.Nb3 Rc2 50.Kd1** White's king can finally join the rest of its forces, as Nc5+ must be prevented. **50...Rc8** 50... Rh2 51.Nc5+ Kd8 52.d6 Rh7 53.Kd2+–. **51.Kd2 Rc4 52.Kd3 Rc8 53.Kd4 Rc2 54.Nc5+ Ke7 55.d6 + Kf7 56.Kd5 Rd2+ 1–0**



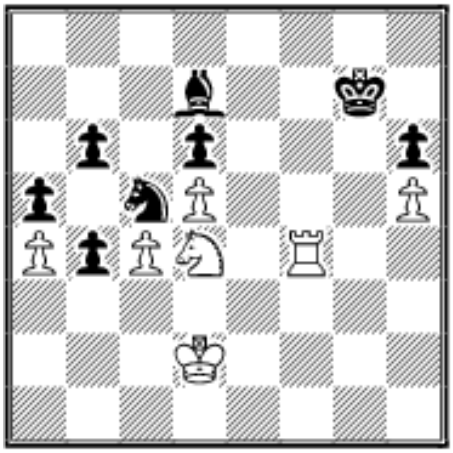
E71.02 *I.Sokolov* (2685) – *V.Topalov* (2757)
Corus Wijk aan Zee 2005

The side fighting against a rook should usually keep as many pieces on the board as possible. So **59...Rxb3?** was a mistake. Now the only question is if White can win or not. 59...Rc3! was called for, to keep the active rook on the board, e.g. 60. Nf3+ Kf6:

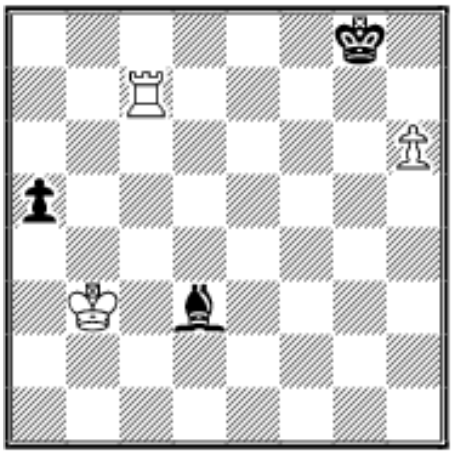


It is difficult to find a useful move for White, because of the pressure of Black's active c3-rook. After 61.Kg2, Black should again avoid the exchange of rooks: 61...Nxb3 (61...Rxb3?! 62.Re2 is dangerous for Black because of White's active rooks.) 62.Rf4 Nc1 63.Nh4 Kg5 64.Rxf5+ Kxh4 65.Rf6 Nd3 66.Rb1 Rc2+ 67.Kf1 Ne5 and Black's counterplay is sufficient.

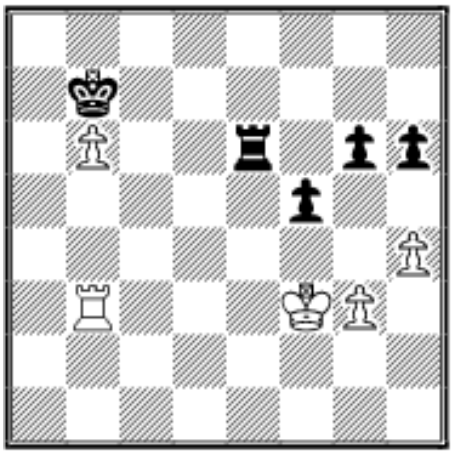
60.Rxb3 Nxb3 61.Nf3+ (61.Ke3!?) **61...Kf6 62. Ke3 Bd7 63.Rf4+ Kg7** (63...Ke7!?) **64.Nd4 Nc5 65.Kd2**



Topalov solves his problems convincingly: **65... Kg8!** 65...Bxa4? 66.Ne6+ plays into White's hands. **66.Ne6 Nxe6 67.dxe6 Bxe6 68.Rd4 Kf7 69.Rxd6 Bxc4 70.Rxh6 b5!** As a rule, the defender exchanges pawns, the attacker pieces. **71. axb5** 71.Rc6 b3 72.Kc3 Be2 73.axb5 Bxb5 74.Rc7 + Kg8 75.Kxb3 Be2 76.h6 Bd3=.

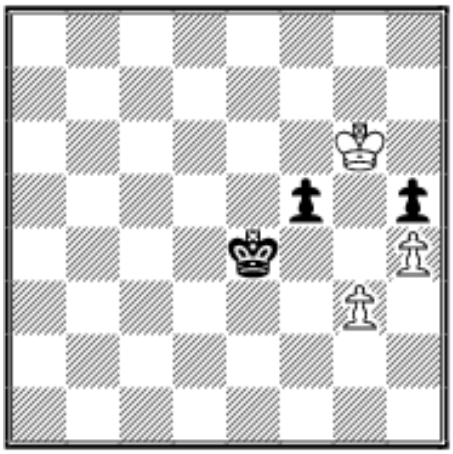


Reaching a well-known fortress. **71...Bxb5 72. Rg6 Be8 73.Rg1** 73.Rg5 Kf6 74.Rxa5 b3 75.Kc3 Kg7 76.Kxb3 Kh6=. **73...Kf6 74.h6 Bg6 75.Rf1+ Kg5 76.Ra1 ½–½**



E71.03 *T.Chistiakova* (2351) – *S.Shaidullina* (2293)
56th ch-RUS w Top League Orel 2006

Exchanging into a pawn endgame is always dangerous. **71...Rxb6?** The rook endgame after 71...g5 is completely drawn: 72.hxg5 (72.Rb5 gxh4 73.gxh4 Rxb6=) 72...hxg5 73.Rb5 f4 74.g4 Re3+ (74...Rxb6? 75.Rxg5+–) 75.Kf2 Rg3 76. Rxg5 Kxb6=. **72.Rxb6+ Kxb6 73.Kf4 Kc5 74. Ke5 h5** 74...Kc4 75.Kf6 Kd5 76.Kxg6 Ke4 77.h5 (77.Kxh6? Kf3=) 77...Kf3 78.Kxf5 Kxg3 79.Kg6 Kf4 80.Kxh6 Kf5 81.Kg7+–. **75.Kf6 Kd5 76. Kxg6 Ke4**



Black must have missed the next move in her calculations: **77.Kg5!!** 77.Kxh5? Kf3 78.Kg5 Kxg3=. **77...Ke5 78.Kxh5 Kf6 79.Kh6 f4 80.gxf4 Kf7 81.Kg5 Kg7 82.Kf5 Kf7 83.h5 Kg7 84.Ke6 Kf8 85.f5 Ke8 86.f6 Kf8 87.f7 Kg7 88.Ke7 Kh7 89.h6 1–0**

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