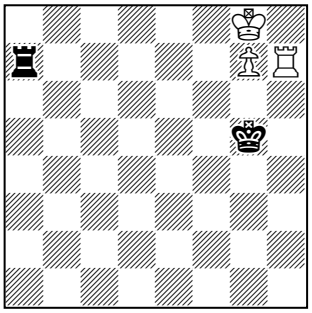
THE PROBLEM WITH STUDIES, by Jonathan Mestel

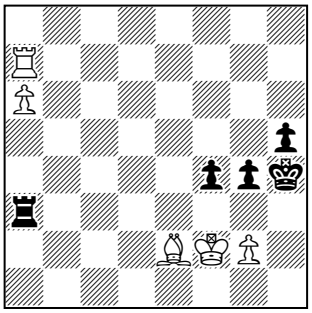
This article is a reconstruction of a talk I gave to the BCPS meeting in November. I had been asked to talk about some aspects of Studies and the title was chosen well in advance as a general catch-all, before I had any idea what I would say. In the event, a loose theme developed discussing how and why over-the-board players might become interested in studies and problems. As this in some way mirrors my own evolution, I begin with several game positions, starting with 3 games from my youth.

1. Jonathan Mestel
European U21 Champ.
Groningen 1973



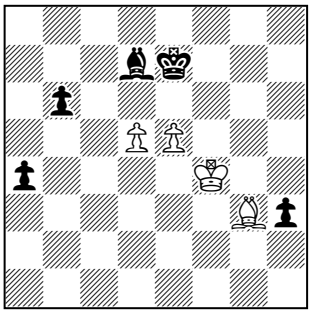
Johan Goormachtigh
Black to move

2. Jonathan Mestel
World U18 Champ. 1974



Bachar Kouatly
Black to move

3. Gonzales Vera
World Junior Champ.
Groningen 1977



Jonathan Mestel
White to move

Familiarity with studies helps over-the-board play (?)

Position **1** was reached at adjournment, but I recognised it as a theoretically winning position as I was interested in endgames quite young. My opponent said he would analyse the position to decide whether to offer a draw, and I watched him do it. As Kh8 is threatened, Black has to check: **1…Ra8+ 2.Kf7 Ra7+ 3.Ke6 Ra6+** reaching the critical position. The natural move is 4 Kd5 approaching the checking rook, but this is irrelevant. If ever Black's rook strays below the 6th rank he will be unable to play behind the g-pawn, so why not 4 Ke5? After **4.Kd5! Rg6**; both sides are tied up and Black is in zugzwang after **5.Ke5 Kg4 6.Rh1 Kf3 7.Rf1+**. Now Kg3/g4 lose to Rg1+ and otherwise 8.Rf7 and 9.Kf5 win. Once my opponent had seen this line, I resigned. I pointed out to him that 4.Ke5? Rg6 was only a draw, but he didn't seem particularly impressed. So here is the first point. Reciprocal zugzwangs are always interesting and are frequently the backbone of studies. But to appeal to practical players, the correct resolution should involve the less "natural" option.

A few years later I was Black against Kouatly in Position **2**. With careful play White should win, but my familiarity with study ideas enabled me to set a trap with **1…Ra1 2.Ra8? g3+ 3.Kf3 Ra3+**. At this point my opponent realised he had blundered as 4.Ke4 Re3+ or 4.Kxf4 Rxa6 5.Rh8 Rh6 with a perpetual attack on the rook. I remember well the grin on his face as he just held out a hand, implicitly offering a draw. Players do appreciate unexpected tactics, even when they are on the receiving end, although in many cases it takes longer to appreciate the humour.

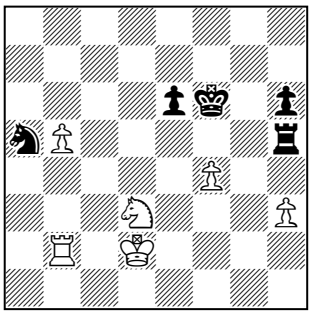
The study-like blunder!

So this is one reason why players should have some familiarity with studies. An awareness of what can happen on the board equips you better to spot tactical ideas. And yet, therein lies frustration. Most ideas we have while playing simply don't work. Composers are well aware of this, but they can modify and mould the position until eventually, if they are skilled, lucky and persevere, their idea bears fruit. Players usually have only one position in front of them. Either their conception works or it doesn't. And yet how much they want it to be realised! Players want to win, yes, but they want to win brilliantly and have their combination published all round the world… This yearning is in my view responsible for an interesting phenomenon, which I call "The study-like blunder." Annotators of chess games are fond of calling certain moves "study-like" meaning a clever idea which works. How much more frequent is the clever idea which does not work, but which is nevertheless played because the player is blinded by the beauty of his or her idea, and loses objectivity out of a desire for glory. Take my Position **3** Mestel-Vera, from a World Junior championship. It was the last round, we had both done fairly poorly, and had striven to make an opposite bishop ending interesting. I had gone wrong and now things were perilous. I had had the idea of stopping the queenside pawns with 1.Bh4+ Kf7 2.Kg3 a3 3.Bf6 a2 4.Bh8!! Kg8 5.e6. What a tempting, study-like way to try to draw. But it's a game, not a study, and such things don't usually work. Indeed, amongst other concerns the blockading sacrifice …Be6 completely refutes the idea. So with rare sanity I retreated **1.Kf3.** The idea was to stop the a-pawn with 2.Be1, and maybe hold that way. Now it was my opponent's turn to have a study-like idea. Spotting that f2 was a critical square in my planned defence, he uncorked **1..Bg4+** which elegantly forces a pawn through. 2.Kf2 a3 is hopeless (3.e6 Bxe6), while after **2.Kxg4 a3** the bishop is overloaded between the rook pawns. And yet the whole idea is terribly flawed. After **3.Bh4+** a white pawn promotes after 3..Kf8 4.d6 or 3…Kf7 4.e6+, or 3…Ke8 4.e6, while 3…Kd7 4.e6+ allows both black pawns to be stopped with Kg3 and Bf6. I won, undeservedly, after a few moves. How else can you

explain the evaporation of my opponent's sense of danger other than by the desire for his creative idea to actually happen on the board? Study-like blunders are a frequent phenomenon, and even strong players are not immune.

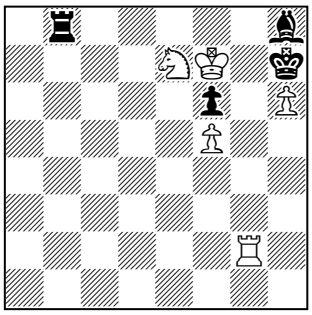
A recent example is Position **4**, from Anand-Nakamura. In this near-winning position, the ex-world champion tried **1.b6 Sc4+ 2.Kc2 Sxb2 3.Se5**, a study-like idea to promote the b-pawn. Nakamura replied 3…Sc4 4.b7 Sxe5 and lost the resulting Q v R position. Yet **3..Sd3!** upsets everything – 4.b7 Sb4+ and Sa6 or 4.Kxd3 Rxh3+ 5.Kc4 Rh1 draws. While in no way approaching the lack of objectivity of Position 3, I think the desire to win elegantly contributed to the faulty combination.

4. Hikaru Nakamura
St. Louis Showdown
Rapid 2016



Viswanathan Anand
White to move

5. Piotr Murdzia
Czech Rep. Champ. 2006

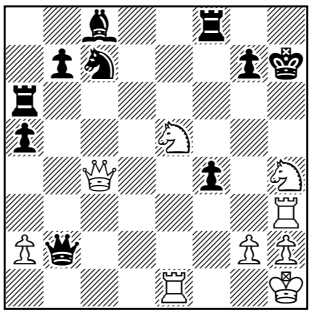


Pavel Simaček
White to move

Problemists at play

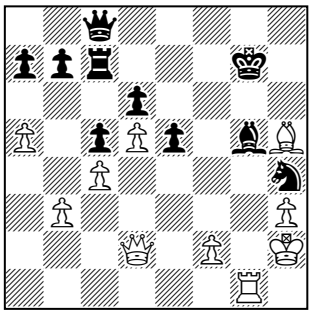
The next two positions feature people well known in the problemist community playing over-the-board. In the first, White is clearly winning and just needs a little patience and what we call technique. Instead he played **1.Rg7+?** and Piotr Murdzia responded **1…Bxg7 2.hxg7 Rg8!** with stalemate. Now I do not consider this a study-like blunder. There is nothing particularly elegant about winning with hxg7 and g8=Q. It was probably made because White concentrated his efforts on analysing the alternative defence 1..Kxh6 after which it is not too obvious how to win. 2.Rg8 Rxg8 3.Kxg8 Bg7 puts White in zugzwang, or 2.Sg8+ Kh5 3 Rh7+ Kg5 4 Rxh8 Ra8.

6. Moore
USA 1876



Sam Loyd
White to move

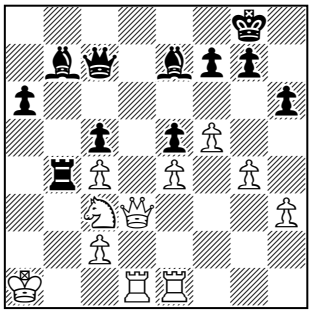
7. Burn
1910



MacDonald
Black to move

Position **6** occurred in a casual game by Sam Loyd. Our hero mated prosaically with 1.Sf5+ Rh6 2.Rxh6+ and 3.Qxc7+. Years later, he pointed out that he had missed a problem-like mate in 3, with **1.Qe6!** a simple Nowotny. Yet the entire position is so perfect with no dual mates and extra variations with Sf3 and Sxg2, that I do wonder whether the game had been touched up a little, even though there is a plausible game score. Now could one use such a position to attract players to problems? I would say not. White is clearly winning and 1.Sf5+ is the move a practical player would play – the position is "not interesting" to a player despite the elegance of 1.Qe6.

8. Bennedik



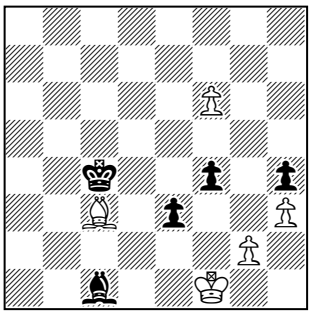
Karachurin
Black to move

Study-like moves

Players prefer the similar Position **7**, from MacDonald-Burn. Indeed, I have seen **1…Qg4!** described as "the most amazing move ever played", an assessment I cannot accept. While elegant, it is again just a Nowotny, with a half-pin thrown in. It is only because it changes Black's position from being irretrievably lost to playable (indeed Black won the game) that the move has such an effect on the player's psyche. If your wish is to attract players to problems, and they are so easily impressed, how hard can it be!

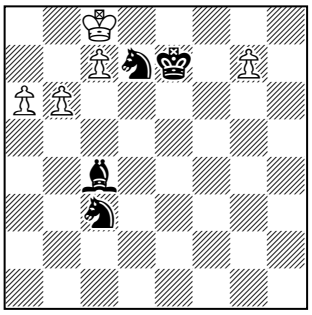
Compare Position **8**, the correspondence game Karachurin-Bennedik which I saw on Tim Krabbé's website. It is harder to understand the tactics, but the move **1…Bd5!!!** is, to a player, truly amazing. This is not just because it is a quiet move en prise fourfold, but because it is so "anti-positional", a term hard to define, but "surprising" will do. 2.Qxd5 Qa5+ 3.Sa2 Ra4 or 2.exd5 e4 followed by …Bf6 are easy to understand, but it is fortuitous that 2 cxd5 c4 strengthens the attack sufficiently for the idea to work (3.Qd2 Bg5 or 3.Qe2 Qa5+ 4.Sa2 c3). Such a surprising move could occur in a study, but it is harder for problems, where a black sacrifice delaying mate by a move may be a real defence. Having to consider every legal move anyway diminishes the shock effect of white moves like this. Players have to filter out some moves as being unworthy of consideration, and so they are more easily amazed.

9. Vassily Smyslov
Pravda 1976



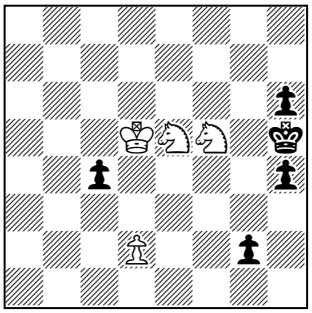
Win

10. Jan Rusinek
1 Pr *New Statesman* 1971



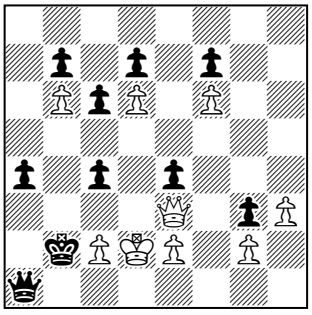
Draw

11. Carl Behting
2-5 Pr *Bohemia* 1906



Draw

12. Mikhail Zinar
Problemist Ukraini 2013



Win

Some good studies for players and problemists

So at last it must be time for some studies. What kind of study would lure players away from the challenging hustle of the sporting contest into the more perfect but artificial magical world of compositions? Such a study should have a natural setting and yet contain completely unexpected wonders. I consider Position **9**, composed by World champion Smyslov, to be a fine example of such bait.

It is hard to conceive of a more game-like position. With 1..Kd3 threatened, the start **1.f7 Ba3 2.Bg7** is natural and looks winning. A brief glance at the rook-pawn shows to our surprise that our bishop is the right colour. So what could go wrong? Suppose we continue 2..Kd3 3.f8=Q Bxf8 4.Bxf8 e2+ 5.Ke1? f3 6.gxf3 7.Ke3 draws, but 5 Kf2 wins. Eventually we see an idea **2..f3! 3 gxf3 Kd3** If now 4.f8=Q e2+ 5 Kf2 Bc5+! when 6.Qxc5 e1=Q+ leads to stalemate, or 5.Ke1 Bxf8 6.Bxf8 Ke3 captures both pawns. White can circumvent this by underpromotion, necessarily to a bishop to prevent 5..Bc5+. So **4.f8=B!! e2+ 5.Kf2 e1=Q+ 6.Kxe1 Ke3** eliminates another pawn. But **7.f4 Kxf4 8 Kf2!** Now the only attempt to preserve the bishop is **8…Bc1**, where it is skewered with **9.Bh6+**. Note that 9.Bf6 does not win. This is important for the study main line, but not of interest to the player.

Underpromotion! Surely that will appeal to players, who have learned the hard way to respect the power of queens. So consider Rusinek's masterpiece **10**. This is not a position which at first sight appeals to players. Yet if they can be persuaded to start solving it they rapidly become enmeshed. 1.b7 Se4 or 1.Kb7 Bd5+ or 1.g8 Bxg8 2 a7 Sxb6+ are clearly hopeless, so by elimination, **1.a7** is the key. Now **1…Ba6+ 2.b7 Se4** is natural, as is **3.g8=S+ Ke8 4 Sf6+ Sexf6** when it clear that 5.a8=Q allows mate in 2, but **5.a8=B!** still lives. Or does it? **5…Be2** 6.b8=Q Ba6+ and 7..Se4 is mate again. 6.b8=S loses on material after 6…Se7+ 7.Kb7 Bf3+ 8.Ka7 Sc8+ or 8.Sc6 Bxc6+ 9.Ka7 Bd7. This just leaves **6.b8=R!! Ba6+ 7.Rb7** and Black runs out of ideas. Three underpromotions with such little force!

Some years later, Jan published a version of this study, which you can construct given that the solution begins 1.h8=Q+ Qxh8 2.g7+ Qxg7 3.hxg7+ Ke7 reaching the same starting position 10. The sole purpose of this introductory play was to lead to an AUW. The expert consensus (including Jan himself) regards this version as inferior, an artificial distraction from the main play. Curiously though, some players to whom I have shown both versions have preferred this longer version. They regarded the original position as already so far from reality that a few more pawns are neither here nor there, while AUW in an ordinary game would be so astounding that they appreciated the task setting.

How many moves can you see ahead?

One question chess players are pestered with is "How many moves can you see ahead?" I sometimes respond to that by claiming that in some positions no-one can see 1 move ahead, but that in others "anyone" could see 20 moves ahead. An example of the first kind is position **11**. I have yet to come across anyone who when presented with this study even considers the key move. There are many problems when you only determine the key after finding all the variations, but studies usually make "sense" and you tend at least to see all the possibilities even if you don't know which is correct. For the second type of position I construct a position in which multiple promotions take place and the new queens get eliminated. Position **12** is a more interesting idea which arguably one can analyse many moves ahead in one's head

The Black position is so strong that one soon considers **1.Qc3+, 2.Qxa1+** and **3.Kc1!** to slow down the a-pawn. At this point the attuned solver would notice the possibility of 1.Qd4+ with the same idea. The only difference between the two is that Black has the possibility of 1..c3+ eliminating his own pawn. As this is a black option there is no point allowing it, and so if one believes the solution is unique it follows that 1.Qc3+ is correct and 1.Qd4+ fails to 1..c3! Solvers use this kind of logic frequently, but we will have to justify it retrospectively to be confident we're on the right track.

After 3.Kc1, the white h-pawn will promote. Black can defend by stalemating himself. At this point, we recognise a well-known theme. White will promote to a knight on h8, play Sg6, then underpromote to a knight on f8 and play Se6…then on d8 and play Sc6, then on b8 and…what? But my point is we are already looking 20 moves ahead. **3.Kc1 a3 4.h4 a2 5.h5 c3 6.h6 c5 7.h7 c4 8.h8=S e3 9.Sg6 fxg6 11.f8=S g4 12.Se6 dxe6 14.d8=S e4 15.Sc6 bxc6 16.b7 c5** and now we must try **17.Kd1 Kb2 18.b8=Q+** and what is going on? For reference, we remember our expected try 1.Qd4+ c3 2.Qxc3+. We reach the same position except with one fewer c-pawn and Black still has a pawn move after Kd1. This is useful – if White wishes to promote with check his king will have to be on e1 and …Kxc2 will be legal. So we do have a logical basis for our solution and continue analysing: **18..K~ 19.Qa7 Kb~ 20.Qb6+, 21.Qxc5** and it is clear White is winning all the pawns.

So am I right? Can you too sometimes see 20 moves ahead and sometimes not even see one? As a clue for 11, after you've tried at length to prevent Black from promoting, try just allowing him to promote…(Solution at end of article.)

Thematic tries and zugzwangs

Let me now return to the reciprocal zugzwang issue. With the advent of tablebases more of these have been found and studies are composed using them as endpoints. These can be quite variable in their appeal to player and non-player alike. If one is told a position is a reciprocal zugzwang, one's reaction may be any of "No! That cannot be. Astounding!" Or, "Really? That doesn't seem very likely." Or, "I suppose it could be. So what?" One then tries for a little while to understand why, and it is at this point things become subjective. If it is too hard to understand why it is zugzwang, we just shrug our shoulders and walk away. But if we can learn what is going on, even just roughly, we may experience wonder. In both cases, we learn how deep chess is, but only in the latter case do we really care! Where this threshold is, varies with the individual.

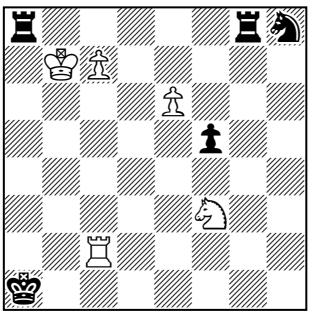
In Position **13**, we do not wish to give Black time to organise his defence with …Rac8 and Rge8, so we should begin either with 1.c8=Q and a massive swap, or first 1.Rc1+ and 2.c8=Q. In either case, after Kxc8 Black will play ...Sg6, we will try Kd8 and then we reach the critical position. White: Kd8, Sf3 Pe6; Black: K-somewhere, Sg6, Pf5. The white attempt Ke8-f7 must be met (after Ke8 blocking the pawn) by …Sf4; e7 Sd5, so Black to play may not play ..f4. Meanwhile White has the idea of Sh4. This must be met by ...f4. If then White returns with Sf3, Black must be able to play …Kb3 Ke8…Kc4 Kf7 Kd5 in order to hold. If Sh4 ...f4 Sxg6..f3, then where the black king is will be critical. If it is on b2, Se5 …f2 Sd3+ wins, while if it is on a3 then Se5-c4+-e3 will win, but Black draws if it is on a2. We can therefore understand that the position with White: Kd8, Pe6, Sf3 Black: Ka2, Sg6, Pf5 may be a reciprocal zugzwang. The solution is **1.Rc1+ Ka2 2.c8=Q Raxc8 3.Rxc8 Rxc8 4.Kxc8 Sg6 5.Kd8** zugzwang. Instead 1.c8=Q? allows …Ka2! at the end. One loose end needs tying – if 1…Kb2 White can win with 5.Sh4 exploiting the fork on d3, as 5...Se7+ 6.Kd8 Sd5 7.Sxf5 wins. So this study is understandable. The cumbersome introduction is necessary to introduce the thematic try, but the real interest is in the zugzwang itself.

Position **14** is similar in essence. White must aim to eliminate the bishop and pawns to draw. After **1.Rh2 Sg4 2.Rxh3 Sf2+** the reciprocal alarm bell goes off. Do we continue 3.Kxe1 Sxh3 4 Ke2 or **3.Ke2 Sxh3 4.Kxe1**? It turns out the latter is correct White: Ke1, Sd5 Black: Kd8, Sc8, Sh3, Pf7 is a reciprocal zugzwang. I have tried to understand why, but I am not a good enough analyst. It all hinges on random-looking tactical lines. For example, with White to move 1.Se3 Sd6! 2.Kf1 Ke7! 3.Sg4 Sf5 4.Se5 Se3+! 5.Ke2 f6!, with all Black's moves being unique according to the tablebase. So the study is correct, surprising, but to me, unsatisfying – the underlying chess is too difficult. Not, I think, a lure for players.

Another first prize and a fantastic study in 0 moves to end on.

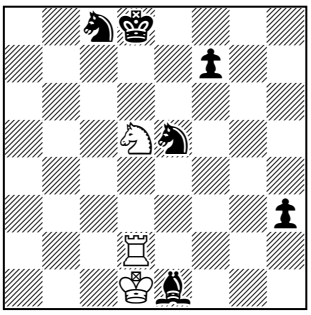
In contrast, position **15** is a glorious, reciprocal zugzwang. A perfectly healthy reaction to this position is "Are you insane? Black to move draws, White to move loses? They've obviously misprinted the diagram." But it's true. And to my mind, any introduction to this position, just like Rusinek's AUW modification, would detract rather than add to it, even if it satisfies the task of offering the position with either side to move. I consider this a study in 0 moves.

13. Pavel Arestov
EG 2015



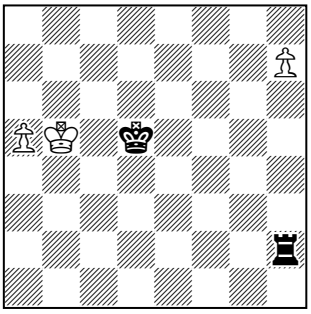
Win

14. Vladislav Tarasiuk
EG 2014



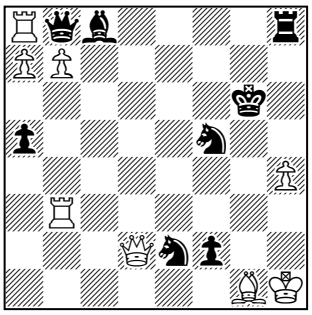
Draw

15. Harold van der Heijden
3 C Chess Clinic Study Composing ty 2001
(position from a study)



Reciprocal zugzwang

16. Gregory Slepyan
1 Pr *EG* 2006



Draw

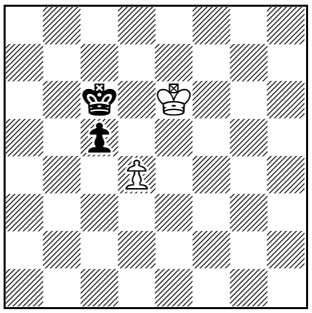
To understand the position, you have to realise that 1.Kb6 loses to 1..Kc4! 2.a6 Rh6+, and 1.a6 Rb2+ 2 Ka5 Kc5! Or 2.Ka4 Kc4. Now it makes a glimmer of sense: 1…Rh1/Rh3 2.a6 Rb1/Rb3+ 3.Ka5/a4. Still hard to believe, even though we now see that Qh8 guards a1.

My final study, I think might attract players, provided they can conquer their initial abhorrence at the snarl-up in the top left of the diagram. When you see what is coming, you will forgive much. Black has a terrifying attack with 3 threats: …fxg1=Q#, …Bxb7+ and …Rxh4+. White must begin with a check and 1.Rb6+ Kh7 is fatal. So **1.Qg5+ Kf7**. Now 2…Bxb7+ is the biggest threat, so capturing the queen looks best: 2.axb8=Q Rxh4+ 3.Qh2 is a good try, but Black has 2…Sfg3+ 3.Qxg3 (If 3.Kg2 f1=Q, or 3.Rxg3 Bxb7+4.Rg2 fxg1=Q#) 3…Sxg3+ 4.Rxg3 Bxb7+ 5.Rg2 f1=Q and Black breaks through on g2. It's hard to see an improvement, but wait – 6.Rf8+ is almost stalemate; it's only the wQh2 which can move. This suggests the fine move **2.axb8=B! Rxh4+ 3.Bbh2 Sfg3+ 3.Qxg3 Sxg3+ 4.Rxg3 Bxb7+ 5.Rg2** but Black also has tricks: **5...f1=B!!** avoiding 5…f1=Q 6.Rf8+ while threatening mate and the Ra8. The only counter is to attack the Rh4: **6.Bf2 Bfxg2+ 7.Kg1 Ra4!** Guarding the Pa5, threatening the rook and also to win one of the bishops with Ra1. Many endgame books don't mention the ending of R, two bishops of the same colour and P against R + opposite B, but it is a win. But the final blow is **8.Rxa5!! Rxa5 9.Bhg3**. A little thought reveals that this is a positional draw. For the rest of the game White shuffles bishops along the e1-h4 diagonal, always keeping the bR out of the triangle with the wK. A beautifully original conclusion to an action-packed study, with two underpromotions to bishops of the same colour. This won't happen in a real game in a hurry! Surely players will have to start attending study meetings if they want to see this sort of thing.

Solution to Position 11: One can spend a lot of time trying to stop the black pawns, e.g.1.Sf3 h3 2.Ke4 h2 3.Sg3+ Kg4 4. Sxh2+ Kxg3 5. Sf3 h5; or 1.Sg7+ Kg5 2.Sf3+ Kg4 3.Ke4 h3 4.Sf5 g1Q 5.Sxg1 h2 6.Sxh6+ Kh5. A popular try is 1.Sg3+ hxg3 2.Sf3 Kg4 3.Sg1 h5. A glimmer of an idea is the fortress after 1.Sxh4 g1=Q 2.Shf3 draw, but 1…Kxh4 2.Sf3+ Kg3 3.Sg1 h5 refutes. It requires a leap of imagination to realise there is no hurry as the position is almost a reciprocal zugzwang! 1…Kg5 2.Sf3+ or 1…h3 2.Sg3+ and 3.Se2 but 1…g1=Q 2.Sxh4 Qg8+! The solution is **1.Kc6!!** avoiding a Q-check. Both **1…g1=Q 2.Sxh4 Q~ 3.Shf3** and **1…h3 2.Sg3+** and **3.Se2** draw.

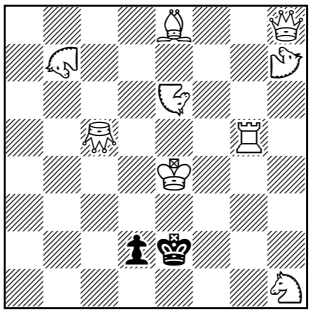
SOLUTIONS TO JANUARY GREETINGS PROBLEMS

1 Adrian Storisteanu
(Canada)



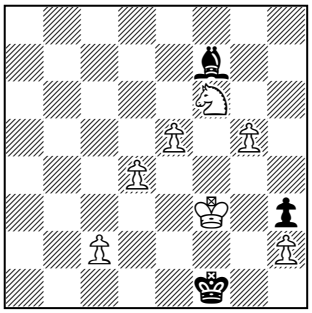
H#2 Anti-supercirce
(a) diagram 2.1.1
(b) 90° right duplex

2 Cedric Lytton



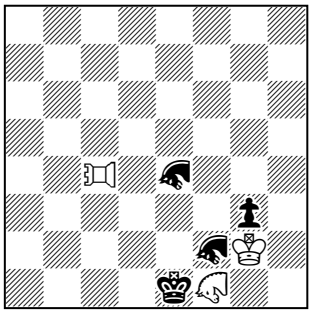
=2 Madrasi Rex Inclusive
c5=G, e6=N, b7=Camel,
h7=Zebra

3 Eugene Dugas
(USA)



H=4 Circe
(b) K↔K

4 John Rice



H#2 3 solutions
Pao + Maos

1 *Anti-supercirce:* a capturing piece (K included) must be reborn on any vacant square without causing self-check. Pawns can be reborn on their eighth or first rank; promotion is obligatory; Pawns reborn on the first rank are dead. (a) 1.Kc7 dxc5[wPc5→b7] 2.Kd8 b8Q#; 1.Kb7 Kd6 2.Kc8 dxc5[wPc5→a8Q]#. (b) Black: 1.Kg6 dxe6[wPe6→g8Q]+ 2.Kh5 Qh7#; White: 1.Kg4 exd5[bPd5→f1Q] 2.Kh5 Qh3#. Ideal echoes (*all* four mates).

2 *Madrasi Rex Inclusive:* a piece (K included) is paralysed if it is threatened by a piece of the same kind. *Grasshopper (G):* Moves along Q-lines over another unit of either color to the square immediately beyond that unit. A capture may be made on arrival, but the hurdle is not affected. *Nightrider (N):* Operates along straight lines with squares lying a knight's move away from each other. *Camel (C):* A 3:1 leaper; moves 3 squares orthogonally followed by a single move at right angles. *Zebra (Z):* 2:3 leaper; moves 2 squares orthogonally followed by 3 squares at right angles. 1.Kd3 (>2.Qb2) 1…d1Q/d1R/d1B/d1S/d1G/d1N/d1C/d1Z 2.Qa1/Rg1/Ba4/Sf2/Gh5/Ng7/Cc4/Zf4=. 8-fold Allumwandlung!