# British Endgame Study News

**Volume 11 Number 4**                                            **December 2006**

### Contents of this issue

*by* Jeremy Morse
White to play and win

**This issue.** The early despatch of the September issue meant that I couldn't even insert a "Stop Press" slip describing the latest results from Marc Bourzutschky and Yakov Konoval, but this time's middle pages try to make up for it. This apart, there is a zugzwang challenge which Jonathan Mestel set at the recent international problemists' meeting, a special number devoted to the studies of the Baltic German composer Johann Sehwers, and an updated composite index. I have found this single composite index very convenient, and in future I shall update it year by year and discontinue the previous annual indexes.

Jeremy Morse's study above recently appeared in Ian Watson's column in *Correspondence Chess.* It is unashamedly problemistic in style, but I think it will be found amusing. Try it before looking inside (note that White is in check).

**Accounts for 2006.** UK readers are being charged £7 for the year (£8 to the rest of Europe, £10 elsewhere). There is a reminder letter with this issue if your subscription has run out; if there isn't, please assume you remain in credit until told otherwise.

**Six-man endings: end of a saga.** Eiko Bleicher's site <www.k4it.de> now offers a complete look-up service for all 3-3 and 4-2 endings, with or without pawns.

**Spotlight** (see also back page). Timothy Whitworth points out that Crosskill's analysis of R + B v R (2 in special number 48) appeared in the *Chess Player's Magazine*, and that what he gave differs from what is in the *Oxford Companion* ! Specifically, Crosskill did indeed give preference to the better move 38...Rc7. Alain Villeneuve has also commented, and I'll have to come back to this next time. But if we can't rely on the *Oxford Companion*, what *can* we rely on?

Paul Valois tells me that my attribution of **7** was incorrect; it was in fact analysis, apparently by Gunsberg, of a game position which had been abandoned as drawn, and Fasan was merely the player who had Black. The *Leeds Mercury Weekly Supplement* quoted it thus from the *Metropolitan Magazine* with bNb6 and Black to move; the players had agreed a draw, but the *MM* editor, Gunsberg, felt White had a win. Apparently there was a full analysis in issue 4 of the *MM*.
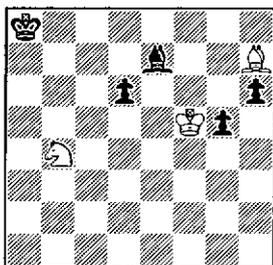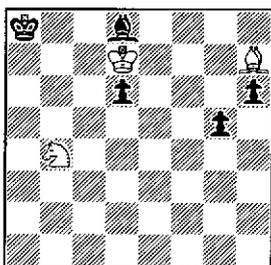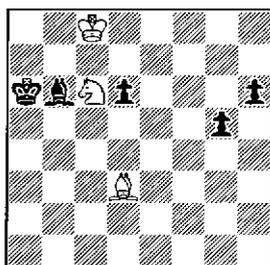
# Recently published British originals



**1 - win**



**1a - after 2 Kd7**



**1b - 2...Bb6, 5 Bd3 mate**

Paul Michelet's **1**, which develops a study by Pogosyants, appeared recently in *Correspondence Chess*. **1 Ke6 Bd8 2 Kd7** gives **1a**, and where will Black go?

Try **2...Bf6**: no, **3 Kc7** threatens mate by Nc6, Kc8, and playing the White bishop round to b7, and if **3...Ka7** then **4 Nc6+ Ka6 5 Bd3 mate**. All right, try **2...Ba5** attacking the knight: no, the counterattack **3 Nc6** gains a tempo, and after **3...B~ 4 Kc8** we will again have mate on b7. This leaves **2...Bb6**, after which we have the Pogosyants finish: **3 Kc8!** (White's third different move) **Ka7** (else 4 Nc6 shuts him in) **4 Nc6+ Ka6 5 Bd3 mate** and Black's bishop has blocked its own king (see **1b**).
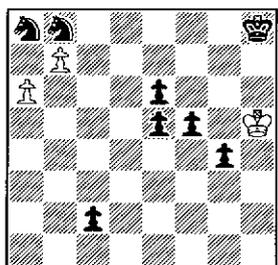


**2 - win**
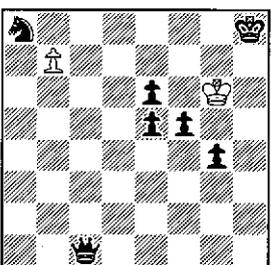


**2a - after 4 Kg6**
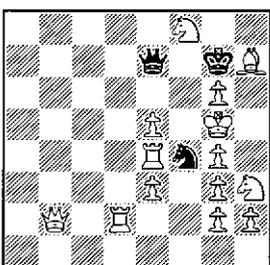


**3 - win**

Caspar Bates's **2** was in the September *Problemist*. 1 bxa8Q c1Q is drawn, hence **1 a7**, and after **1...c1Q 2 axb8Q+** the given move is **2...Kh7** threatening mate on h6 and seemingly leaving White with no good check - no, **3 Qh8+ Kxh8 4 Kg6!** (see **2a**) and White's last pawn triumphs. If instead 2...Kg7 then 3 Qh8+ and 3 Qxe5+ Kh7 4 Qh8+ both win (if 3...Kf7 in either line then 4 bxa8Q leads to a quick mate).

And were you caught by Jeremy Morse's **3**? The natural move is 1 Kxf4, but after 1...Qf6+ 2 exf6+ Black sets up a sequence of self-stalemates, 2...Kh6 3 g5+ Kh5 4 g4+ Kh4 5 g3+ Kxh3, and White cannot release the last of them. Instead, **1 Kf5**, and after **1...Qxf8+ 2 Kg5 Qe7+** there is no knight on f8. *Now* White plays **3 Kxf4**, and after 3...Qf6+ 4 exf6+ Kh6 he has say 5 Bg8. In 1984, Jeremy set the stalemates in a study to draw (**11** in special number 15). Here Black has them, and White must outwit him.
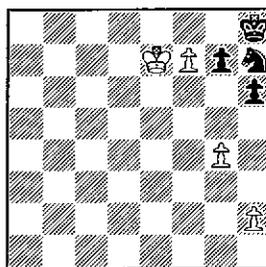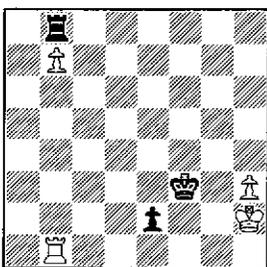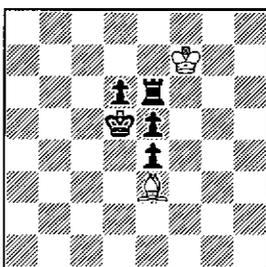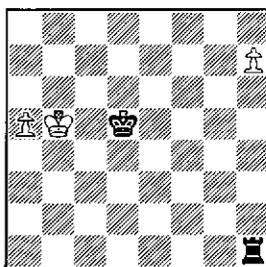
# Jonathan Mestel's zugzwang challenge
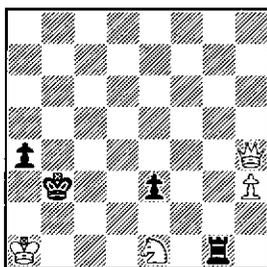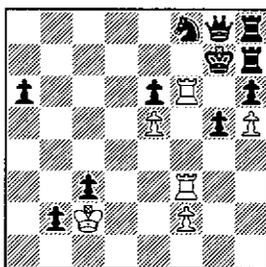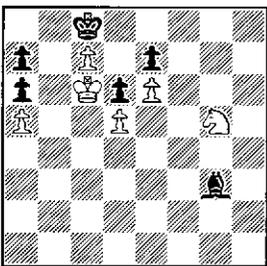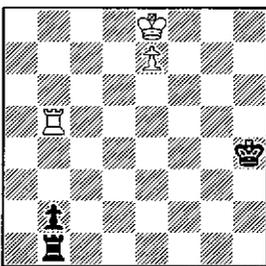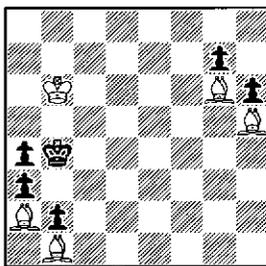


At the international problemists' meeting earlier this year, Jonathan Mestel set the world's best solvers an unconventional challenge. Some of the positions above are reciprocal zugzwang, and some are not; in each case, and with each side to move, who if anybody wins, and why?

He gave **0** as an example. If White has to move, he will lose: **1 Kb1 a3**, with **2 Ka1 a2z** or **2 Kc1 a2 3 Kd1 a1Q+ 4 Ke2 Qc3**. Black to move also loses, **1...a3 2 Kb1 a2+ 3 Ka1z**.

He has invited me to reproduce the challenge in *BESN*, and I am sure readers will enjoy having a go. Answers on pages 350-1.

# The first 7-man endgame tables with pawns

Another report from Marc Bourzutschky, this one sent on August 27. "After having computed a fair number of 7-man tablebases without pawns, Yakov Konoval and I have now started on endgames with pawns. These will be of more practical interest than the pawnless ones, although will likely contain no new depth records. We think that the 517 moves to conversion in Q + N v R + B + N will remain the deepest 7-man endgame." As usual, I am standardizing notation even within quotations.

Marc describes their collaboration in the following terms. "Yakov develops all the generation programs, with very little input from me. I supply the computer hardware, data mining programs, and verification runs. The verification run checks the self-consistency of the tablebase by performing a one ply search for each position (both Black and White to move) and verifying that the score of the best move is indeed what is stored in the table. This is a necessary and sufficient condition for tablebase accuracy. Since the verification program was developed independently of the generation program (I don't even have the source code for the generation program) the likelihood of errors is pretty small." He says that the only common code is the "ZLIB compression library", which I presume workers in the field will recognize.
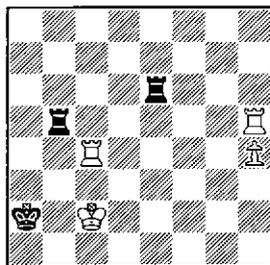
The endgames considered so far are 2R + P v 2R, 2Q + P v 2Q, and 2B + P v 2N. The algorithm employed is a simple extension of the one used for the pawnless tablebases. This results in a table giving the shortest distance to capture or promotion. It would be more efficient to calculate the shortest distance to capture or pawn move, but this would require more substantial code changes. But even with the simpler algorithm, 2B + P v 2N, which can require 179 moves to capture or promotion, took less than two weeks on Marc's 3.8 GHz machine.
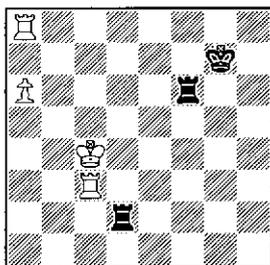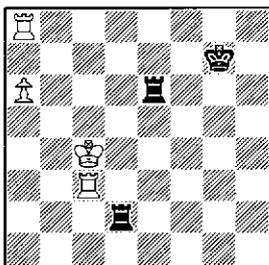


1 - WTM wins in 28          2 - draw only          3 - BTM loses in 135

"At first glance 2R + P v 2R seems to contain no big surprises. Just as in R + P v R the defender can usually draw if his king can safely control the promotion square. If the defending king is cut off, things can get very complicated. The addition of another pair of rooks to R + P v R helps the attacker a bit, but apparently not enough to substantially reduce Black's chances for a draw. An obvious starting point is the well known Vančura draw (wKc4, Ra8, Pa6, bKg7, Rf6). Adding a white rook on c3 and a black rook on d2 (see 1) results in the longest win for White from these

types of positions. However, most positions of this type are drawn. For example, moving Black's rook from f6 to e6 (see **2**) yields a draw." The maximal line for the ending as a whole is a loss in 135 moves by Black (see **3**).
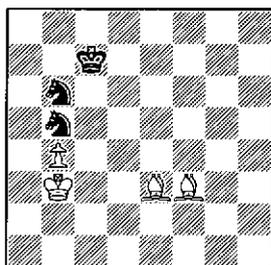
"2Q + P v 2Q is usually a draw. The maximal winning line is 100 moves (see **4**)."
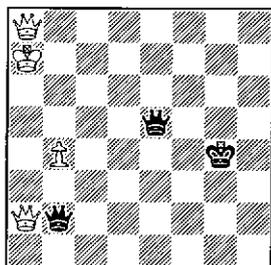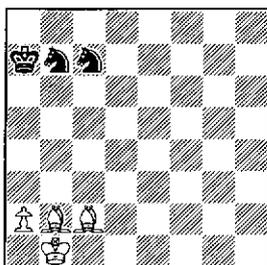


**4** - WTM wins in 100     **5** - draw only, but see text     **6** - WTM wins

"2B + P v 2N has some interesting features. It appears as if it is usually a win if White has a knight pawn, but a draw for other pawns. For example, position **5** is drawn. If this position is shifted one file to the right, White wins, while if it is shifted 2 or 3 columns to the right it is a draw. Understanding position **6** may shed some light on this. **1 Bg1**. Strangely, this seems to be the only way to make progress. This also wins if the Black knights are on b5 and d6. It looks like after other moves White eventually has to play Bg1 anyway. The starting position shifted one file to the right is drawn, apparently because White would need an i-file to operate on. **1...Na7 2 Kc3 Nb5+ 3 Kd3 Na7 4 Ke4 Nb5 5 Ke5 Na4** (5...Nd6 6 Ke6 Ndc4 7 Bh2+ Kc8 8 Bh1 Nd7 9 Kd5 Ne3+ ((9...Ncb6+ 10 Kc6 Nc4 11 Bd5 Ncc5+ 12 Kd6 Ng4 13 Bf4 Ndf6 14 Bf3, or 9...Na3 10 Bf3 Nb5 11 Bg2 Kd8 (((11...Nc3+ 12 Kc6 Nb8+ 13 Kd6 Nb5+ 14 Kc5 Nc3 15 b5 Na4+ 16 Kd6 Nb6 17 Bg1 Nc4+ 18 Ke7 Kc7 19 Bh2+ Kc8 20 Bh3+))) 12 Kc6 Nd4+ 13 Kb7)) 10 Kc6 Nc2 11 Kb5 Na3+ 12 Ka5 Nc4+ 13 Ka6 Nb8+ 14 Ka7 Nd7 15 b5) **6 Kd5 Na3 7 Bh5 Kb7 8 Be8 Nc3+ 9 Kc5 Ne4+ 10 Kd4 Nd6 11 Bh5 Kc6 12 Bf3+ Kb5 13 Kc3 Ka6 14 Kb3 Nab5 15 Bg2 Na7 16 Ka4 Ndc8 17 Bf1+ Kb7 18 b5 Nb6+ 19 Kb4 Kc7 20 Bh2+ Kd8 21 Ka5 Nac8 22 Ka6 Nd7 23 Kb7 Nc5+ 24 Kc6 Na4 25 Bc7+.**

"With a bishop pawn, Black's drawing chances increase, especially if the pawn can be blocked before it reaches the 5-th rank. With a center pawn, they increase further. With a rook pawn, Black can usually draw by blocking the pawn with a knight, protected by the other knight."

This has been the briefest of extracts, and I am sure that more detail will be appearing elsewhere. Marc and Yakov are also temporarily computing some endings ignoring underpromotions. "This drastically reduces the number of tables that have to be computed and will probably give accurate results for most positions of interest. We are currently computing 4P v R and Q + 2P v 2R this way." Yes, of course these will eventually have to be recalculated with underpromotions allowed, but I am sure it is a sensible short-term simplification - and, as a bonus, comparing the two sets of tables will immediately identify all the positions where underpromotion makes a difference.
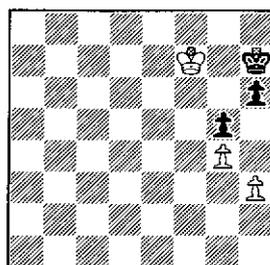
# Solutions to the zugzwang challenge
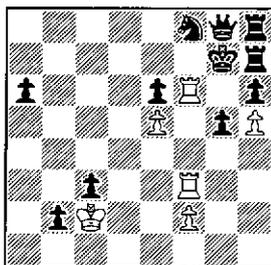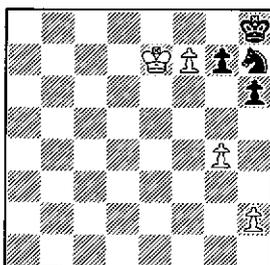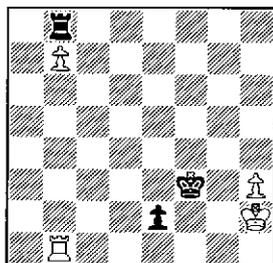


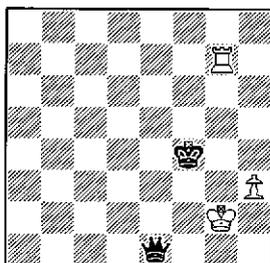1 - Black always wins     2 - White always wins     2a - see text

**1** is won for Black. WTM, **1 Kb1 a5 2 Kc2/Ka2 a4 3 Kb1 a3** etc; BTM, **1...a5 2 Kb1 a4 3 Kc2/Ka2 b1Q+! 4 Kxb1 a3** and the same.

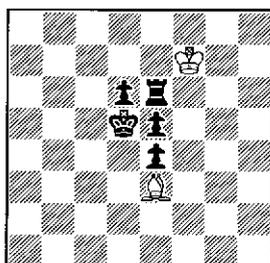**2** is won for White. BTM, **1...g6 2 f8Q+ Nxf8 3 Kxf8 g5 4 Kf7 Kh7 5 h3 (2a BTM) h5 6 h4! Kh6 7 Kf6**. WTM, 1 h4 g5, 1 h3 g6 2 f8Q+ Nxf8 3 Kxf8 g5 (2a WTM) 4 Kf7 Kh7 5 Kf6 h5, but**1 Ke8! Nf6+ 2 Kd8 Nh7 3 Ke7** and we have **2 BTM**.



3 - ZZ (WTM –, BTM =)     3a - White holds the draw     4 - Black always wins

**3** is reciprocal zugzwang. WTM loses, **1 h4 Rxb7 2 Rxb7 e1Q 3 Rf8+ Kg4** or **1 Rb3+ Kf2 2 Rb1 e1Q 3 Rxe1 Kxe1 4 Kg3 Rxb7 5 Kg4 Kf2 6 h4 Rb4+ 7 Kg5 Kg3 8 h5 Rb5+ 9 Kg6 Kg4 10 h6 Rb6+ 11 Kg7 Kg5 12 h7 Rb7+ 13 Kg8 Kg6 14 h8N+ Kf6**. BTM can only draw, since **1...Kf2 2 h4** gives White an extra tempo. Black has the dangerous try **1...Kf4!?** when 2 Rb4+? Ke3! 3 Rb1 Kf3 gives **3 BTM**, but **2 Kg2! Rxb7 3 Rxb7 e1Q 4 Rg7!!** gives White a positional draw (see **3a**). It is essential to prevent ...Kh5 in this ending or Black wins. 3 Ra1 Ra7 4 Rxa7 also draws here, but not 4 Rb1? Ke3 as the White rook does not have enough checking distance.

**4** is won for Black. WTM is easy, **1 B~ e3 2 Bxe3 e4** etc. BTM wins by **1...Re8! 2 Kxe8 Ke6!** though not by 1...Kc4 nor by 1...Rh6.

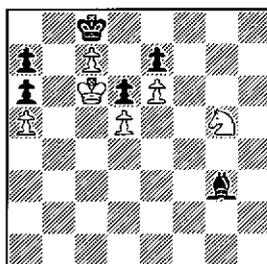**5** is won for Black to move. WTM draws by **1 a6** (not 1 Kb6? Kc4! 2 a6 Rh6+) **Rb1+ 2 Ka5** (see **5a**) **Rb8 3 a7 Rh8 4 Kb6**, since 2...Kc5? can be met by 3 h8Q controlling a1. BTM therefore wins by **1...Rh2!!!z 2 a6** (2 Kb6 Kc4 3 a6 Rh6+) **Rb2+ 3 Ka5** (3 Ka4 Kc4!) **Kc5! 4 Ka4 Rb8**. If instead 1...Kd6? then 2 Kb6 Kd7

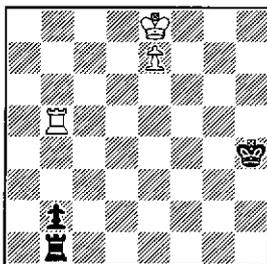- 350 -
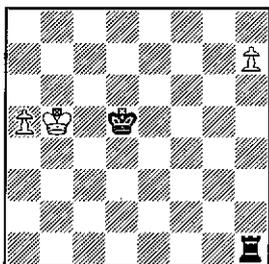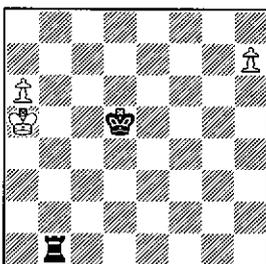
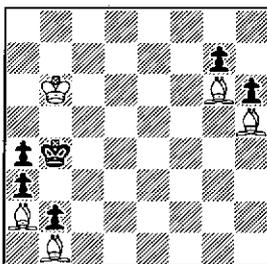**5** - BTM +, WTM =        **5a** - WTM, after 2 Ka5        **6** - ZZ (WTM =, BTM –)

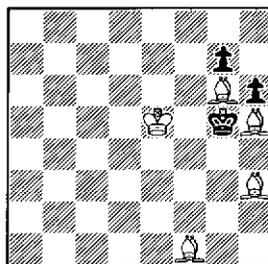3 Kb7 Rxh7 4 a6 Kd6+ 5 Kb6! Rh1 6 Kb7! Rb1+ 7 Kc8!.

**6** is reciprocal zugzwang. "White wins if he can play Nf5 or Nxd6 or sometimes Nb6+." WTM can only draw, **1 Ne4 Be5z 2 Nd2 Bd4z 3 Nc4 Bc5z** or **1 Nf3 Bf2!z 2 Ne5 Be3z.** BTM loses, **1...Bf4 2 Nf7z** or **1...Be5 2 Ne4z Bh2 3 Nf6 Bf4 4 Nd7 Be3 5 Ne5z Bd4 6 Nf7 Bc5 7 Nh6** and **8 Nf5**.





**7** - ZZ (WTM =, BTM –)        **8** - ZZ (WTM =, BTM –)        **8a** - see text

**7** is reciprocal zugzwang. BTM loses, **1...Kg4 2 Kf7 Rf1+ 3 Kg6 Re1 4 Rb4+ Kh3 5 Kf6 Rf1+ 6 Kg5 Rg1+ 7 Kh5 Re1 8 Rb3+ Kg2 9 Rxb2+ Kf3 10 Rb7 Re6 11 Kg5 Ke4 12 Ra7 Ke5 13 Rd7z Ke4 14 Rd1.** WTM only draws, **1 Kf7 Rf1+ 2 Kg6 Rg1+!** or **1 Rb3 Kg5 2 Rg3+ Kf6 3 Rf3+ Kg7! 4 Rf2 Ra1!** (compare **3**: if the b-pawn were an a-pawn, White would win with 1 Ra3!).

So is **8**. "I included this position to make sure a computer couldn't solve all of them! But it's hard for people too. Black draws if his king reaches f8, h6, a3 or a1. To win it is important to keep both the g & h pawns. Once the black king is trapped below the c1-h6 diagonal, White first uses Zugzwang to win the Q-side pawns, reaching a position such as **8a**. Play could continue **1...Kh4 2 Kf5 Kg3 3 Bhe2 Kh4 4 Kf4 h5 5 Kf5 Kg3 6 Kg5 Kf2 7 Kf4 Ke1 8 Ke3 h4 9 Kd3 Kf2 10 Kd2 Kg3 11 Ke3 Kh2 12 Kf2 Kh1 13 Bhg2 Kh2 14 Bb5 h3 15 Bxh3 Kh1 16 Kg3 Kg1 17 Be4 g5 18 Bfg2 g4 19 Bh1 gxh3 20 Ba8 h2 21 Kf3 Kxh1 22 Kf2 mate!"**

Two entries, from David Gurgenidze and a team of Boris Tummes and Arno Zude, were "outstanding, very close on my marking scheme", and Jonathan decided to award a joint first prize. In his report, he thanked Mark Dvoretsky, Noam Elkies, Gady Costeff, and Yochanan Afek, who each provided the idea for one of the positions.

# News and notices

**Meetings.** The next *EG* readers' meeting will be at 17 New Way Road, London NW9 6PL, on **Friday January 12** at 6.00 pm. Non-subscribers welcome, but please bring £5 towards the buffet (except on a first visit). Bring the latest *EG* with you.

**Readers wishing to subscribe to *EG* for 2007** may do so by paying me **£17** as hitherto (cheques payable to J D Beasley, please).

**Spotlight** continued. Timothy Whitworth tells me that Cassidy's **5** in special number 48 was in truth another game position in which the win was overlooked. He sends me a copy of page 221 of the March 1884 issue of *The Chess-Monthly*, where the Horwitz study appeared with an acknowledgement to "Dr. Cassidi" for showing how the game ending could have been won.

Alain Villeneuve points out that the Moravec version had the **Black king on f8** (if it is on f6, or even f7, Black can draw). As regards Troitsky's setting, Harold van der Heijden's "Endgame study database III" gives the position alongside as from *Trudovaia Pravda* 1927



*by* Troitsky
Where was the White king?

(play **1 f7 Nd7 2 g6 Ke6 3 f8Q Nxf8 4 g7 Kf7 5 gxf8Q+ Kxf8 6 Kc2 a4 7 Kb1 etc**), and a similar position with wKc1 as an unprovenanced version. If Troitsky genuinely put the king on c1, either in 1927 or later, he clearly deserves the credit for the optimal setting of the final stage, though I personally find the introduction intrusive; if he merely had it on d1, I think the credit belongs to Moravec.
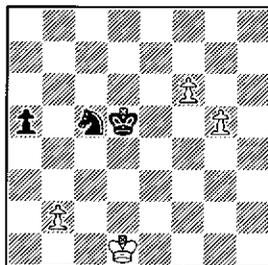
Alain also points out that my treatment of the sideline 1...Rb4 in the Makletsov study on page 342 was faulty: the drawing lines are **2 Kc3 Ra4 3 Rf4+** and 2 Ra5 Nc7 **3 Kc3**, but not my 3 Rc5? because of Ne6+ 4 Kc3 Rb3+! 5 Kxc4 Nxc5.

Noam Elkies points out that a more natural move for Black in the analysis of the post-play stage of Brian Stephenson's study would be **...Kf2**, even though the extra option ...Kxg3 does him no good. He also reminds me that the first two moves in the Bazlov study return to the opening position without wNg6, a very neat touch.

And one particular typo among all too many: the final date in the note to **1** in special number 48 should have been September **2005**.

**World Chess Composition Tournament, last call** (see March page 327). David Sedgwick tells me he is still desperately short of submissions. 23 Tierney Court, Canning Road, Croydon CR0 6QA, <david.sedgwick@amserve.com>.

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