

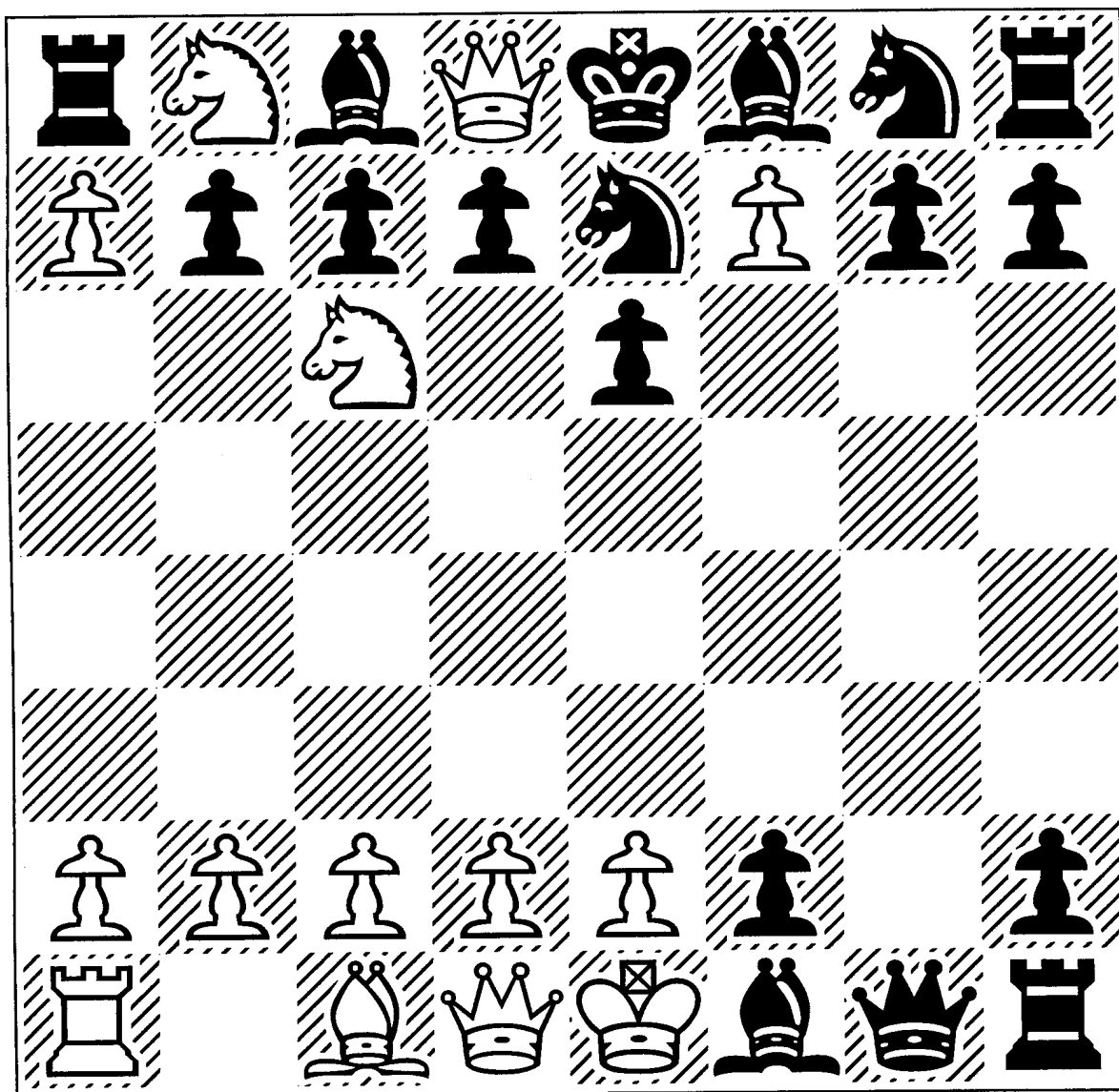
# Variant Chess

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## Benedict Chess

King and two ferses

Move it or lose it

## BENEDICT CHESS

by Andrew Perkis

Dan Troyka's "Benedict Chess" is one of the games offered on the SchemingMind web site

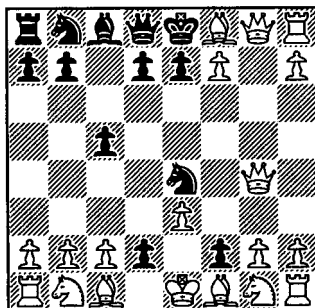
<www.schemingmind.com>

which provides chess variant play by e-mail. There is no capturing, but after a man has moved all the opposing men attacked by it change colour, and become the property of the side which has just attacked them. The object of play is to attack the opposing king. If a player has no legal move, the game is drawn. Castling is permitted, but for the purpose of attacking the opposition only the king is regarded as having moved.

We saw the bare rules in VC 59; here Andrew describes some practical experience. He remarks in passing that the game has been played nearly four thousand times during its relatively brief existence, which is more than many variants have achieved in much longer periods. - JDB

Any similarity to OrthoChess is purely coincidental! Benedict plays very differently. Manoeuvres involving check are redundant - in effect, first check ends the game. Any attempt to present tactical motifs would require a careful redefinition of OrthoChess terms. To take one example: it is natural to describe a significant double flip (particularly when performed by a Knight) as a fork. However, the term "fork" may also be used, perhaps more accurately, to describe a double or multiple threat, rather than a flip.

Comparison with Othello is not very helpful either. In Othello, each move adds a piece to the board. Therefore repetition of position cannot occur - but in Benedict, repeating positions are part and parcel of the game, even though many players choose to steer clear of them. For example, after 1 e3 c5, White, if playing for a win, should avoid 2 Qg4 (flips d7 and g7). The game could then continue 2...Nf6 (d7 g4) 3 g8Q (f7 f8 g4 h7 h8) Ne4 (d2 f2) :



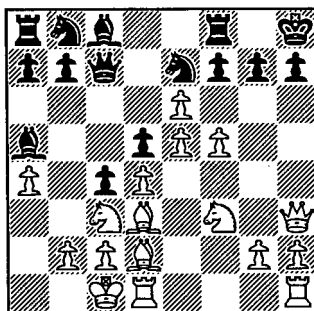
4...d1Q+ is threatened. White cannot move the K because of the reply Nc3+.

4 Nf3 (d2) allows 4...Nf6, forking (if I may use the term here) the two White Queens, and giving Black a won game.

Therefore, after 4 Qd1 (d2) Nf6 (g8) 5 Qg4 (d2 g8), neither player has a better option than to repeat the position, and they should therefore agree a draw.

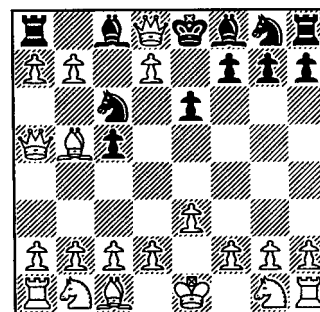
Such repeating sequences have frequently been avoided by SchemingMind players. Only 35 games have been drawn out of 3813 played (to Feb '09). In a less sporting context, however, many more draws would have been likely.

Sometimes players become involved in a perpetual battle for a single piece. Here is an example...



The game might continue 1...Bb4 2 Be1 Ba4 3 Bd2 etc. However, in most examples of this kind of dynamic, one or both of the active pieces will cause enough collateral damage to alter the position considerably, often to the extent of giving one of the players a won game. The Queen, of course, is usually best at wreaking such damage. Thus it is normally (though not always) best to avoid having one's Queen flipped by an opposing Q. Rarely, however, a

Bishop may be able to do more significant damage than a Q in these circumstances. After the moves 1 e3 e6 2 Qe2 c5 3 Qb5 (b7 c5 d7) Qe7 (c5 d7) 4 Qa4 (a7 d7) Qd8 (d7) 5 Bb5 (d7) [if 5 Qa5 (d8), then 5...Nc6 "forking" both Queens] Nc6 (a7), White might be tempted to play 5 Qa5 (a7 d8) :



At first the position looks grim for Black. However, after 5...Be7 (d8), Black has a won game. White plays Qb6 or Qc7 to re-flip, whereupon Black plays Bh5 (d8 f2). White has to deal with the threat of ...f1Q+, after which Black can gain both Queens (by ...Bg3 if W had played 6 Qc7, or ...Qc7 if W had played 6 Qb6).

Dan Troyka invented Benedict in 2002, and expected the solving of the game (almost certainly as a White win) to prove an interesting but not insurmountable challenge. The game has been available on SchemingMind since September 2005, and although out of 3813 played, 2205 have been White wins, no forced win has yet been published.

In my initial study of games, and while trying to figure out the relative values of men, it seemed to me the power of Knights had been underappreciated. In Benedict, however, any discussion of the relative value of men is tricky, for two principal reasons. To start with, a well placed piece, may, after flipping, be either better or equally well placed for the opponent. This is not only the case with pieces. Promotion is common in Benedict, but there is no record of a pawn promoting that didn't start out as belonging to the defending player.

The other factor is that critical situations nearly always develop - and

dictate play - before anything like a conventional development (from an OrthoChess perspective) of pieces. For this reason, Rooks rarely have much of a role - and when they do, it is usually performed by Rooks that have been flipped. Therefore, it could be said of the Rooks that a player "owns" at start of play are more likely to be a liability than an asset - and a similar ambivalence applies to every man on the board.

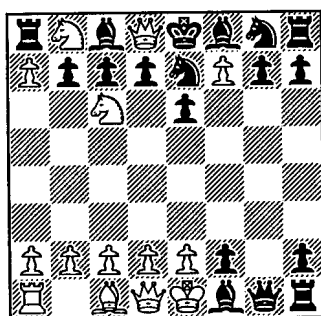
Having commenced my investigations, I was foolhardy enough to embark on a quest to find a forced win for White. I was convinced that White's QN, the piece with the most immediate aggressive potential on the board, would play a central role in any win that human calculation might uncover.

The Q is certainly powerful, the most mobile piece and the only one that can flip up to 8 pieces per move. As we have seen too, the Q (as with the B and R - though Rooks rarely get the chance) can perpetually attack or defend a key piece, which the N cannot. Nevertheless, the Knight is second only to the Queen in that it can flip up to 7 pieces per turn (as opposed to 4 for the B or R). It retains its added mobility as a leaper throughout the length of any game - as the board remains crowded. More pertinently, it is the piece with the best chance of flipping pieces on the opponent's home rank really early on. When it moves to a player's 5th rank, it flips the two pawns which could flip it (see first diagram). Finally, a powerfully placed Knight is unlikely to be so well placed for the opponent. After 1 Nc3, for example, the Knight needs only two more moves to check the Black King, but, if it is flipped, Black needs a significantly more difficult 3 moves to return the favour.

1 Nc3 is the most direct attacking move, and I began my playing career by trying this out against a few SchemingMind players. (Most SchemingMind players have a much more pragmatic play-to-win approach than the one I adopted in this quest, but losing a few games was the price I had to pay for finding out which ideas were worth pursuing.)

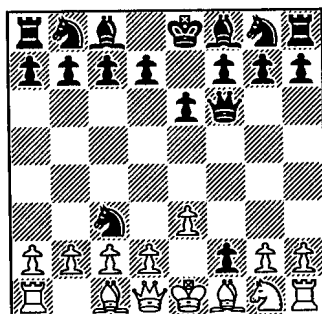
When I tried 1 Nc3 every opponent answered with 1...e6. 1 e3 and 1...e6 are the most common opening moves. These moves allow the Q into play while shielding the d-pawn from being flipped by an opposing Q on g5 (g4).

At first I attempted 1 Nc3 e6 2 Nd5 (c7), direct, but fatal (although I did win a couple of games with this opening). Nevertheless 2 Nd5 (c7) loses to 2...Qg5 (d2 d5 g2). A game I lost continued 3 Nf3 (d2 g5) g1Q (f1 f2 g5 h1 h2) 4 Ne5 (d7 f7) Qd8 (c7 d7). Now 5 Nf3 (g1) loses to 5...Nb4 (a2 c2). Therefore I tried 5 Nc6 (a7 b8 d8) but quickly lost. Black replied 5...Qg5 (d2 d8). Just as good would have been 5...Nde7 (c6) :



White is powerless to prevent Black's Q delivering the fatal check after the f1 Bishop has moved. The enclosed WQ at d8 can do nothing.

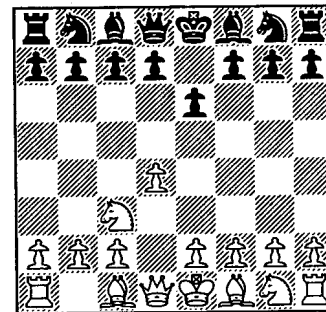
My next attempt was 1 Nc3 e6 2 e3. This won me a game, but then I ran into 2...Qf6 (c3 f2) :



The point is that W cannot now play 3 Qf3 (f2 f6) as Black can reply 3...Ne4 (d2 f6) and the threat of d1Q+ enables Black to gain two Queens.

Finally I discovered an effective reply to 1...e6.

1 Nc3 e6 2 d4 (like 2 Nd5 this is already a novelty) :



Here the Nc3 has switched to a mainly defensive function. It shields the K from Bb4 while enabling the WQ into the game. Bg5 (d8) is threatened which will restrict the Black Queen. This combination of getting some air for one's own Q while restricting one's opponent's usually equals a won game. If 2...Bb4 (c3) then 3 Qd3 (c3) with Bg5 (d8) to follow looks strong.

So 1 Nc3 looks good - but needs further testing. Alternatives to 1...e6 do not look promising for Black, but these need testing too.

I also sought a playable response to 1 e3. White has an overwhelming record with this move, and perhaps all Black's wins against it can be traced to errors (easily made in Benedict!) in White's play. White's extremely single minded strategy in this opening - get the White Q into play and cut the Black Q out of the game - made the search for a refutation less daunting than I first feared. In so many lines White's strategy falls into place so easily, with tactical resources arriving just when they are required. For example, after 1 e3 e6 2 Qe2 Qe7 3 Qb5 (b7 d7) Kd8 (d7) 4 Qc5 (c7 e7) Ke8 (e7) it might seem for a moment that White can only draw, being forced to keep flipping the e7 Queen without doing any significant damage. However 5 Nc3! gets another piece into play, after which the win is easy.

Again and again, White's strategy seems to be backed up by such a seemingly magical tactical assistance. This was too good to be true! With Ingemar Assarsjö a Swedish Variant Chess player I went through several novel responses to 1 e3, all aimed at inching the Black Q into the game. Finally we discovered that after 1 e3 b5! Black gets a good game.

I will continue my investigations and report back!

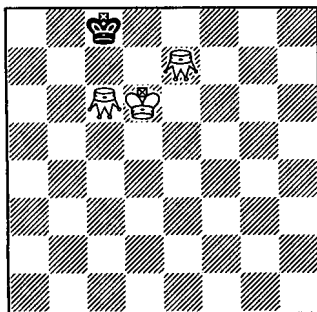
# KING AND TWO FERSES AGAINST KING

analysis initiated by Noam Elkies

Last August, Noam Elkies sent me a remarkable conjecture: if we count stalemate as a win, cannot White force a win with just *two* ferses against a bare king? Furthermore, can he not do this even if the ferses run on squares of the same colour?

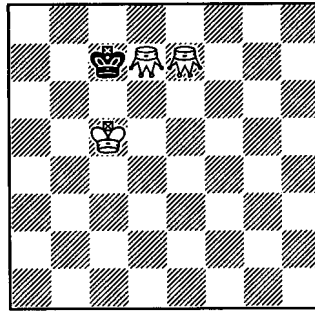
To put matters bluntly, I did not believe it. So I sent him a position where I could not make progress, and back came a winning method; then I sent him another, and back came proof of another win; and a few weeks later, he analysed the ending by computer, and even without taking into account the possibility that White might be able to sacrifice one fers and stalemate with the other (ignoring this possibility allowed an existing program to be adapted with minimum alteration) he confirmed that it was indeed a general win whichever sets of squares the ferses ran on.

This established the general result, and placed upper bounds for the lengths of the longest wins in the two cases (ferses on squares of the same and of opposite colours). There were however positions where White could speed things up by sacrificing one fers in order to stalemate with the other. Consider this position, for which Noam insists I take the credit as between ourselves (others may well have discovered it earlier) :



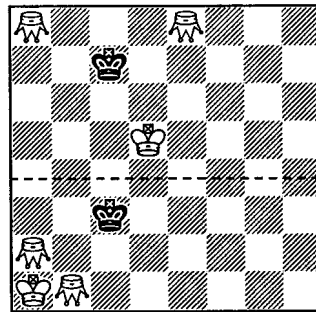
Here, White can stalemate in five by playing **1 Fd8**, since 1...Kxd8 allows 2 Fd7 stalemating at once (if instead 1...Kb8 then 2 Fc7+ Ka8/Kc8 3 Fb6 etc, or 2...Ka7 3 Kc5). Noam then

drew attention to this position :



Here, White can stalemate in seven only by sacrificing a fers, though he may choose which one to give away: **1 Fc8 Kb8** (trying to delay matters) **2 Kb6 Kxc8** (no choice now) **3 Kc6** etc, or **1 Fc6 Kb8** (1...Kc8 2 Kb6 and stalemate next move) **2 Fd8 Kc8** **3 Kd6** transposing into the previous example. To stalemate without a sacrifice takes thirteen moves.

We then looked for same-colour positions in which sacrifices by White might be beneficial, and Noam sent me a series of examples culminating in the upper position below :

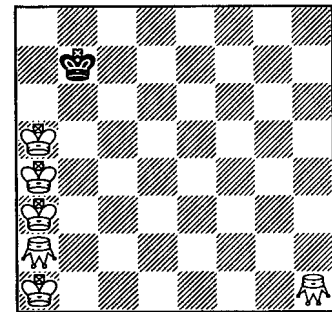


Black to play is soon seen to lose: 1...Kb8 2 Kc6 Kxa8 3 Kb6 Kb8 4 Fd7 etc, or 1...Kd8 2 Ff7 Ke7 3 Fe6 and White is secure, or here 2...Kc7 3 Fe6 and 3...Kb8 again fails to 4 Kc6 etc. But White to play cannot win: 1 Kc5 Kd8 and Fe8 will be hunted down, or 1 Ke6 Kb8 and the White king is too far away to trap the Black, or 1 Ff7 Kb8 and it is the White fers which is too far away. Noam's computer analysis had already identified one reciprocal zugzwang in the shape of the lower position, but this new one was much more interesting.

We therefore felt that the time had come for a definitive computer analysis including sacrifices. This time, Noam left the programming to

me, partly so that his results would receive independent confirmation. My analysis found the same longest-win positions as Noam's, verified the two reciprocal zugzwangs above, and identified thirteen more, some even more remarkable than Kd5, Fa8/e8 v Kc7. The rest of the article will therefore be couched in terms of this definitive analysis. However, the situation is very much the same as in the case of the analysis of the as-Suli position which I mentioned in last time's review of *Scacchia Ludus*: my computer analysis may have dotted the final "i", but it was wholly routine and derivative, and it is the person who had opened up the field who deserves the credit.

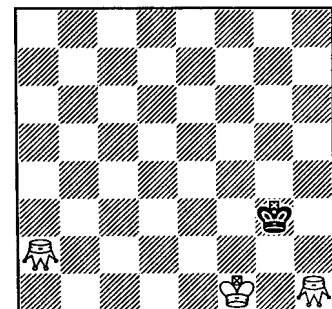
The longest wins occur in the same-colour case, and there are four maximal positions differing only in the location of the White king :



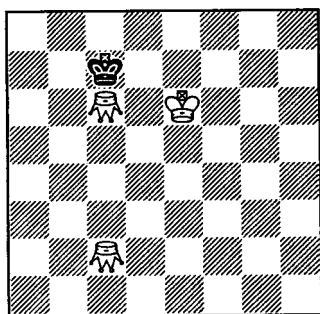
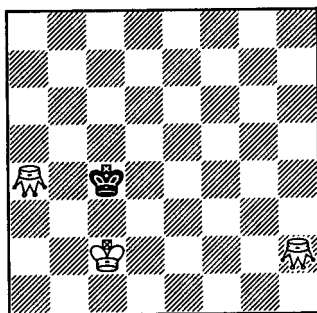
Black to play, White stalemates in 44 (wKa5 assumed in what follows)

White cannot usefully sacrifice a fers in the play from these positions, and the optimal without-sacrifice line sent by Noam carries across unchanged (there are equi-optimal alternatives at various points). The lines from all four positions converge at 4 Ke1.

**0...Kc6 1 Kb4 Kd5 2 Kc3 Ke4 3 Kd2 Kf3 4 Ke1 Kg3 5 Kf1 :**

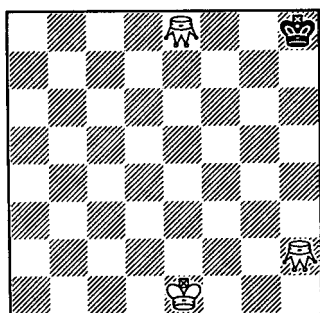


White has saved his fers on h1, and can gather his men and advance.  
**5...Kf3 6 Fb1 Ke3 7 Ke1 Kd3 8 Fg2 Kc3 9 Kd1 Kd3 10 Fc2+ Ke3 11 Ke1 Kd4 12 Kd2 Kc4 13 Ke3 Kd5 14 Kd3 Kc5 15 Ke4 Kb4 16 Kd4 Kb5 17 Kd5 Ka5 18 Kc5 Ka6 19 Ff3 Kb7 20 Kd6 Kc8 21 Fe4 Kd8 22 Fd5 Ke8 23 Ke6 Kf8 24 Kf6 Ke8 25 Fc6 Kd8 26 Ke6 Kc7 :**



**27 Kd5 Kd8 28 Kd6 Ke8 29 Ke6 Kf8 30 Kf6 Ke8 31 Fb3 Kd8 32 Ke6 Kc7 33 Fb5 Kb7 34 F3c4 Kc8 35 Fd5 Kc7 36 Fdc6 Kd8 37 Kf7 Kc8 38 Ke8 Kc7 39 Ke7 Kc8 40 Kd6 Kb8 41 Kd7 Ka7 42 Kc7 Ka8 43 Kb6 Kb8 44 Fb7 stalemate.**

The starting position of the longest win in the opposite-colour case is unique :

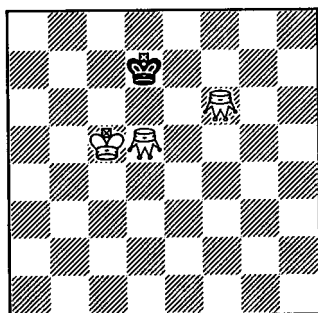


White to play stalemates in 41

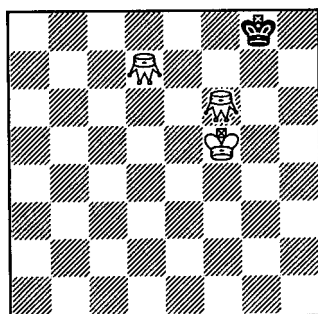
This is an unusual configuration for the starting position of the longest win in a "generally won" ending, but there is a prelude where, in Noam's words, "Black nearly manages to corral a fers à la Réti", and after Black's fourth move we have a more typical position where Black has the centre and White's men are scattered round the edge.

**1 Fd7 Kg7 2 Fc6 Kf6 3 Fb5 Ke5 4 Fa4 Kd4 5 Kd2 Kc4 6 Kc2 :**

Now **6...Kb4** will be met by **7 Fb3**, but Black can still make a nuisance of himself by attacking each fers in turn.  
**6...Kd4 7 Fg1 Ke3 8 Kd1 Kf3 9 Ke1 Ke3 10 Fb3 Kd3 11 Kd1 Ke3 12 Fc2 Kf3 13 Ke1** (White has finally secured his forces, and can start the advance) **Ke3 14 Ff2+ Kd4 15 Kd2 Kc4 16 Ke3 Kd5 17 Fg3 Kc4 18 Ff4 Kc5 19 Fd3 Kd5 20 Fe4+ Kc4 21 Fe5 Kc5 22 Kd3 Kb5 23 Kd4 Kc6 24 Kc4 Kd7 25 Ff5 Kc6 26 Fe6 Kb6 27 Fd5 Kc7 28 Kc5 Kd7 29 Ff6 :**



**29...Kd8** (29...Ke8 lets White get there one move sooner, **30 Fe6 Kf8 31 Kd5**) **30 Fe6 Ke8 31 Kd6 Kf8 32 Kd5! Ke8 33 Ke5 Kf8 34 Fd7 Kf7 35 Kf5 Kg8 :**

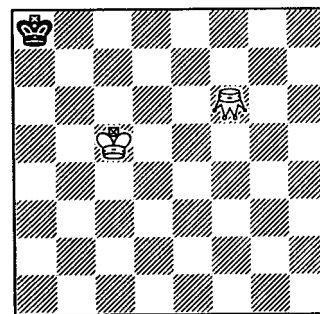


Now we are on familiar ground: **36 Fe8 Kf8 37 Ke6! Kg8** (37...Kxe8 38 Fe7 stalemate) **38 Ff7+ Kf8 39 Fg6 Kg8 40 Ke7 Kh8 41 Kf8 stalemate.**

Without the sacrifice **37 Ke6**, the final stage would take six moves longer (an optimal non-sacrifice line is **36 Kg6 Kf8 37 Kh5 Kg8 38 Kh6 Kf7 39 Kg5 Kg8 40 Fe7 Kf7 41 Fd6 Kg7 42 Fe6 Kh7 43 Kh5 Kg7 44 Fe7 Kh7 45 Ff6 Kg8 46 Kg6 Kf8 47 Ff7**). However, Noam's original analysis had found the longest win without a sacrifice to take 46 moves, not 47, and the reason is to be found in the play at moves 29-32. With the aid of the sacrifice **37 Ke6**, White's **32 Kd5** forces stalemate at move 41. Without a sacrifice, **32 Kd5** leads to stalemate only at move 47, but White has an alternative move **32 Kd7** which forces it at move 45. Black therefore does better to play **29...Ke8**, since after **30 Fe6 Kf8** the shortening move **Kd7** is not available. White has nothing better than **31 Kd5**, and stalemate follows at move 46.

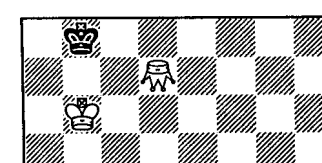
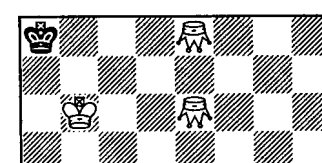
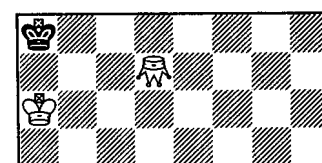
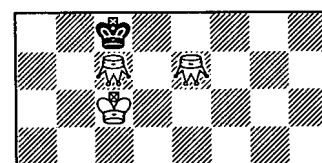
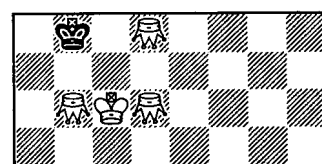
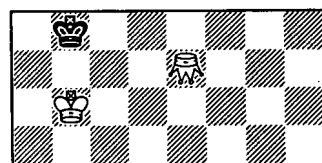
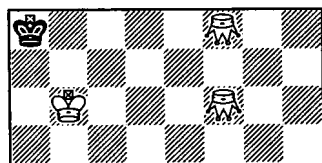
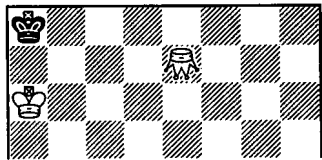
Now let us look at the reciprocal zugzwangs. Normally, any reciprocal zugzwangs that exist in a generally won ending are typified by the lower position in the middle of the previous page: the stronger side is constrained, and cannot disentangle itself. The upper position shows a different mechanism. Black is able to capture a helpless fers on a8, and everything depends on whether White can force stalemate with his remaining fers.

We therefore need to look at endings with a single fers. White can force stalemate only if the Black king is already on the edge, and a typical longest stalemate takes seven moves :



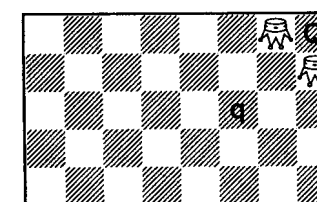
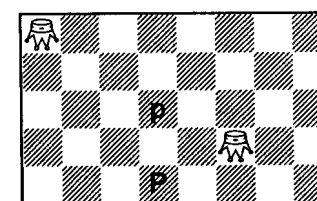
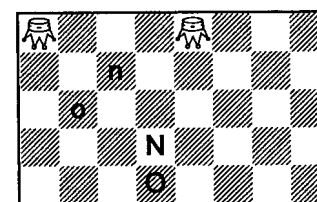
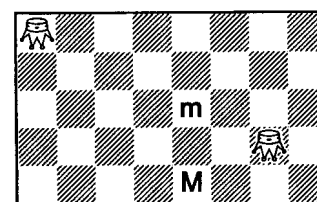
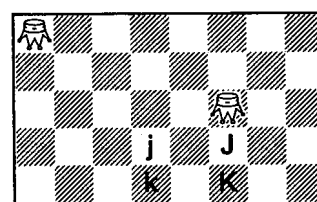
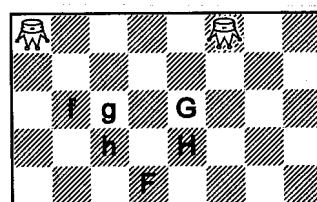
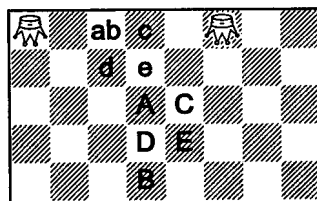
The play from here goes **1 Kb6 Kb8 2 Fe7 Kc8 3 Kc6 Kb8 4 Fd8/Fd6 Ka8** (best) **5 Kb6 Kb8 6 Fc7+** etc, and each of the positions after **1 Kb6**, **2 Fe7**, **3 Kc6**, and **4 Fd8/Fd6** is reciprocal zugzwang. There are in fact

fourteen positions of reciprocal zugzwang with a single fers :



It is easily verified that in each case White can force an eventual stalemate (or has given one) if Black is to play, but cannot if he himself is to play.

With two ferses, there are fifteen positions of reciprocal zugzwang :



The lower case letter gives the Black king, the upper case letter the White. If the Black king is on c8, there are two possible positions for the White, d6 and d4. Nn and Qq are the two positions which we saw on page 90.

I sent these to Noam while they were still hot from the oven, with an initial note that he might find Aa of interest and a subsequent note that Bb seemed even more remarkable: how could a position like this, with the White king isolated on the distant square d4, possibly be reciprocal zugzwang? But as Noam said in reply, the nice thing about having a complete database is that it can not only raise such questions but also answer them. Once we have put the two sets of positions side by side, all becomes clear.

Consider Aa. Black to play must go for a8, but after 1...Kb8 2 Kc6 Kxa8 3 Kb6 we have one of the reciprocal zugzwangs in the first column. White to play might seem to have 1 Fe7, but after 1...Kb8 2 Kc6 Kxa8 3 Kb6 his fers is on e7 instead of f8, and now 3...Kb8 leaves him as the player in zugzwang. Alternatively, try 1 Kc6: no, 1...Kd8 threatens to hunt down the fers on f8, forcing 2 Kd6, and 2...Kc8 repeats the original position.

Now consider Bb. 1...Kb8 2 Kc5 etc, 1...Kc7 2 Kd5, 1...Kd7 2 Ke5. 1...Kd8, to hunt down the fers on f8? No, 2 Fg7, when 2...Ke7/Ke8 is met by 3 Ke5 and 4 Ff6. But White to play has no good move, despite the isolation of his king: 1 Kd5 Kc7, 1 Ke5 Kd7, 1 Kc5 Kd7/Kd8 etc.

There is a lot more, as those who are tempted to explore further will discover. For example, from Dd, if Black plays 1...Kd8, White must again play 2 Fg7; if instead 2 Ke6 then 2...Kc7 forces 3 Kd5 repeating the position. It is also instructive to work out why some apparently equivalent positions are *not* reciprocal zugzwang. Or what about Kd4, Fb8/e7 v Kc6, sent to me by Noam while we were still looking for same-colour positions where sacrifices might be beneficial? Black loses after 1...Kb7 2 Kc5 Kxb8 3 Kb6 but draws if he attacks e7 first, 1...Kd7 2 Ff6 Kc8 etc.

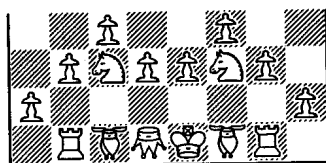
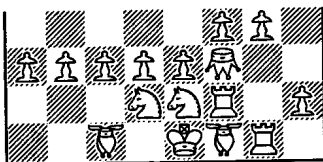
Truly, the lowly fers can give rise to positions of remarkable subtlety.

## THOUGHTS ON CASTLING

Before sending us the Lao Tzu Chess material that appeared in our last two issues, John Kipling Lewis asked if we would be interested in an article on castling in Fischer Random Chess (randomized baselines subject to the constraints that the bishops be on squares of different colour and the king be somewhere between the rooks, Black mirroring White on the file). I said that the honest answer had to be No, because Fischer Random was a game in which we took little interest, but a look at the two Lao Tzu games in VC 58/59 has convinced me that the subject is worth an airing.

Castling, as a move, seems to be unique to modern chess and to games derived from it or influenced by it, and if the rules of chess as a totally new game were being drawn up today I imagine that few people would think of including it. Frankly, it is a bodge. However, there are reasons for it, as there are for all bodes, and these reasons are two: it takes the king out of the centre to a position where it may perhaps be safer, and it brings the rooks into communication and gives them access to the centre. So let us look at how these objectives have been addressed in other forms of chess.

In the classic period of *shatranj*, there seem to have been sixteen recommended opening configurations, eight given both by al-Adli and by as-Suli, six only by al-Adli, and two only by as-Suli (Murray, *A History of Chess*, pages 236-8). They divide into four classes as shown in the examples at the top of the next column. In the first class (one example by al-Adli only, one by as-Suli only, two by both) one of the rooks has already come over to the other side (usually by the second rank as here, but in one example by the third). In the second class (one example by as-Suli only and a further three by both), the second rank is largely or wholly cleared for the rooks. In the third class (four examples by al-Adli only, three by both), the king is moved one step



forward, and the back rank is cleared for the rooks. In the fourth class (a single example given only by al-Adli), the second-rank pawns are left at home, and both rooks will be brought into play via the third.

**Medieval chess** was essentially *shatranj* with some differences of detail, one of which was the granting to an unmoved king of a leap move (Murray, pages 457 and 461-3). Details and constraints varied widely.

The third form of *shatranj* opening, with the king advanced to the second rank and the first rank cleared for the rooks, seems gradually to have fallen into disfavour (as-Suli, who was two or three generations later than al-Adli, repeated only three of al-Adli's seven examples, and al-Lajlaj, who was one generation later still, commended the second diagram above as the best). However, in modern *makruk* (Thai chess), which is essentially *shatranj* with the pawns starting on the third rank, promotion on the sixth rank, and a different move for the alfil, it appears to be standard practice. In the book from which the examples in VC 56 were taken, both players used it in 36 of the 41 games, and one player used it in the remaining five.

**Castling** as we know it is peculiar to **modern chess**, and arose in Europe in the sixteenth century (Murray, pages 812 and 830-3). It was no doubt prompted by the more powerful queen and bishop, which no longer gave a player time to clear the second rank for his rooks and made it dangerous for his king to leave the back rank. At first, the player had much greater freedom in placing his king and rook than he has today, and the modern rule did not become universally adopted until late in the nineteenth century.

In the standard **Fischer Random** castling rule, the king and rook move to the squares which they would occupy after normal castling (so even if the king and his rooks start on a1/b1/c1, which happens 18 times out of 960, 0-0 moves the king and c-rook to g1 and f1 respectively, and 0-0-0 moves the king and a-rook to c1 and d1). With Kg1 (108 times out of 960), 0-0 leaves it unmoved; with Kc1 (168 times), 0-0-0 leaves it unmoved. All this looks very unnatural, and on the web John has suggested a simpler and more natural rule: the king always moves two squares towards the rook, and the rook moves to the square the king has just passed over (unless the king was one square from the edge, in which case they simply change over). There is now no difference between "king's side" and "queen's side".

Yet I wonder. With Ke1 (204 times out of 960), we have the normal Fischer Random rule. With Kf1 (168 times) or Kg1 (108 times), John's "short" castling puts the king and rook on h1/g1 instead of g1/f1, while his "long" castling brings the king *into* the centre. Are these really what we want? And if the king is on d1/c1/b1, we have the reflections of these.

David Pritchard thought Fischer Random a poor game giving unnatural and untidy starting positions, and I have to say I agree. But people play it, last time's Lao Tzu game suggests that castling is essential, and neither the standard form nor John's suggested alternative seems ideal. I wonder whether it might be worth thinking right back to the origins of castling, and allowing the players almost total freedom in placing their men.

# MOVE IT OR LOSE IT

material from Donald Knuth

One of the games in the "Compulsions and restrictions" chapter of *ECV 2* is Bruce Trone's **Musical Chess**, in which every man must move once before any man moves twice. However, I know of nobody who has tried this game, and the index sheet in David Pritchard's files has a note "Problems with check, piece unable to move etc?"

I was therefore very interested when Donald Knuth recently sent me a copy of a letter he had written to Martin Gardner in 2002 describing a much more practical version of this idea. He and his son tentatively called it **15-Out** or **Move It Or Lose It**, and the letter included the opening moves of the first game they played. As usual, I am standardizing notation and typography even within quotations.

"You play with ordinary chess pieces, but each player also has 15 cards that fit under the pieces, each card being the size of a square on the board. The cards of each player are numbered from 1 to 15. One card is placed under every piece *except* the king; the numbers are visible to both players.

"Our initial setup [with the men as usual] was

9	11	13	15	14	12	10	
8	6	4	2	1	3	5	7
8	6	4	2	1	3	5	7
9	11	13	15	14	12	10	

and it worked fine, but lots of other starting positions are plausible.

"All the rules of ordinary chess apply, and there's also a new rule that sometimes removes pieces or pawns from the board: Each move has a serial number *k* that runs through the cycle 1, 2, 3, ..., 14, 15, 1, 2, 3, ..., 14, 15, 1, etc. If you've moved anything besides a king on move *k*, you put

card *k* under that piece. Also, if card *k* was under a piece that you *didn't* move, that piece is taken off the board.

"A few slightly subtle points arise: (1) When you castle, the rook is the piece that gets card *k*. (2) When a piece is removed because you didn't move it at its "doomstime", this might result in discovered check on your opponent. (3) A player is not allowed to move in such a way that losing a piece/pawn leaves his king in check; therefore there's a new kind of stalemate.

"For example, here are the first moves in the first game I played with my son John (who had the white pieces):

- 1 e2-e4  
(it remains above card 1)
- 1 ... e7-e5  
(likewise)
- 2 Bf1-b5  
(loses his d-pawn; the bishop becomes #2 and card 14 is temporarily retired until move 14)
- 2 ... c7-c6  
(loses my d-pawn; card 4 temporarily off board)
- 3 Qd1xd8+  
(loses his f-pawn)
- 3 ... Ke8xd8  
(losing my f-pawn; card 3 off board, since K gets no card)
- 4 Bc1-g5+  
(loses c-pawn)
- 4 ... Bf8-e7  
(card 4 comes back into play, card 14 temporarily off)

and so on. (My son was evidently in an aggressive, sacrificial mood.) (He won.)

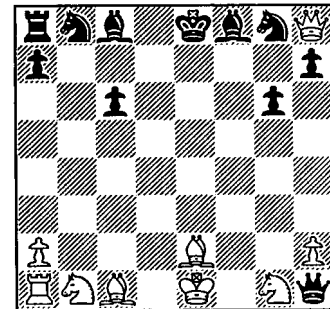
"After a while the pieces dwindle and the new rules have less and less effect; players might reach a point where the cards are a nuisance because the pieces move frequently anyway. It helps to keep a record of the game, so that cards can be dispensed with in such cases. But games go fast, and there's an interesting mix of new strategy versus old."

The game does indeed go fast, indeed it is so sharp that I fear opening play might soon become stereotyped. However, if this proves to be a

problem, other arrays could be tried for the cards, or the players could even be invited to place them on the board one at a time as a preliminary phase. In the meantime, I tried substituting the beginner's move

3 Qd1-h5  
in the game above. This looks much stronger than in ordinary chess, because the imminent disappearance of Black's f-pawn restricts him to a king move or ...g6. Let's try the latter:

- 3 ... g7-g6.  
White naturally continues
- 4 Qh5xe5+,  
but after
- 4 ... Qd8-e7  
5 Qe5xh8  
his own g-pawn has gone and
- 5 ... Qe7xe4+  
forks his own rook in return. Try
- 6 Bb5-d2  
at least rescuing the bishop; then
- 6 ... Qe4xh1  
gives (I think)



9	<u>11</u>	<u>13</u>	<u>14</u>	<u>12</u>	5
8					<u>7</u>
		<u>2</u>		<u>3</u>	
8			6		7
9	11	13		12	<u>6</u>

where Black's cards are underlined.

I think White must now rescue his queen by

7 Qh8-e5+  
or perhaps 7 Qd4. If he defends his knight by 7 Be3, his h-pawn will go, Black's reply 7...Bb4+ will give check and remove his own h-pawn, and White's queen is dead.

Strictly for fun, of course, but well worth trying.



## ISOLATED PAWNS

**Drop Games.** VC 59 gave examples of three “drop” games (Chessgi, Hostage Chess, and Lao Tzu Chess). Lao Tzu, with its hidden armies, is a special case, but Chessgi and Hostage make a natural pair for contrast.

Chessgi has long been thought by some to be too fierce a game. Hostage is markedly gentler, and has the very great practical advantage of requiring only one set of men. Against this, its rules are more complex, and I suspect that this may be hindering its spread.

In particular, I feel that the use of a separate “prison” and “airfield” is an unnecessary complication. The names are picturesque and they allow the use of the phrase “parachute in”, but they are two more terms for the newcomer to learn, and there is no real reason for them to be separate; the airfield receives only a player’s own men, the prison only his opponent’s men, and a single “holding area” capable of holding both would do just as well.

(One other practical point. When introducing Hostage in VC 32, David Pritchard said that he found beer mats ideal for representing the prison and airfield: “put your beer somewhere else”. If they are combined into a single holding area, the second beer mat can revert to the purpose for which Nature intended it.)

I would also ask: why can a player only take a promoted piece from his opponent’s prison, and not from his own airfield? This seems illogical. I understand that the purpose is to reduce the effect of pawn drops on the seventh, but the “single box of men” restriction does this anyway. How often does the need to take the promoted piece directly from the opponent’s prison, instead of using one already on the player’s airfield, make a difference, and when it does, is this a good thing or a bad?

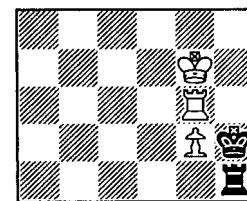
Hostage is a good game, but as it stands I fear it may not outlive its inventor’s push and enthusiasm. I risk his wrath by saying so, but with the simplified presentation suggested above, and a more consistent promotion rule, I think its long-term prospects might be better.

“Dawson’s Chess” is the name given by Berlekamp, Conway, and Guy to a game derived from a problem that first appeared in *The Problemist Fairy Chess Supplement* in December 1934: in Losing Chess, given two rows of  $n$  pawns one square apart, who wins? Dawson thought he had solved it for all  $n$  but later realised that he hadn’t, and to the best of my knowledge no general solution has yet been found. Around 1990, I analysed the game by computer, finding that Black won for  $n = 1, 2, 6, 7, 11, 15, 16, 20, 21, 25, 29, 30, 34, 35, 39, 44, 48, 49, 53, 54, 58, 62, 63, 67, 68, 72, 76, 82, 92, 96, 101, 102, 106,$  and  $110$ , and that White won for all other values of  $n$  up to  $n = 117$ . This was well short of the state of the art even in 1990 and I don’t think I ever published the results, but they may be useful as confirmation if anyone is tempted to go further. Recalculation on a modern machine would probably push the limit up to 300 or so.

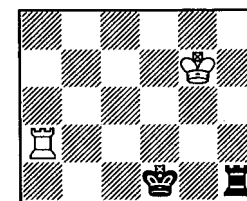
(A little background. Let  $L_n$  be the game above with  $n$  pawns on each side, and suppose that  $n$  is at least 5; then a White move with pawn 1 followed by the compulsory captures reduces it to  $L_{n-2}$ , a move with pawn 2 reduces it to  $L_{n-3}$ , and a move with pawn  $p$  ( $3 \leq p \leq n-2$ ) splits it into two separate games  $L_{p-2}$  and  $L_{n-p-1}$ . Now let  $D_n$  be the game where the players have a single row of  $n$  objects and the move is to remove two adjacent objects. If  $n$  is at least 6, we see that the player can reduce it to  $D_{n-2}$ , to  $D_1$  and  $D_{n-3}$  (which is effectively to  $D_{n-3}$  alone since  $D_1$  does not permit a move), and to  $D_{p-1}$  and  $D_{n-p-1}$  for  $3 \leq p \leq n-3$ . This perhaps suggests that the games  $L_n$  and  $D_{n+1}$  may be equivalent, and such can indeed be rigorously proved. Now there is a similar game called “kayles” in which the move is to remove either a single object or two adjacent objects. The misère form of this game (last player to move loses) was solved some years ago by Sibert and Conway, and one of the objects of my analysis was to see if the Sibert-Conway approach might work here as well. Alas, the evidence suggested that it wouldn’t, and Richard Guy, in a letter which I seem to have lost, said

that he thought progress along these lines was unlikely. Be it noted also that my actual calculations related to  $D_n$ , and that the list above was transcribed by hand with the numbers  $n$  each being reduced by one.)

**Petty Chess** (ECV 2 page 114) is a chess game played on a 5x6 board (a1-e6) whose originator remarked that its games frequently produced “quite beautiful endings” (*British Chess Magazine*, September 1930). He gave no example, but Noam Elkies recently sent me a delightful little study with the board oriented a1-f5 which I put in the March issue of *British Endgame Study News*:



White cannot usefully hold on to his pawn (1 Kd3 Rd1+ 2 Kc2 Kxe3 3 Kxd1 is only drawn, just as it would be on the 8x8), but after say 1 Ra3 Black must take the pawn at once else 2 e3 will win. So try 1 Ra3, going all the way: no, 1...Kxe2 2 Ra2+ Kd1,



and White can make no progress (3 Kd3 Rf3+, 3 Ke3 Rf5, 3 Rb2 Kc1). Try 1 Rb3: yes, 1...Kxe2 2 Rb2+ Kd1 (2...Ke1 3 Ke3) 3 Ra2, and this time we have the second diagram with Black to move and he soon loses (3...Re1+ 4 Kd3, 3...Ke1 4 Ke3). So why not 1 Rc3, intending 1...Kxe2 2 Rc2+ Kd1 3 Ra2 and the same? Because now Black can play 2...Ke1, since after 3 Ke3 Kd1 White has no check on the bottom rank. Noam was inspired by two orthodox studies by Artur Mandler, but Mandler needed six extra men to close off three files of the normal 8x8 board. On the smaller board, everything works perfectly.

# BASIC ENDINGS IN CHESS VARIANTS

material from Marc Bourzutschky, Václav Kotěšovec, and others

In VC 58, I promised a survey of the work on basic endings that had been done by Václav Kotěšovec. More recently, Noam Elkies has reminded me of the work done by Marc Bourzutschky, and it seems to me that the two might usefully be presented together.

## 1. Normal pieces, different boards

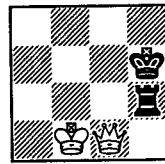
**Queen against rook** was analysed by Marc Bourzutschky in 2004. On the 8x8 board, this ending is won for the queen unless the defender can force a quick mate, stalemate, capture, or perpetual check. This remains true on square boards up to 15x15, but on a 16x16 board the defender may be able to hold out by perpetually running away. The same is presumably true of all larger boards, though only one or two cases were explicitly verified. On the 16x16 board, there are 21 positions of reciprocal zugzwang (Black to play loses, White to play cannot win). These were presented in VC 44, and the longest win (155 moves to capture) was given in the June 2004 issue of *British Endgame Study News*.

On rectangular boards, Marc found the following results:

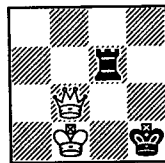
Generally won	Not generally won
6x12	6x13
7x13	7x14
8x14	8x16
10x16	

The specific case of the 8x12 board of Modern Courier Chess was looked at in VC 44, where we gave both the win from the "Philidor" position (wKc3, Qa4, bKb1, Rb2, board a1-l8, 23 moves to capture, difficult) and the longest win (73 moves to capture).

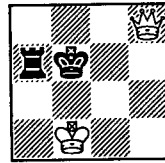
If a large board helps the defenders to run away, a very small board cramps the queen, and on the 4x4 board there are nine positions of reciprocal zugzwang :



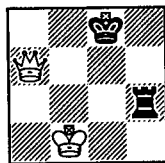
1 (1 move to capture)



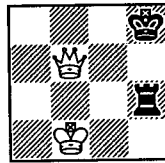
2 (2 moves)



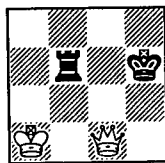
3 (3 moves)



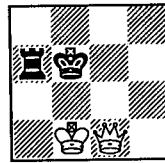
4 (5 moves)



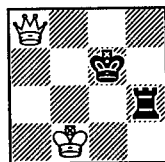
5 (8 moves)



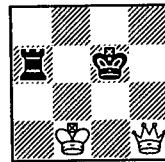
6 (9 moves)



7 (11 moves)



8 (14 moves)

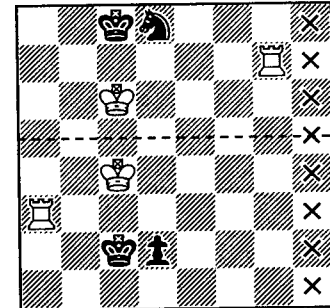


9 (15 moves)

Specimen lines of play can be found on page 103. 2 is also reciprocal zugzwang on a 3x3 board, but 1 is not because Black to play can sacrifice for stalemate.

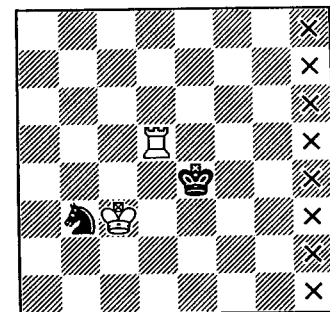
**Rook against bishop** was analysed on the 8x8 board by Ströhlein and Zagler in 1967-69, but Hans Gruber tells me that their technical report contains no references to smaller boards, and I know of analysis predating that done by Marc in 2004. He found the ending to be won for the rook on a 6x6, 6x7, or 6x8 board (the longest wins on 6x6 and 6x8 were given in VC 59), but not on a 6x9 or 7x8. It is drawn on a 7x7 whichever set of squares the bishop runs on.

**Rook against knight** was looked at by Artur Mandler as long ago as 1933, when he observed that the standard drawing position in the top half of the diagram below became a win for the rook if the h-file was removed :



Noam Elkies points out that this affects some R v P theory: the familiar systematic advance ending in the lower position, 1 Ra2+ Kc1 2 Kc3 d1N+, becomes a White win on a seven-file board (as it was on the 8x8 when promotion was only to queen).

But a smaller board does not always favour the rook. Marc gives this position :

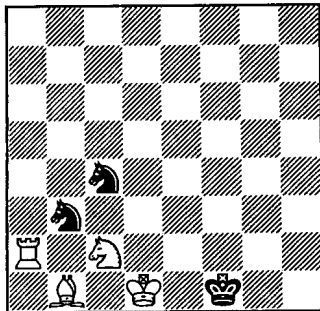


White's only winning move is Rh5, and this time the position is drawn if the h-file is removed.

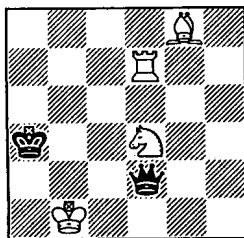
The ending remains normally drawn on a 7x7, and Václav Kotěšovec has shown that the defender can hold the draw even on a 6x6 if he can establish himself well away from the edge.

The standard winning procedure with **king, bishop, and knight against bare king** uses the fact that the board dimensions are 8x8, but there is an alternative, due to Julius Telesin, which systematically drives the king back to the right corner and forces the win however large the board may be. It can be found in issue 73 (July 1983) of the endgame study magazine *EG*.

On an 8x8 board, the most economical **full-point reciprocal zugzwang without pawns** (whoever is to move loses) uses seven men, the first example having been discovered by Noam Elkies around 1991 :



White to play must allow immediate mate; Black to play cannot maintain the bind, and White can disentangle himself and win with his extra rook. It was thought for some time that the six-man position without the bishop might have the same property, but the computer eventually showed that Black to play could draw by 1...Nc5. On a 6x6 board, this six-man position does become a full-point reciprocal zugzwang, and Marc has found one other six-man pawnless position with the same property :



White to play here is soon seen to lose (if for example 1 Rd6 then 1...Qd1+ 2 Nc1 QxR). Black to play has several apparently safe moves including ...Qa2+ and ...Qd1+, but his king is poorly placed, the smaller board cramps his queen, and in practice White can play to mate or win the queen within 25 moves.

The Elkies position (without the bishop) remains a six-man pawnless full-point reciprocal zugzwang on a 7x7 board, but the second position above does not. The non-existence of any other such position on a 7x7 board remains unproven, but I think none of us expects there to be one.

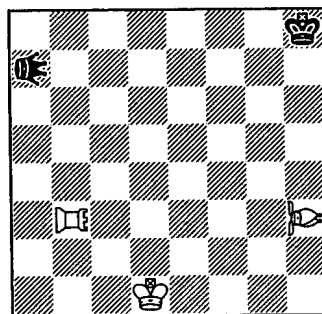
### 2. Pieces with added knight power

Endings with Archbishop (B+N), Chancellor (R+N), and Maharaja (Q+N) have received relatively little attention. Several names for these pieces are in circulation, and for present purposes I am using Marc's.

Marc tells me that he became interested in the **Archbishop** when he found a win with A v B + N on an 8x8 board which took 151 moves to capture (the longest five-man pawnless ending with ordinary pieces is a 77-move ending with B + N v N published by Lewis Stiller in the *ICCA Journal* in 1989). Given that Q = R+B and that Q + N v R + B + N has a win in 517 moves, it seemed natural to look at A + N v B + N + N, and this turned out to have a win in 568 moves. This is the longest win Marc has so far found with chess-like pieces on an 8x8 board. Investigations with the **Chancellor** and **Maharaja** failed to beat it.

K + A v K is a win. K + A v K + B "seems to be a win" on a 9xn board, but not on any larger board.

The **five-man pawnless ending C + A v M** has two **full-point reciprocal zugzwangs**. I asked Marc whether finding them could be set as a task for solution, and he said that one featured wKa1, bKc1, wC pinned by bM. Given this information, finding the position appears within human capacity, though neither Noam nor I got all the details right (answer on page 103). The other is



where White to play loses in 8 and Black to play loses in 12. We think this could not have been found other than by computer.

Most of the information in this column appears to be new. My thanks to Marc for allowing us to quote it.

### 3. King and two leapers

The work here was done by Václav Kotěšovec. It was initially reported in the Bratislava composition magazine *Pat a mat* (issues 19, April 1994, and 30, September 2000), and a version in English with minor revisions appeared in the June 2001 issue of the *ICGA Journal*. An "x-y leaper" jumps x squares in one direction and y squares in the other, and the task was to discover the largest boards on which combinations of two leapers, in conjunction with their king, could force mate against a bare king.

Václav's results were as follows:

Leapers	Largest board		Notes
	Even	Odd	
0-1, 0-2	4x4	7x7	c
0-1, 1-1	6x6	9x9	c
0-1, 1-2	12x12	11x11	
0-1, 1-3	8x8	9x9	c
0-1, 1-4	8x8	9x9	
0-1, 1-5	6x6	7x7	c
0-1, 1-6	8x8	7x7	
0-1, 2-4	6x6	7x7	c
0-2, 1-2	6x6	9x9	c
0-2, 1-3		9x9	z
1-1, 1-2	6x6	9x9	c
1-1, 2-3		9x9	c
1-1, 2-4		5x5	z
1-2, 1-3	8x8	13x13	c
1-2, 1-4	10x10	11x11	
1-2, 1-5	6x6	11x11	c
1-2, 1-6	10x10	11x11	
1-2, 1-7		9x9	c
1-2, 1-8	10x10		
1-2, 2-4	6x6	9x9	c
1-3, 2-4		9x9	z

An ending is regarded as "winning" if king on a2 and leapers on a1 and b1 can force mate against a king on any legal square away from the edge.

Other notes:

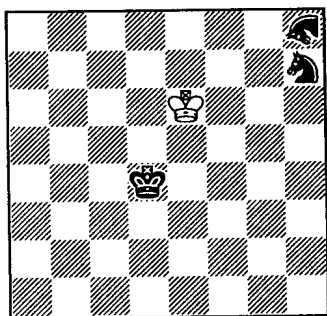
c On an odd board, the odd-odd or even-even leaper must be able to reach the corners.

z The leapers must run on squares of different colour, and the even-even leaper must be able to reach the corners.

A winning ending normally remains winning on smaller boards of the same parity, assuming that both leapers still have a move, but there are two

exceptions: 0-2 + 1-2 cannot force a win on a 4x4, nor 1-1 + 2-3 on a 5x5. The longest win, with 0-1 + 1-2 on a 12x12, takes 194 moves, and it will be noticed that **two leapers of the same kind can never force a win.**

There are of course positions where the normal result does not happen, and Václav gave the following amusing example in 1994 (I have reversed the colours and added an introductory move for White):



The sideways knight on h8 is a camel (1-3 leaper). The combination of knight and camel (1-2 + 1-3) normally wins, but here White can play 1 Kf7 Ng5 (1...Cg5 2 Kg6) 2 Kg7 Ce7 (the knight is blocking g5) 3 Kf6 Ch8 (and now the king is blocking d4) 4 Kg7 with a draw by repetition.

#### 4. Grasshoppers

The **grasshopper** moves along queen lines up to the nearest man of either colour, hops over this man, and lands on the square immediately beyond, capturing anything it may find there. It is a weak piece which is more usually met in problems than in play (a G on an empty board cannot move), but some forms of "Grasshopper Chess" have been invented. Most of the present work was done by Václav as long ago as 1977, and he reported confirmation by computer in issue 38 (October 2002) of *Pat a mat*. He reported his more recent work in May 2008 on his web site

<<http://web.telecom.cz/vaclav.kotesovec/>>

(note "web" and not "www").

**King and four grasshoppers** can force a win against a **bare king** (four grasshoppers in a tight square cannot be approached by an enemy king), but king and three grasshoppers cannot.

**King and one minor piece** can force a win with the support of **two grasshoppers**, but not with the support of only one. **King and two knights**, and **king and two like bishops**, can force mate with the support of **one grasshopper**.

**King and two unlike bishops**, **king and two knights**, and **king, bishop, and knight** can all force a win against **king and grasshopper**.

**King and rook** can force a win against **king and one grasshopper**, but not against more. **King and queen** can force a win against **king and two grasshoppers** and against **king, grasshopper, and one minor piece**. **King and queen against king, rook, and grasshopper** is complicated and unclear: "some positions are won, some are drawn".

**King, rook, and grasshopper** can force a win against **king and one minor piece**.

**King, two grasshoppers, and an x-y leaper** can force a win against a **bare king** on an 8x8 board only in the cases of a 0-1, 1-1, 1-2, or 2-3 leaper. On a 6x6 or 7x7 board, a 0-2, 1-3, or 1-4 leaper can also force a win, but in the case of a 0-2 leaper on a 7x7 only if it can reach the corners or one of the squares immediately adjacent to them. If it can merely reach the squares diagonally adjacent to the corners, there is no win.

#### 5. Other pieces

This work has again been done by Václav, and is reported on his web site as given in the previous section.

For present purposes, the **lion** moves like a grasshopper but can continue sliding beyond the hurdle as long as the route is unobstructed. (Other lions have appeared in the literature.) **King and two knights against king and lion** is drawn (unlike against king and grasshopper, when they can force a win). **King, bishop, and knight** can force a win, as can **king and two unlike bishops**.

**King and rook** can force a win against **king and lion**, but not against **king and two lions**. **King and queen** can force a win against **king and two lions**.

The **pao** is the xiangqi cannon, and the **vao** and **leo** are its equivalents on bishop and queen lines. **King and two knights** can force a win against **king and vao**, but not against **king and pao**. **King and two unlike bishops** can force a win against **king and vao** and against **king and pao**, but not against **king and leo**. **King, bishop, and knight** can force a win against **king and vao** but not against **king and leo**; the result against **king and pao** is not easily summarized.

**King and rook** can force a win against **king and vao** and even against **king and two vaos**, but not against **king and pao**. **King and queen** can force a win even against **king and two leos**.

#### 6. Unfinished business

Back in 1996, I raised the question: is there some number  $n$  such that a king and  $n$  knights can force a win against a bare king however large the board may be? Alternatively, is it possible to prove that however many knights we may have, there is a board on which they cannot force mate?

My personal belief tends to the latter, on the grounds that if the lone king runs away at high speed then at most two knights will be able to keep up with him. It therefore seems to me that we can possibly define a "sparse" region in some sense (say that there are at most two or perhaps three knights, or the enemy king and perhaps one knight, within a certain distance), and hope to prove that if the board is sufficiently large and the king is already in a sparse region then he cannot be prevented from running into another sparse region. However, it is one thing to waffle away in general terms, and quite another to produce a rigorous proof. But we have readers in university mathematics departments; even if they themselves have other things to do, does none of their brighter students feel like having a go?

In the meantime, here is an easier one. Let  $Z$  be the composite piece  $X+Y$ . If  $K + X \vee K$  is a win and  $K + Y \vee K$  is a win, does it follow that  $K + Z \vee K$  is a win?

Answer again on page 103.

# PROOF GAMES

Alain Brobecker has been looking at what he calls **Fool's Chess**, which is played with the array NBQRRKBN. This is the only array with normal symmetries (king's side reflects queen's, Black mirrors White on the file) which allows a Fool's Mate on White's second move. His computer found that there were unique games ending in (a) 4 Qxf7 mate, (b) 4...Rxe4 mate, (c) 4...Bc4 mate, and (d) 4...Rxe1 mate. They make a good solving challenge, so let us call this our 68.

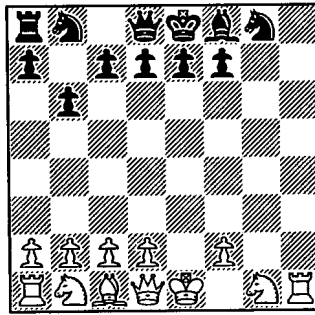
Peter Fayers has drawn my attention to a recent composition tourney in the German problem magazine *Die Schwalbe*, where competitors were asked to produce uniquely reachable **Losing Chess** positions in which a piece apparently on its home square was in fact a promoted pawn. I haven't seen the official award, and am relying on an account on the Retros web site

<[www.pairlist.net/pipermail/retros](http://www.pairlist.net/pipermail/retros)> which gave the winning entries (the prizes went to the shortest games) and presented a couple of further examples. I have selected six out of seven, and have added two more Losing Chess proof games (no set theme) from Ralf Binnewertz's lovely *Schlagabtausch im Räuberschach*, reviewed in VC 37. Where multiple authors are given, each sent essentially the same position.

Answers on page 103.

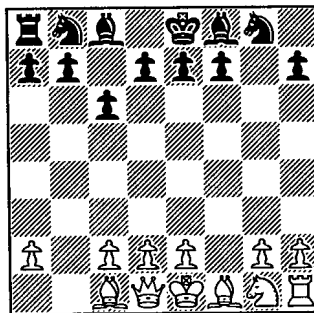
- SB - Silvio Baier
- MB - Marco Bonavoglia
- DB - Dirk Borst
- VC - Vlaicu Crişan
- WD - Wolfgang Dittmann
- ND - Nicolas Dupont
- BG - Bernd Gräfrath
- UH - Unto Heinonen
- JL - Jorge Lois
- RO - Roberto Osorio
- MR - Mario Richter
- JS - Juha Saukkola
- RS - Ronald Schäfer
- MW - Martin Walter
- GW - Göran Wicklund.

69 - ND, UH, JS, RS, MW, GW



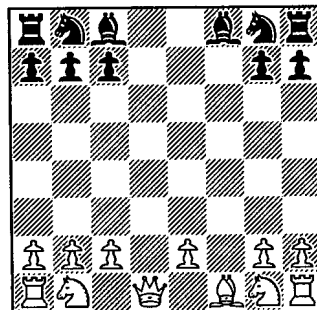
Losing Chess, after White's 7th

70 - SB, BG, RO&JL, MR



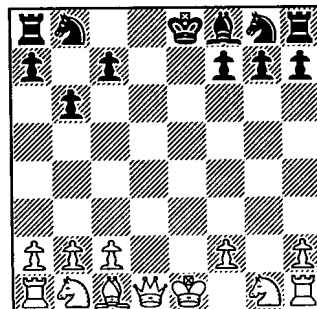
Losing Chess, after White's 7th

71 - DB, VC



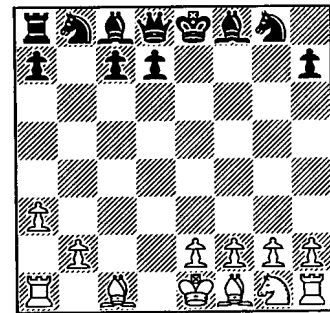
Losing Chess, after White's 7th

72 - DB, BG



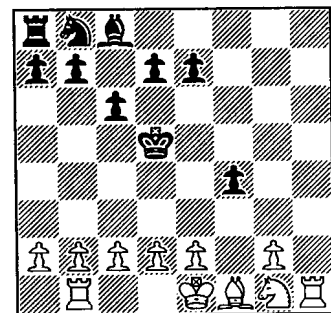
Losing Chess, after White's 7th

73 - BG



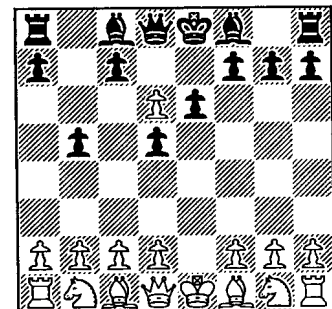
Losing Chess, after Black's 9th

74 - BG



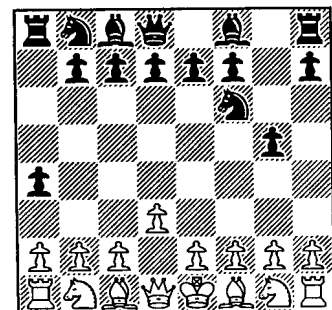
Losing Chess, after White's 14th

75 - WD, Die Schwalbe 1986



Losing Chess, after White's 11th

76 - MB, feenschach 1986



Losing Chess, after White's 12th

# THE END IS NIGH !

by Paul Byway

## Solutions to competition 35

#223 8 a5 a4 Ra5 Rxd5 Bh6 Bc1 Nf6 Rc8 mate. This solution is due to Ian Richardson; Fred Galvin chose another route:- 8 b5 Na6 Nc5 Re8 Rxe5 Rxe2 Be7 Bf6 mate. This is a piece of good fortune because the diagram is wrong. There should be a black pawn on c7, in which case the intended solution is 8 c5 c4 b5 Nc6 Re8 Rxe5 Rxe2 Bxb4 mate. My apologies for that.

#224 7 exd5 c4 cxb5 b6 bxc7 c8Q d6 mate.

#225 7 Be2 Bxg4 Be3 Bxa7 c4 c5 Bb6 mate. Ian Richardson does it differently:- 7 Ke1 Bd2 Rd1 Ba6 Bxb7 Ba6 Ba5 mate.

#226 8 Kf6 Ng4 Ne5 Nd3 Nd7 Nb6 Na4 Nc3 Italian mate. Fred Galvin gives three Scottish mates after 9 Bxc3+:- 10 Bxc3 Bd2 d4 dxe3 Nb4 Nd5 Nc3 mate, 10 Bxc3 e5 exf4 f3 d4 dxe3 e2 mate, 10 Bxc3 e5 exf4 fxg3 g2 gxh1B Bf3 mate.

#227 9 Kg1 Qf8 Qc5 h4 h5 h6 hxg7 g8Q Qgc8 mate.

#228 7 Ne2 Nd4 Bb5 h4 Rh3 Rf3 Bg5 mate.

#229 1 Pd7+ Kd9 2 Ce1 Cd5 3 Ke2 Cd1 4 Ke3 Kd10 5 Pd8 Cd2 6 Cd1 and wins. If 6...Cd7 then 7 Cd6.

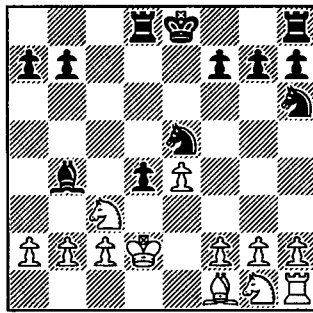
#230 1 Ch1 Kf9 2 Eg5 Kf8 3 Ch7 Kf9 4 Cf7 Ke9 5 Cf2 Cc10 6 Ce2+ Kf9 7 Pf7 Ke9 8 Pf8 Ke10 9 Pf9 wins. If 5...Cf8 then 6 Ce2+ Kf9 7 Pf7 Ce8 8 Ke3.

The current scores:- FG 167, IR 141, JB 73, RC 59, PW 35, CL 24, RT 19.

Competition 36 is alongside.

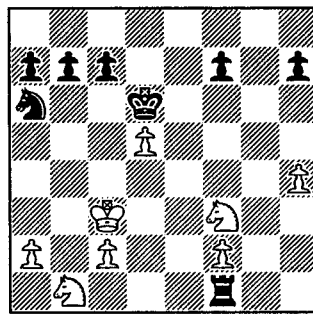
*The fact that #223 (and #217 before it) have had valid solutions despite diagram errors is not entirely due to good fortune; I solve after formatting the page and send Paul my solutions with his proofs, so a position with no solution should be picked up. I also attempt the XQ positions, but with markedly less success. - JDB*

#231 Sarale - Papaleo (1986)



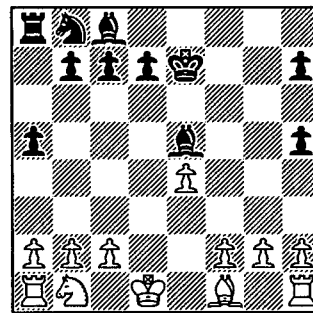
White wins (series 7)

#232 Sarale - Kustrin (1993)



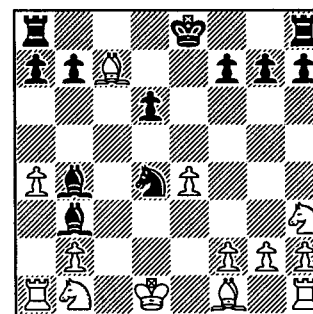
White wins (series 7)

#233 De Scordilli - Viola (1988)



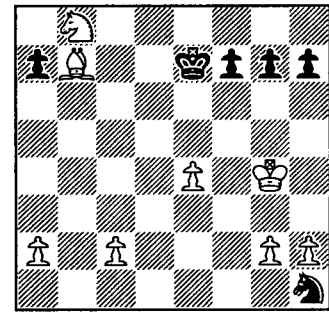
White wins (series 7)

#234 Mapelli - Kustrin (1985)



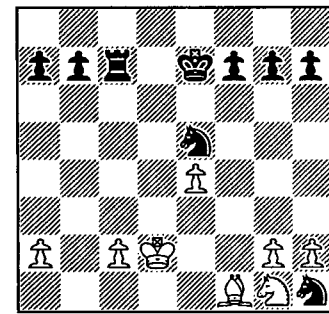
White wins (series 7)

#235 Biagini - Orsatti (1989)



Black wins (series 10)

#236 Cesaro - Benedetto (1989)



White wins (series 9)

#237 Cannon + Pawn #24

10	.	.	.	.	:	:	g	.	h	.
9	.	.	.	.	:	:	:	:	:	.
8	.	.	.	:	e	k	.	.	.	.
7	.	.	.	.	P	.	.	.	.	.
6	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	C	.	.
4	.	.	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.	.	.
2	.	.	.	:	K	:	.	.	.	.
1	.	.	.	:	:	:	.	.	.	.

Red to play and win

#238 Cannon + Pawn #27

10	.	.	e	:	:	:	.	.	.	.
9	.	.	.	k	g	:	.	.	.	.
8	e	.	P	g	:	:	.	.	.	.
7	.	.	p	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.	.	.
3	.	.	.	:	:	:	.	.	.	.
2	.	.	.	:	:	:	.	.	.	.
1	.	C	G	:	K	:	.	.	.	.

Red to play and win

# SOLUTIONS

**Proof games** (page 101). **68** (a) 1 c4 f6 2 Bg6 Bxc4 3 Qxc4 Nf7 4 Qxf7#, (b) 1 e4 d5 2 Ke2 Rd6 3 Rf1 Re6 4 Ke1 Rxe4#, (c) 1 e4 f5 2 exf5 e6 3 Rxe6 Bxe6 4 Ke1 Bc4#, (d) 1 e4 d5 2 exd5 Qg4 3 Rxe7 Qxd1+ 4 Rxe1 Rxe1#.

**69** 1 h4 b6 2 h5 Ba6 3 h6 Bxe2 4 hxg7 Bxf1 **5 gxh8R** Bxg2 6 R8xh7 Bxh1 7 **Rxh1**.

**70** 1 f4 c6 2 f5 Qb6 3 f6 Qxb2 4 fxg7 Qxa1 **5 gxh8B** Qxb1 6 Bhb2 Qxc1 7 **Bxc1**.

**71** 1 f4 e5 2 fxe5 Qh4 3 e6 Qxe1 4 exf7 Qxd2 **5 fxe8Q** Qxc1 6 Qexd7 Qxd1 7 **Qxd1**.

**72** 1 d4 b6 2 d5 Bb7 3 d6 Bxg2 4 dxe7 Bxf1 **5 exd8Q** Bxe2 6 Q8xd7 Bxd1 7 **Qxd1**.

**73** 1 d4 b5 2 d5 b4 3 Qd4 b3 4 Qxg7 bxc2 5 Qxh8 **exb1N** 6 Qxg8 Nc3 7 Qxf7 Nxd5 8 Qxe7 Nxe7 9 a3 **Ng8**.

**74** 1 h4 c6 2 h5 Qb6 3 h6 Qxf2 4 hxg7 Qxe1 **5 gxh8K** Qxd1 6 Kxg8 Qxc1 7 Kxh7 Qxb1 8 Rxb1 Bh6 9 Kxh6 f5 10 Kh5 Kf7 11 Kh4 Ke6 12 Kg3 Kd5 13 Kf2 f4 **14 Ke1**.

**75** 1 e4 Nc6 2 Ke2 Na5 3 Kf3 Nf6 4 e5 Nh5 5 Kg4 d5 **6 Kxh5** e6 7 Kg4 b6 8 Kf3 Nb7 9 Ke2 b5 **10 Ke1** Nd6 11 exd6.

**76** 1 d3 Nf6 2 Kd2 g5 **3 Ke3 Bh6** 4 Bd2 **0-0** 5 Be1 Kh8 **6 Bc3** Ng8 7 Bxh8 a5 8 Bc3 a4 9 Bd2 Nf6 **10 Bc1 Rh8** 11 Kd2 **Bf8** **12 Ke1**.

**Q v R zugzwangs** (see page 98). Transpositions may involve reflection or rotation.

Black to play (computer-generated analysis, longest lines only).

- 1 trivial.
- 2 1...Rc4 2 Qb3+ etc.
- 3 1...Ra4 2 Qb2+ Kc4 3 Kc2 etc.
- 4 1...Rd3 2 Qa4+ Kc3 3 Kc1 and we have 3.
- 5 1...Rc2 2 Qa4+ Rc4 3 Qd1+ (call this A) Kc3 4 Kc1 (call this B) Rb4 5 Qc2+ Kd4 6 Kd1 Rb3 7 Kd2 and 2.
- 6 1...Kd4 2 Ka2 Rc3 3 Qd1+ Rd3 4 Qa4+ and A.
- 7 1...Kb4 2 Kb2 Rb3+ 3 Ka2 Rc3 4 Qd2 Kc4 5 Qd1 Rd3 6 Qa4+ Kc3 7 Ka3 and B.
- 8 1...Rb2+ 2 Kc1 (call this C) Rb3

3 Qa1+ Kd3 4 Kd1 Rc3 5 Qb1+ Kc4 6 Kd2 Ra3 7 Qc1+ Kb4 8 Qb2+ Ka4 9 Qd4+ and A.

**9** 1...Rb3+ 2 Kc1 Rb2 3 Qa4 and C.

White to play (my analysis, selected lines).

**1** 1 Qa3+ Kc4 and **4**, or 1 Ka1 Rc2 with 2 Qa3+ Kc4 and **6**, or 2 Qb1 Kc3 (call this X) 3 Qd1 and White will get nowhere after either 3...Rb2 (call this Y) or 3...Rd2, or 2 Qd1+ Kc3 3 Qb1 (3 Kb1 Rb2+ 4 Kc1 Ra2) Rd2 4 Qc1+ Rc2 and so on.

**2** 1 Qb4 Rc1+ 2 Ka2 (2 Kb2 Rb1+) Rc2+ 3 Ka3 Rc3+ 4 Ka4 Kc2 and X, or 1 Ka1 Rc1+ etc.

**3** 1 Qd3+ Kb4 (call this Z) 2 Qd2+ (2 Qc2 Rb3+ 3 Ka2 Ra3+ 4 Kb2 Ra2+, 2 Qd1 Rb3+ etc) Kc4 and **4**.

**4** 1 Qa4+ Kc3 and **8**, or 1 Qc1+ Kd3 and **1**, or 1 Kc1 Rc4 and Z, or 1 Ka1 Rc2 and **6**.

**5** 1 Qa4+ Kc3 and **8**, or 1 Qb4+ Kd3 2 Qa3+ (2 Kc1 Rc2+ 3 Kb1/Kd1 Rc1+ etc, 2 Ka1 Rd1+ with 3 Ka2 Rc1 and 4 or 3 Kb2 Rb1+) Kc4 and **4**, or 1 Qa3 Kc4 and **4**, or 1 Kc1 Rc2+ 2 Kd1 Rd2+, or 1 Ka1 Rc2 2 Qa4+ (2 Qb4+ Kd3, 2 Qb1 Kc3 and X) Kc3 3 Kb1 Rd2 and **8**.

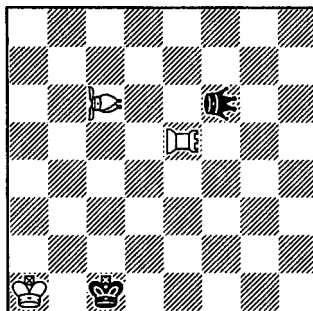
**6** 1 Qd1+ Kc3 2 Ka2 Rb4 and **8**, or 1 Ka2 Rb4 and **4**.

**7** 1 Qd1+ Kc3 and **9**, or 1 Qd2 Kc4 and **4**.

**8** 1 Qa3+ Kc4 and **4**, or 1 Qa1+ Kb3 2 Kc1 Rc2+ etc, or 1 Kc1 Rd3 and **3**, or 1 Ka1 Rb2 and Y.

**9** 1 Qc2+ Kb4 etc, or 1 Qc1+ Kb3 and **7**.

**C + A v M zugzwangs** (page 99). The other position is



White to play must allow a quick mate (1 Ka2 Mf2+ etc, 1 Ab8 Kc2 with threat 2...Mf1+ and 2 Ka2 Mg8+). Black to play is more difficult.

1...Kc2 2 Ad4+ Kd3 (else 3 R+ and 4 AxM) 3 Ab2+, and now 4 R+ and 5 AxM are inescapable.

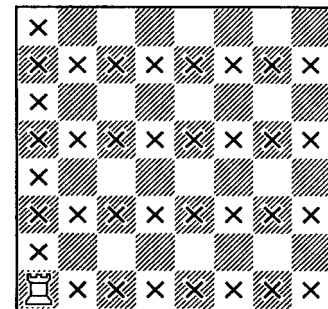
1...Kd2/Kd1 2 Af3+ Kc3/Kc1 (2...Kc2 3 Ad4+ etc as before) 3 Ae2+ Kd2 (3...Kc2 4 Ad4+, 3...Kb4/Kb3 equivalent by symmetry) 4 Ac4+ Kc2 (else 5 Ab2+ etc) 5 Ka2 threat 6 Ce2+ Kd1 7 Cb2+ Kc1/Ke1 8 Ad3 mate, and there is no good answer.

1...Mf1 (unpinning but threatening to discover check) 2 Ab5 (threat not just AxM but also 3 Ce2+ Kd1 4 Ac3 mate) Mf6 (what else?) 5 Ae2+ etc.

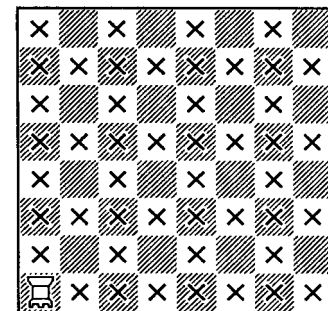
1...Mg7 2 Ka2 (threatening 3 Ce1+ Kd2 4 Aa5+/Ab4+) Mg8+ 3 Ad5 and Black will soon succumb.

1...Mh8 2 Af3 Mg7 (2...Mf6 3 Ae2+) 3 Ae2+ Kd2 4 Ac4+ Kc2 5 Ka2 Ma7+ 6 Aa5 threatening 7 Ce1 mate, and again no good answer.

**K + Z v K** (page 100). No, it doesn't. For a counterexample, let X be the piece which can leap to any square which is on its own rank or file or is an even number of ranks away,



and Y the equivalent with rank and file powers interchanged. K + X and K + Y win easily. Now consider a Z :



Black is stalemated, so White must move his Z to release the stalemate, Black moves to another square where he is stalemated afresh, and White never gets time to bring up his king.

## CONTENTS

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My apologies for the fact that the front pages of recent issues have continued to say "Volume 7". The matter has now been corrected.

**Cambodian Chess** (*VC* 55 pages 4-5). Peter Michaelsen tells me that Ivan Derzhanski has made a Zillions implementation of Cambodian Chess under the Hill rules. He reads the rule concerning the promotion of the fish thus: it moves and captures one square straight forward, but when it crosses the centre line it is reversed and thereafter moves *and captures* as a K.

"I think that this is not explicitly mentioned in any of the texts. Of course the promoted fish is much stronger, if it can both capture and move like a king. I had thought that it might still only be able to capture one square straight forward, despite being able to move one square in all directions. The elephant and official are very mobile, but can only capture forwards according to Okano Shin. I thought that the same might be the case with the promoted fish.

"It is possible that Derzhanski's interpretation results in a better game, but I would like to know, which of the two rule interpretations is correct."

## BCVS NOTICES

The **Annual General Meeting** will be held at **7 St James Road, Harpenden, at 1130 on Saturday 20 June**. UK members will find a formal notice with this issue of *VC*, and members abroad who happen to be in the UK on the day will be very welcome also.

As usual, the formal meeting will be followed by a light buffet lunch, and members will be welcome to stay on into the afternoon and play any games which may take their fancy. The kitchen will be helped by advance notice from those intending to come, but we'd rather see you without prior warning than not see you at all.

**E-mail problems.** Some e-mails sent to me recently have got through only tardily if at all. If you don't receive a reply to an e-mail within a reasonable time, something has probably gone wrong, so please send a repeat.

It also appears that some hacker has started sending out e-mails in my name offering to supply various goods and services at ridiculously low rates. I have yet to receive any orders as a result, and I think it is automatically assumed that such e-mails are bogus. Some people respond to this sort of thing by changing their e-mail address, but that would be a nuisance and I think my reputation will stand it. Or have my friends reflected that if I were genuinely marketing material of this nature, I would be charging much more realistic prices?

**VC 61** is scheduled for July. Copy date for contributions is **June 1**, but early receipt is always welcome.

## EVENTS

This year's **World Circular Chess Championship** will be held at the **Tap and Spile, Hungate, Lincoln, at 1030 on Sunday 14 June**. Contact Mike Sedgwick <mike@baraka-services.com> for details.

Peter Kelly tells me that this year's **World Quickplay Hnefatafl Tournament** will be played in the **Community Hall on Fetlar on Saturday 1 August** (over 60° North, long summer evenings). E-mail him as

<theglebel@btinternet.com>

for further details and a copy of the rules. "We have asked for details of accommodation on neighbouring islands so that all those interested in visiting either to compete or to watch can arrange somewhere to stay while they are here."

## ECV 2 FOOTNOTES

This heading has been refreshingly absent since *VC* 56, but a couple of further errors have come to light and should be noted.

**Free Programme Chess** (page 79). "Guraspavili" should have been "Guraspashvili".

As reported last time, **Ecila** (pages 234-5) actually dates from 1957 or earlier, and was played at least once though no score of the game appears to have survived (*The Birmingham Post*, 9 September 1957, quoted in issue 8 of *Abstract Games*).

**Variant Chess** is the journal of the **British Chess Variants Society**

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