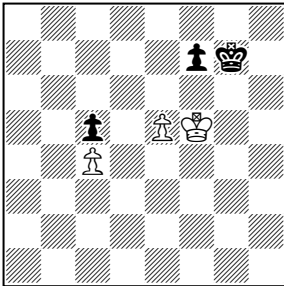


# Chapter 1

## Endgame studies

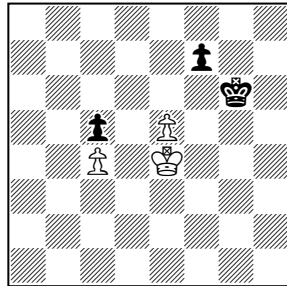
There are several ways of producing a chess endgame study: to work back from a predetermined final position and try to find a plausible starting position from which play naturally leads up to it, to analyse a naturally occurring position or set of positions and see what happens, to riffle through a pile of computer output and see if the machine has found anything interesting, or to spot something completely out of the blue, usually in a position which has been set on the board by someone else. Examples produced by each of these methods will appear in what follows.

1.1



White to play and win

1.1a



1 Ke4, after 1...Kg6

Let's start with something very simple. 1 e6 fxe6+ 2 Kxe6 and wins? Yes, but Black will play 1...Kf8, and after 2 exf7 Kxf7 he will meet White's eventual Kxc5 with ...Kc7 and draw; and if White tries 2 Kf6/Ke5 instead, we will have 2...fxe6 3 Kxe6 Ke8, and the result will be the same.

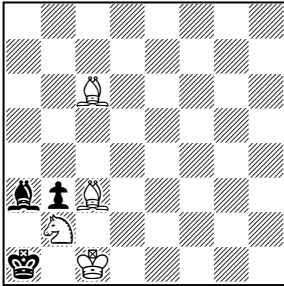
All right, try 1 Ke4: no, 1...Kg6 (see 1.1a) 2 Kd5 Kf5 3 Kxc5 Kxe5, and after 4 Kb6 f5 both sides will promote.

Hmm. The solution is actually 1 Kf4, and only if 1...Kg6 then 2 Ke4. This

gives 1.1a but with Black to play. If now 2...Kg5 then 3 e6! fxe6 4 Ke5, and White will win despite being temporarily a pawn down; Black's king is on precisely the wrong square (he could draw from either g6 or g4). Alternatively, 2...f6/f5+ 3 exf6 and 4-5 Kxc5, or 2...Kg7 3-4 Kxc5.

1.1a is in fact a position of reciprocal zugzwang, where Black to play loses but White to play cannot win. If to avoid it Black plays 1...f6, then 2 Kf5 etc; if 1...Kh6/Kh7 then again 2 e6.

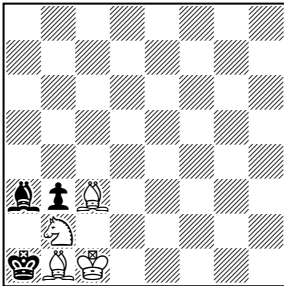
1.2



White to play and win

1.2 is a trifle of a different kind. White has a win on material, but Black threatens 1...Ka2 and 2...Bxb2+, after which the recapture will give stalemate. Hence 1 **Be4** Ka2 2 **Bb1+**, and after 2...Ka1 we have 1.2a :

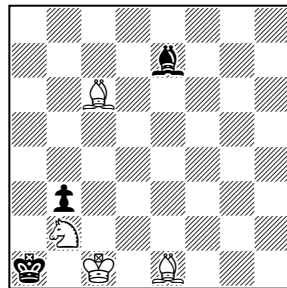
1.2a



After 2...Kb1

A waiting move will force Black's bishop to release the pin, but 2 Bd4 can be met by 2...Bc5 since 3 Bxc5 will give a second stalemate, and if 2 Be5, for 2...Bd6 3 Nc4+/Nd3+ Bxe5 4 Nxe5, Black has 4...b2+ with a third. The bishop must go all the way: 3 **Bh8!**

1.2 was composed to show the longest possible bishop retreat along a diagonal through the Black king, and illustrates the disadvantages of working back from a predetermined final position: this final position may be spectacular, but only limited lead-in play may be possible, and the starting position may be undesirably artificial. Can we do better? Not, I think, without adding extra material, and this would reduce whatever impact the study might have. To reach 1.2, Black might have played ...Ba3 to pin the White knight, but why did White leave it there to be pinned? Suppose we had a position like



intending 1 Bc3 Ba3 etc; yes, but White can untangle himself by 1 Na4 (1 Nc4 gives another alternative win), and if 1...Ba3+ 2 Kd1 b2 then 3 Bc3 and it is Black who is pinned.

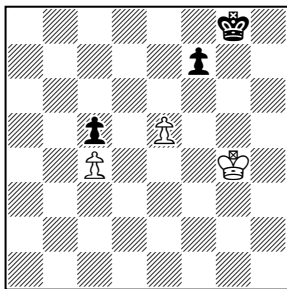
In short, it does not appear possible to provide more than a two-move introduction to 1.2a without resorting to captures or exchanges.

1.1, in contrast, was discovered by analysing a naturally occurring position. I was doodling around with the men, as one does, and suddenly

## 6 Fifty-one flights of chess fancy

noticed what I had put on the board. My immediate thought was that somebody must have discovered it before, but a search of Harold van der Heijden's "Endgame study database 2000" (subsequently confirmed by a search of his "Endgame study database III, which contains most of the endgame studies published up to 2005) failed to locate a predecessor, and a search of a database of a million games played to 1999 suggested that neither had it occurred in actual play.

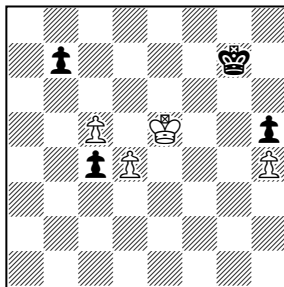
The latter is perhaps the more easily explained. What were the moves immediately preceding? Could we not have had a position such as



with Kf5 for White and ...Kg7 for Black? Yes, but Kf4 would have won more simply. Black would still have had to play ...Kg7, to meet Ke4 with ...Kg6, after which Kf5 gives **1.1** with Black to play and the win is easy.

**1.2a** is obviously somewhat artificial. **1.1** seems completely natural, but even to reach **1.1** either someone has just captured something or White's last move was an inferior one. But so what? It's still a pleasant little study.

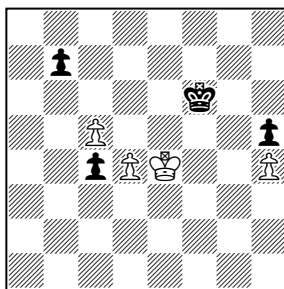
### 1.3



White to play and win

In **1.3**, White must try and catch the fleeing c-pawn. Try the obvious 1 Ke4: no, Black will reply 1...Kf6,

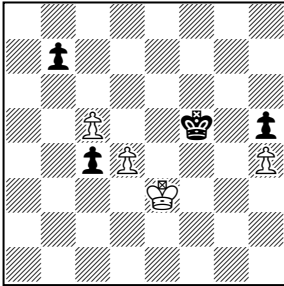
### 1.3a



1 Ke4, after 1...Kf6

and if 2 d5 then 2...c3 3 Kd3 Ke5 4 d6 Ke6 5 Kxc3 b6! and he will hold the draw (6 cxb6 Kxd6 7-8 Ke4 Kxb6 9-11 Kxh5 Ke7 12 Kg6 Kf8, or 6 Kc4 bxc5 7 Kxc5 Kd7 8 Kd5 Kd8 9 Ke6 Ke8 10-11 Kg6 Kxd6 12 Kxh5 Ke7 13 Kg6 Kf8). If instead 2 Kf4 then 2...Ke6 3 Ke4 (else 3...Kd5 wins for Black) Kf6 repeats the position, while 2 Ke3 Kf5 gives **1.3b**,

1.3b



Further 2 Ke3, after 2...Kf5

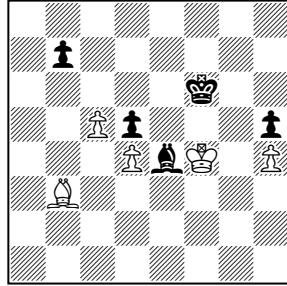
and an immediate 3 d5 is needed even to avoid defeat.

So 1 Ke4 doesn't work, and the move must be **1 Kf4**. If now **1...Kf6** then **2 Ke4** gives **1.3a** with Black to play, which is disastrous for him. The natural 2...Ke6 exposes his king to check, 3 d5+, so he has no time to play 3...c3, and after 3...K~ 4 Kd4 White will have time to capture Black's pawn and then come back to defend his own.

But Black needn't play 1...Kf6. He also has **1...Kg6**, after which 2 Ke4 can be met by 2...Kf6 and 2 Ke3 by 2...Kf5. All right, **2 Kf3**, passing the choice back to Black. 2...Kf6 is met by 3 Ke4 as we have seen (3 Ke2 also wins), while **2...Kf5** allows **3 Ke3** and this time it is **1.3b** that we have with Black to play (3...Ke6 4 Kd2 Kd5/K~ 5 Kc3, or 3...Kg4 4 d5).

So **1.3a** and **1.3b** are both reciprocal zugzwang. Experience has shown that while solvers soon spot the need for 1 Kf4, they tend to overlook that Black can set a second poser by playing 1...Kg6.

This little study grew from the position below,



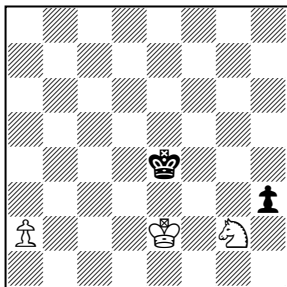
which occurred in a bishop-and-pawn study I quoted in *British Endgame Study News*. The composer's intended move was Ba2, but White can win more simply by playing Bc4, since ...dxc4 can be met by Kxe4 and we have **1.3a** with Black to play. Having noticed this, I realised that position **1.3a** was in fact reciprocal zugzwang, and all that remained was to find a way of exploiting it.

Here's a little constructional task. We all know that K + B + N can force a win against a bare king, but that K + B alone or K + N alone cannot. Now give the Black king some accompanying men, so that K + B + N can no longer force a win, but make the position such that if we remove either White's knight or his bishop, leaving him with K + B alone or K + N alone, he can now win. I call this the "Thomas à Becket" theme (bishop and knight are all very well on their own, but put them together and you get trouble).

Answer at the end of the chapter.

## 8 Fifty-one flights of chess fancy

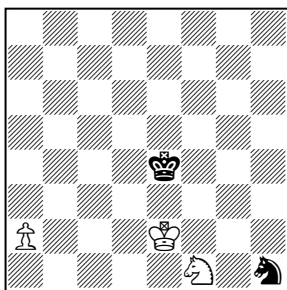
### 1.4 (“Festina lente!”)



White to play and win

White cannot stop Black’s pawn from promoting, but he can aim for f2 or g3 to threaten a fork, and the correct way turns out to be **1 Ne3 h2** (else the pawn will be stopped, say 1...Kd4 2 Kf3 h2 3 Nc2+ K~ 4 Kg2) **2 Nf1**. If Black now promotes to a queen, he is soon seen to lose (2...h1Q 3 Ng3+ Kd4 4 Nxf1 Kc3 5 Kd1 Kb4 6 Kc2 Ka3 7 Kb1), and the same happens if he plays 2...Kd4 and lets White take on h2. But he can make a knight, **2...h1N** :

#### 1.4a



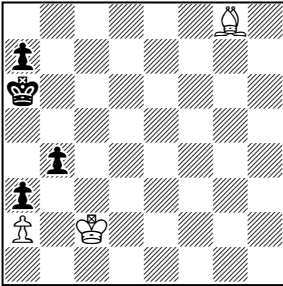
After 2...h1N

If White now runs his pawn by 3 a4, we

have 3...Kd4 4 Kf3 (to release the knight from the duty of guarding g3, but it is too late) Kc4 and the pawn will fall. White must make haste slowly: **3 a3!** If now 3...Kd4 then 4 Kf3 Kc4 5 Nd2+ and 6 Nb1 (or 5 Ne3+ and 6 Nc2 if preferred), and if 3...Kf4 then 4 a4 and White is a tempo ahead of the line 3 a4 (4...Ke4/Ke5 5 a5 Kd5/Kd6 6 Kf3 and 7-8 Nb3/Nc4). The name “Festina lente!” for compositions of this kind is due to Artur Mandler.

This was discovered by rummaging through computer output. If a position with a pawn on the third rank is reciprocal zugzwang, there is always a chance that the only winning move with the pawn on the second rank will be “pawn-one”. I therefore went through the computer-generated list of reciprocal zugzwangs with  $N + P \text{ v } N$  (all 4121 of them) which had appeared with issue 122 of the endgame study magazine *EG*, looking for positions with the pawn on the third rank, the Black knight on the bottom rank, and the White knight threatening the second-rank square above the Black knight and able to fork the Black knight and king (so that we could hope to force a knight promotion by Black in the previous play). This gave me a short list, and all that remained was to examine each in turn and to see which would allow suitable lead-in play. The famous problemist T. R. Dawson used to regard chess composition as scientific discovery rather than artistic creation, and the point could hardly be better exemplified.

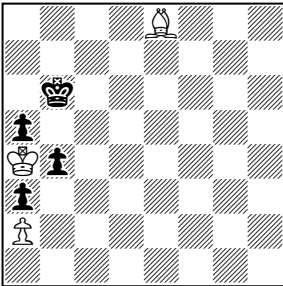
1.5



White to play and win

1 Kb3, obviously, and after 1...Kb5  
2 Bf7 (or should it be Be6?) a5 3 Be8+  
Kc5 4 Ka4 Kb6 we have **1.5a** and  
surely White's bishop will soon be able  
drive Black's king away from the pawn  
on a5?

1.5a

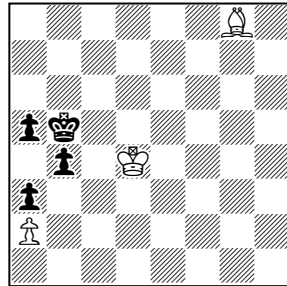


1 Kb3, after 4...Kb6

But it isn't so easy. 5 Bb5 Kc5, and if  
6 Kxa5?? then 6...b3 and it is Black  
who will win. Try 6 Bd3 Kb6 7 Bc4  
instead, when the bishop will prevent  
7...b3? Yes, but Black will have 7...Kc5  
attacking it, and again White will be  
unable to capture the pawn at a5.

There is in fact no win from **1.5a**,  
and the mistake was at move 1. White  
must ignore the siren lure of the pawn  
on b4, and play **1 Kd3 Kb5 2 Kd4** to  
keep the Black king out of c5. Now  
**2...a5** gives **1.5b**,

1.5b



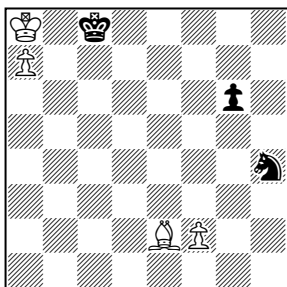
1 Kd3, after 2...a5

and how will White prevent ...a4 and  
...b3 taking off his last pawn? Ah,  
**3 Bc4+ Kb6** (3...Ka4 4 Kc5 and mate  
next move) **4 Bb3 Kb5 5 Ba4+**! with a  
well known but always attractive mate  
if Black captures the bishop (5...Kxa4  
6 Kc4 b3 7 axb3). If instead 5...Kb6  
then 6 Kc4/Kd5 with a routine win.

**1.5**, like **1.2**, was discovered by  
working back from a desired final  
position. The mate has been exploited  
many times since its first appearance in  
the 1840s, and the only part of the  
study which I can claim as original is  
the initial journey of the White king to  
keep the Black out of c5. However,  
experience has shown this to be quite  
deceptive, and there is a pretty finish to  
reward the solver who eventually finds  
the right answer.

## 10 Fifty-one flights of chess fancy

1.6 (by Wallace Ellison and myself)



White to play and hold the draw

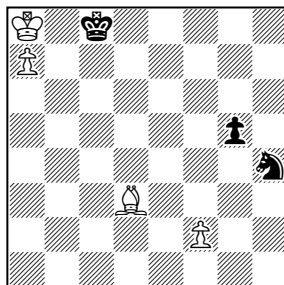
Without the pawns on g6 and f2, White would have an easy draw. He would check the Black king away from c8, forcing it to move to c7, and then play to keep the knight away from the squares giving on b6. But if Black can capture the f-pawn without losing his g-pawn, he will win. He will play to a square such as e5, forcing the White bishop to play to e6 or b5, and then make a tempo move with his pawn.

The natural opening move is 1 Bd3 – or should we throw in a check first, 1 Ba6+ Kc7 2 Bd3? No, Black will play 2...g5 with an eventual win; a best-play line is 3 Be4 g4 4 Bd3 Nf3 5 Bf5 Ne5 6 Be6 Nd3 (to meet 7 Bxg4 by 7...Nc5 and 8...Na4 or 8...Nd7) 7 Bd7 (now 7...Nc5 can be met by 8 Bb5/Be8, and 7...Nxf2 by 8 Bxg4) Nf4 (threatening 8...Nd5) 8 Bc6 Ng6 (aiming for c8, which cannot be prevented) 9 B~ Ne7 10 Be6/Bb7 Nc8 11 Bxc8 Kxc8 12 f4 g3 13-14 f6 g1Q 15 f7 Qg2 mate.

So we confirm **1 Bd3**, and the natural reply is **1...g5** (if instead 1...Kc7 then 2 f4, and Black's knight is tied to the

defence of his pawn). This gives **1.6a** :

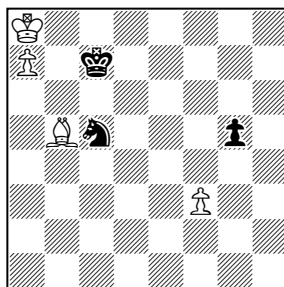
1.6a



After 1...g5

The natural move is 2 Be4 penning the knight, but Black can temporize by 2...Kc7, and after 3 f3 Ng2 we have 4 B~ Nf4 5 Be4 (as we shall see, if Black can reach e5 he will win, so White must guard d3/g6 as well as d5) Ne6 6 B~ Nc5 7 Bb5 (the same motif – White must defend d3 as well as a4/d7) and we have reached **1.6b** :

1.6b



2 Be4, after 7 Bb5

7...Kc8 (this tempo move has become possible because the knight guards the

squares from which the bishop might check) 8 Bc6 (nothing else is better) Nd3 9 Bb7+ (again nothing else is better) Kc7 10 B~ Ne5 (Black has attained his first objective) 11 Bb5/Be6 (White's first priority is to guard c4/d7, so he must leave his pawn to its fate) Nxf3 12 B~ Ne5 13 Bb5/Be6 g4 14 B~ Nc4/Nd7 and 15...Nb6 mate.

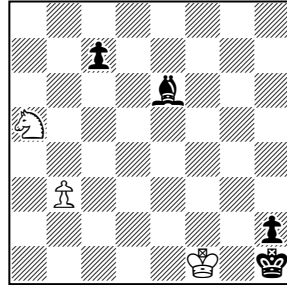
Letting the knight out by say 3 Bd3 is soon seen to be even worse, and 2 Be4 is in fact a losing move. Correct is the apparently absurd **2 f4!** throwing away the vital pawn. 2...g4 would allow 3 f5 with an easy draw (or 3 Bf5+ if White prefers, since 3...Nxf5 will be stalemate), so Black must take, **2...gxf4**, and now we play 3 Be4? No, 3...Kc7, and White must release the pressure. Correct is **3 Bf5+**, playable because the capture will again be stalemate, and only after **3...Kc7** do we at last play the penning move **4 Be4**. Now Black is helpless. 4...Kc8 will be met by 5 Bf5+ repeating the position we have just had, and **4...f3** allows **5 Bxf3** since the capture will once more give stalemate.

And if we now ask why 1 Ba6+ Kc7 2 Bd3 g5 cannot similarly be followed by 3 f4, since 3...gxf4 4 Be4 is drawn, the simpler answer is 3...g4 though 3...Ng2 also wins.

This is an example of "composition" by spotting something in a position which had actually been put on the board by somebody else. During 1995, Wallace Ellison was looking at endings with knight against bishop in which the knight needed to win a pawn. **1.6c** illustrates one of them. I no longer have

Wallace's original diagram, so this may not be the precise position that he sent me, but it reproduces the essentials.

1.6c



White to play and win (intended)

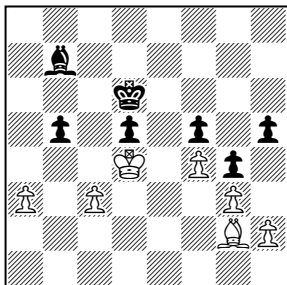
Wallace's intention was 1 b4 Bd5 2 Kf2 c6 3 Nb7 followed by the play we saw above with reversed colours (after 2 Be4 g5 3 f3 Ng2). This was a fine piece of analysis, typical of its originator, but then it occurred to me to wonder: after 1 b4, what happens if Black plays the utterly ridiculous move 1...c5? It draws, doesn't it? White cannot cope with a fleeing c-pawn, so he must play 2 bxc5, and Black draws by the play already seen.

This seemed too good to waste, so I reversed the colours to give **1.6**, in which the chance discovery has become the main line and Wallace's excellent analysis refutes the apparently natural move 2 Be4, and suggested that we publish it as a joint study. We sent it to a magazine in Eastern Europe and no solvers' comments reached us, but it has always had a good response when I have put it up in front of an audience.



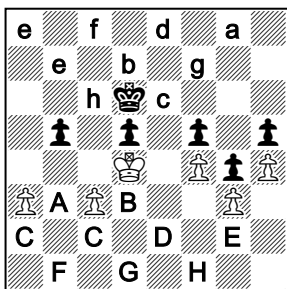
## 12 Fifty-one flights of chess fancy

### 1.7 (by J. N. Baxter, my version)



White to play and win

I set 1.7 in the *British Chess Magazine* with two questions: how does White win after 1 Bf1 Bc6 2 h4, and why does 1 h4 not work?



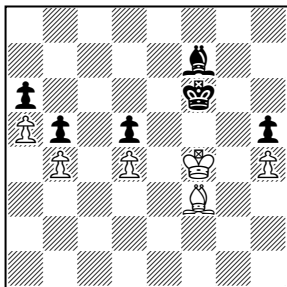
Take the latter first. Black can meet 1 h4 by the corresponding-square defence shown above (if White goes to A, Black goes to a, and so on), and he must start with 1...Ba8! since he is already on b7. If White plays to b3/c2/d1 and advances the a-pawn, Black, now on g8/e6/f7, can exchange and meet White's Bxa4 with ...Bf7 or ...Bg6. This keeps the White bishop from e8, and it soon becomes clear that White will get nowhere.

After 1 Bf1 Bc6 2 h4, the capture 2...gxh3 opens extra lines of attack for White, Black's bishop cannot play to c6 because it is already there, and 2...Bd7 is met by 3 Bd3 winning at once. This leaves 2...Be8, and a best-play line is 3 Be2 Bc6 4 Bd1! Bd7 5 Bb3 Be6 6 Bc2 Bc8 7 a4 bxa4 8 Bxa4. When we tried this before, the Black bishop was on e6/f7/g8, and he could play ...Bf7 or ...Bg6. With his bishop on e8, he cannot stop White penetrating to e8, and the rest will be easy.

If, after 1 Bf1 Bc6, White plays 2 h3 instead of 2 h4, 2...Be8 holds the draw. White can continue 3 hxg4 hxg4 4 Be2 and then play as before to get his bishop through to e8, but with no target on h5 there is nothing to be gained, and if instead 3 h4 then 3...Bc6 gives Black the draw already seen. If White plays 1 h3 in the initial position, 1...Bc6 draws. And if Black meets 1 Bf1 with 1...Ba6 instead of 1...Bc6, the answer is not 2 a4 "exploiting" the pin (when 2...bxa4 wins for Black) but 2 Bd3 etc.

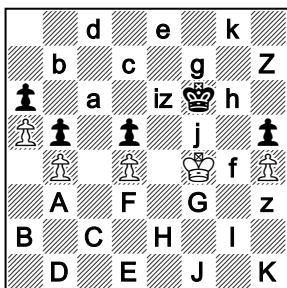
Baxter had the bishops already on f1 and c6, and the Pc3 on e3. The latter allowed 1 h4 Be8 2 Bd3 Bd7 3-4 Bb3 Bg8 5 Kc3 Kc5 (else 6 Kb4) 6 a4, when 6...bxa4 loses and 6...b4+ gives White an outside passed pawn with all the initiative and perhaps an unwanted win. 1.7 removes this unclear line (now, if White's king leaves d4, Black can play his bishop to d7/h7/g6 and only then his king to c5, and the draw is not difficult to show) and adds the elegant refutation 1 h4 Ba8, and though it is only "Baxter, version JDB" I thought it worth doing.

1.8



Can White win *without* first withdrawing his king?

1.8 is another corresponding-square bishop-and-pawn study. Can White outmanoeuvre Black just by making bishop moves?



In fact he cannot, and the diagram above shows why not. If Black makes the slightest slip, he loses; for example, 1 Be2 Be8? 2 Bd3 (threat 3 Bf5) Bd7 3 Bc2 Bg4 (else 4 Bd1 at once) 4 Bb3 Be6 5 Bd1 Bf7 6 Bf3, and we are back at 1.8 but with Black to play. However, if Black answers every White bishop move by playing his own to a square with the corresponding lower-case letter, White can never make progress.

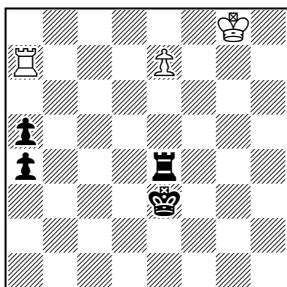
But what a curious set of corresponding squares! Usually, such squares satisfy a simple shift-and-reflect geometrical relationship, but here we don't just have one or two exceptional pairs, we have two distinct subsets. Squares **Aa-Ee** are an *odd* number of files and ranks apart, and can be displaced by one file and then reflected top-to-bottom into each other. Squares **Gg-Jj** are an *even* number of files and ranks apart, and can be displaced by four ranks and then reflected side-to-side into each other. And there are two further pairs, **Ff** and **Kk**, which are an odd number of files and ranks apart but do not satisfy the shift-and-reflect relationship of **Aa-Ee**.

Normally, two incompatible subsets such as **Aa-Ee** and **Gg-Jj** could not co-exist, because the attacker would simply move from one to the other and the defender would be unable to follow suit. But here, the only moves that Black cannot match are **F-H** and **H-F**, and he doesn't need to; if White moves from **F** to **H** or from **H** to **F**, Black doesn't lament his inability to play **f-h** or **h-f**, he simply takes the bishop.

White can win by a temporary king withdrawal, say 1 Bd1 Be8 2 Bb3 Bc6 3 Kf3, with perhaps 3...Kf5 4 Bc2+ Kf6 5 Ke3 Be8 (5...Bd7 6 Kf4) 6 Bb3 Bc6/Bf7 7 Kf4 or 3...Kf7 4 Bd1 Be8 5 Be2 Kf6 6 Bf1 Bd7 7 Bg2 Bf5/Bg4+ (7...Be6 8 Kf4) 8 Ke3 Be6 9 Kf4. But this is routine, and not particularly tidy; it is only the demonstration that he cannot outmanoeuvre Black by bishop moves alone that is at all elegant.

## 14 Fifty-one flights of chess fancy

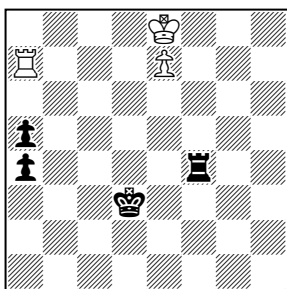
### 1.9 (after Artur Mandler)



White to play and win

The White king will have to hide on e8 sooner or later, but if he goes there straight away, 1 Kf8 Rf4+ 2 Ke8, Black will play 2...Kd3 to bring his own king nearer to his pawns :

### 1.9a



1 Kf8, after 2...Kd3

If now 3 Kd7 then 3...Rd4+, and if further 4 Ke6 then 4...Re4+ and even 5...Rxe7 is enough to draw; if 3 Kd8 then 3...Re4, and if further 4 Rxa5 Kc3/Kc2 5 Rxa4 then 5...Rxa4 6 e8Q Ra8+; and if 3 Rxa5 then 3...Kc2 4 Kd7 Rd4+ 5 Ke6 Re4+ 6 Re5 Rxe5+ 7 Kxe5 a3 8 e8Q a2 draws (but not 3...Kc3,

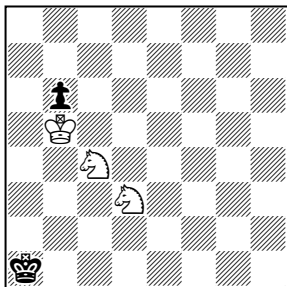
when White could now win by 9 Kd5 since 9...a1Q would allow 10 Qh8+).

So White must think of something else, and the answer is **1 Kf7 Rf4+ 2 Ke6! Re4+ 3 Kd7 Rd4+ 4 Ke8**, going right round his pawn and reaching e8 from the left. Now **4...Kd3** gives **1.9a** with the Black rook on d4 instead of f4, and White can play **5 Rd7** pinning it and exchanging it off: **5...a3 6 Rxd4+ Kxd4 7 Kd7** (say) **a2 8 e8Q a1Q 9 Qh8+**. If instead 4...Re4 or 4...Ke2 then 5 Rxa5 and 6 Kf7, with a shelter for the king after 6...Rf4+ 7 Ke6 Re4+ 8 Re5; if 4...Rd5 then 5 Kf7 Rf5+ 6 Ke6, and even playing to take off the new queen will not help (6...Ke4 7 e8Q Re5+ 8 Kd7/Kf7 Rxe8 9 Kxe8 and 10 Rxa5).

This was a spin-off from my translation of Mandler's book *Studie*. I was analysing one of his studies by computer, and a sideline came down to **1.9** with the White king on e6 instead of g8. I expected the computer to play Kd7 or Kf7 indifferently, and was very surprised to see that it had a strong preference for Kd7. But examination soon showed why, and then it was just a matter of adding the little king walk to highlight the distinction.

The fact that each of White's attempts to win from **1.9a** demands a different refutation (3 Kd7 Rd4+, 3 Kd8 Re4, 3 Rxa5 Kc2) is a definite bonus (and a nightmare for solvers). Usually, a composer has to go to a great deal of trouble to achieve such a thing. Here, it turned up completely by accident.

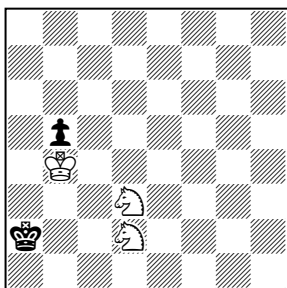
1.10



White to play and win

In my experience, **1.10** goes particularly well when shown to a group. I start by saying that White must keep Black's king pinned in the corner, and that if Black can step on to the b-file even once there will be no win. At this point, someone normally suggests 1 Nd2, and I promptly play it on the board. Black replies 1...Ka2, but if White advances, 2 Kb4, Black plays 2...b5 and White has no good move :

1.10a



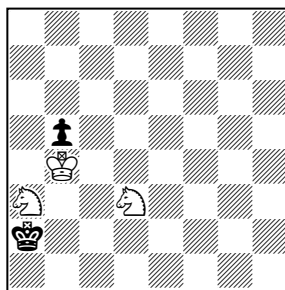
After 1 Nd2 Ka2 2 Kb4 b5

All right, so we lose a move, 2 Ka4! b5+ 3 Kb4, and we have **1.10a** with

Black to play. He retreats, 3...Ka1, but if White follows down by 4 Kb3 Black will play 4...b4 again leaving White no good move, and if he repeats the lose-a-move manoeuvre he gives stalemate. Can we sacrifice one knight on the a-file, and mate with the other? It sounds promising, but cannot be made to work.

At this point, somebody normally asks if 1 Nd2 was the correct move, and I come clean: no, it wasn't. Correct is **1 Na3**; we do indeed sacrifice a knight on the a-file, but we have to put it there at move 1. Play continues **1...Ka2 2 Ka4** (we still need to lose a move), and if 2...Ka1 then 3 Kb3 b5 4 Ne1 b4 5 Nc2 mate. Hence **2...b5+ 3 Kb4** :

1.10b



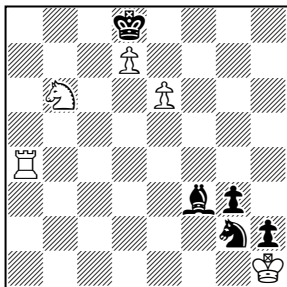
1 Na3, after 3 Kb4

Now everything works: **3...Ka1 4 Kb3 b4 5 Nc1 bxa3 6 Kc2 a2 7 Nb3 mate.**

This was another study obtained by looking through a computer-produced list of reciprocal zugzwangs in *EG*. It gave me **1.10b**, and the rest was easy. Both losing a move and sacrificing on the a-file had been done before, but I think the combination was new.

## 16 Fifty-one flights of chess fancy

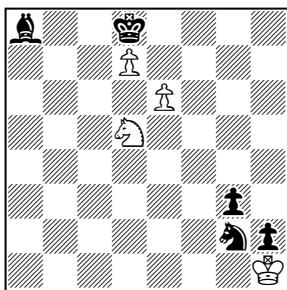
### 1.11 (version by Christopher Jones)



White to play and hold the draw

1 Ra3 will be met by the shut-off mate 1...Ne3, and the only way to avoid immediate disaster is **1 Ra8+ Bxa8** **2 Nd5** (not 2 Nxa8, when Black simply plays his knight round to f2). This gives **1.11a**, which is trickier than it seems :

1.11a

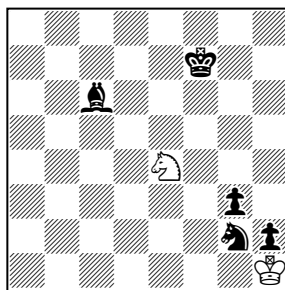


After 2 Nd5

If Black now plays 2...Bxd5, White will sacrifice his pawns for stalemate, and if he moves his knight he pins the White knight and again White will sacrifice. This leaves the bishop, and **2...Bc6** is slightly the better move because it makes White play precisely at move 4.

A plausible try is now 3 Nb4 attacking the bishop, since 3...B~ 4 Nc6+ Bxc6 will again allow White to sacrifice for stalemate, but Black has 3...Bxd7 and he just wins (4 exd7 Ne3 5 Nc6+ Kxd7 6 Ne5+ Ke6 7 Nf3 Kd5 8 Nxh2 Ke4 9 Kg1 Kf4 with 10 Kh1 g2+ 11 Kg1 Kg3 or 10 Nf1 Nxf1 11 Kxf1 Kf3). Instead, **3 e7+ Kxd7** **4 e8Q+** (not 4 Nf6+, when Black can play 4...Ke6 leaving the bishop to control e8 and again he just wins, 5 Ne4 Ne3 6 e8Q+ Bxe8 7 Nxc3 Ng4 8 Kg2 Bc6+ 9 Kh3 Bf3 10 Kh4 Nf2 or 5 e8Q+ Bxe8 6 Nxe8 Nf4 7 Nc7+/Ng7+ Ke5 8 Nb5/Ne8 Nd3 and 9...Nf2) **Kxe8** **5 Nf6+ K~** **6 Ne4** and we have **1.11b** :

1.11b



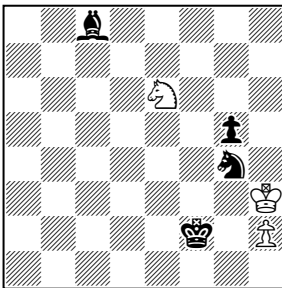
After 5...Kf7 6 Ne4

Again, a capture or a knight move gives stalemate, and now anything else allows Nxc3 followed by Kxh2.

I originally had a White pawn on a7 instead of the rook. Christopher Jones subsequently suggested using a rook, and it seemed to me to be rather a good idea.

1.11, like 1.2 and 1.5, was composed by working back from a predetermined final position, and even more than 1.2 it shows the disadvantage of this method: the starting position is unpleasantly artificial, whether it is set with an a-pawn or with a rook. Sadly, we cannot make it even slightly less artificial by putting the pawn on a6 and moving the bishop back to d1, intending 1 a7 Bf3 etc, because there will be an unwanted alternative solution by 1 e7+ Kxe7 2 Nd5+ Kxd7 3 a7 Bf3 4 Nf6+ K~ 5 a8Q Bxa8 6 Ne4.

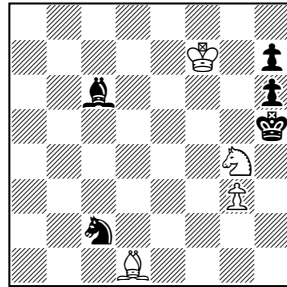
Coming back to the study some years later, and trying to find a better setting, I looked at this Black-to-play position, where White's king is away from the corner :



Fortunately I spotted the flaw before I had wasted too much time: Black has ...Nxh2 releasing the stalemate. Then a further point occurred to me: if h1 were blocked, Black could follow White's Kxh2 by ...g4, White's knight would have to move, and ...g3 would be mate.

This seemed too good to waste, so I reversed the colours, and a little more work produced 1.12 :

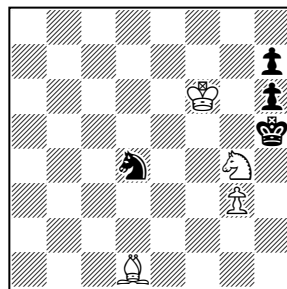
1.12



White to play and win

White can easily win a piece (1 Ne5+ and 2 Nxc6, 1 Ne3+ and 2 Nxc2, 1 N~ and 2 Bxc2), but none of these wins the game and correct is **1 Kf6** threatening mate in two. Black's only defence is to adopt White's tactic in 1.11, leading to **1...Bf3 2 Bxf3 Nd4 3 Bd1** :

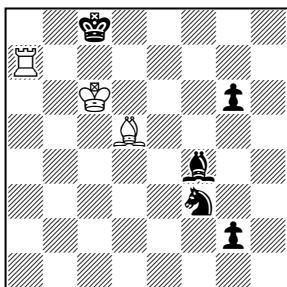
1.12a



After 3...Bd1

If now 3...Nf3 then 4 Kf5 Nd4+ 5 Ke5, and if the knight runs to safety on say c6 then 6 Kf6 forces mate; if **3...Ne2** attacking g3 then **4 Nxh6** (4 Bxe2 stalemate, 4 N~ stalemate) **Kxh6 5 g4** (5 Bxe2 again stalemate) **N~ 6 g5 mate**.

1.13



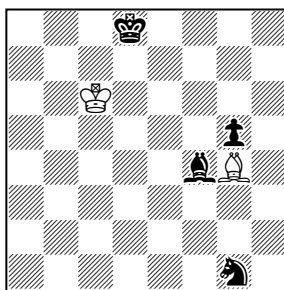
White to play and hold the draw

In 1994, I was invited by the French hosts to be director of that year's World Chess Solving Championship. The WCSC is essentially a problem-solving event, but it has always included a token round of endgame studies, and I had the task of finding three original studies which were sufficiently difficult to challenge the world's leading solvers yet sufficiently clear-cut to avoid arguments as to which side variations had to be written out and how far along the solver had to write them. In the event, I had to compose two of these studies myself. One was merely a variation on study 1.17 below, and was included only because I had a proof of soundness by computer (forced mate at the end of the main line and after all alternative moves by Black, perpetual check by Black if White played a wrong move at any time). The other was 1.13.

Try 1 Ra1 g1Q 2 Rxc1 Nxc1 3 Be6+ Kd8 4 Bg4 shutting in the knight: yes, but Black will bring his king down to g5 and rescue it. We can improve on

this by 3 Be4 provoking 3...g5, after which 4 Bf5+ Kd8 5 Bg4 gives 1.13a, a drawing position previously exploited by Gurvich :

1.13a



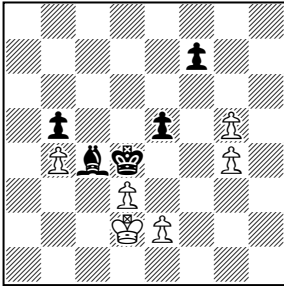
1 Ra1, after 4...Kd8 5 Bg4

White can now patrol the diagonal b7-e4 with his king, controlling c7/d6/e5 and so keeping Black's king penned in the top right-hand corner, and Black's bishop can do nothing on its own. Unfortunately Black can play 4...Kb8 instead of 4...Kd8, after which he will gradually bring his king down the board and extricate his knight.

So the solution is **1 Ra8+** forcing Black to block b8, **1...Bb8**, and now everything works: **2 Ra1 g1Q 3 Rxc1 Nxc1 4 Be4** (not 4 Bf7, when 4...Nf3 5 Bxc6 Ne5+ wins) **g5 5 Bf4+ Kd8** (no choice now) **6 Bg4** and again we have the Gurvich draw.

Sadly, I was told after the event that solvers had played 1 Ra8+ almost automatically, to drag the bishop away from its central location, and so my carefully constructed logic attracted very little attention.

1.14

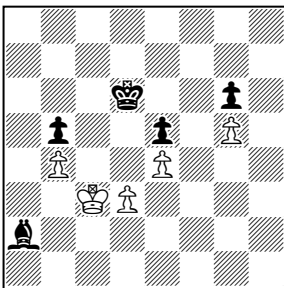


White to play and hold the draw

Almost the exact opposite happened with **1.14**. This was my contribution to the 1996 WCSC, when the director was Brian Stephenson.

1 dxc4 Kxc4 is clearly hopeless, so 1 e3+ Kd5 is almost automatic, and now 2 Kc3 Ba2 seems promising: ah yes, 3 g6 fxc6 4 e4+ K~ 5 g5, after which the Black king is shut out and all White has to do is to keep his king in contact with d3 :

1.14a

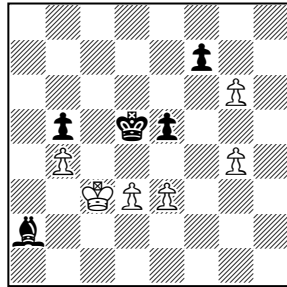


Black cannot win

But wait a minute: isn't 2 g6 fxc6 3 Kc3 Ba2 4 e4+ etc just as good?

Indeed it is, and in fact it is better, because after 2 Kc3 Ba2 3 g6 we have **1.14b**,

1.14b



After 2 Kc3 Ba2 3 g6

and Black doesn't have to play 3...fxg6; he can win by 3...Kd6 (4 g7 f6 etc). This option is not available after 2 g6, because the bishop is still under attack.

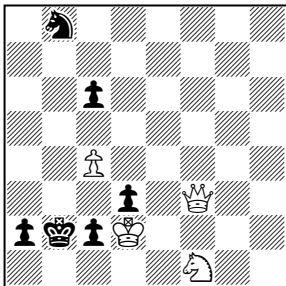
So the correct solution is **1 e3+ Kd5 2 g6 fxc6 3 Kc3 Ba2 4 e4+ K~ 5 g5**.

**1.13** had a deliberately constructed logical sequence, which in practice everybody short-circuited. In **1.14**, the placing of the Black bishop on c4 to force 2 g6 rather than 2 Kc3 was merely a constructional device to avoid a dual, and was not intended to fool anyone at all; yet while the great majority of solvers found their way through to the correct final position, more than half of them lost points by wrongly playing 2 Kc3.

The immediate inspiration for **1.14** was the study by Tronov which is in *Endgame Magic*, but the idea occurs in several studies and even crops up from time to time over the board.



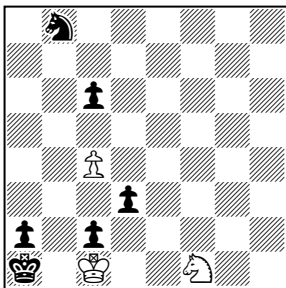
1.15



White to play and win

Play in 1.15 starts **1 Qf6+ Kb1 2 Qa1+ Kxa1 3 Kc1**, which is hackneyed but avoids starting with the king trapped in the corner, and we have **1.15a**,

1.15a

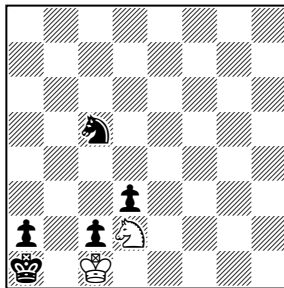


After 3 Kc1

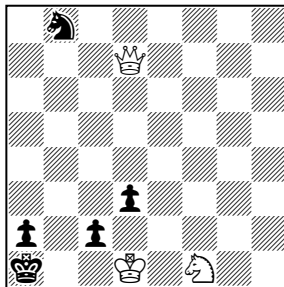
where Black must play **3...Nd7/Na6** to avoid mate on b3.

If White now plays **4 Nd2** still aiming for b3, Black will reply **4...Nc5**, and it is White who will be mated. White must insert **4 c5**, and after **4...Nxc5 5 Nd2** everything works. If instead **4...d2+** then **5 Nxd2 Nxc5 6 Kxc2** and again mate next move.

This was based on what we might call an “ultimate reciprocal zugzwang”

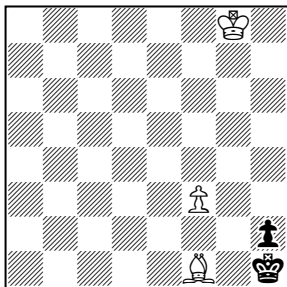


where whoever is to move must allow mate in one. It may be asked if we cannot reach this in both “right” and “wrong” lines without the extra pawns. All I can say is that I cannot achieve it. Suppose, utterly crudely, that we set



intending **1 Kc1? Nxd7 2 Nd2 Nc5** and **1 Kd2! Nxd7 2 Kc1 Nc5 3 Nd2**. Firstly, this can have no history, since Black’s last move was a bad one (if **...c3-c2+**, **...Nxd7** would have won, if **...b3xc2+**, **...d3xc2+** would have won). Secondly, it isn’t sound anyway, because **1 Kd2 c1Q+!** wins for Black. So the tempo must be lost earlier in the play, and I cannot come within a mile of success.

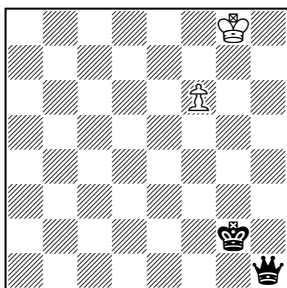
1.16



White to play and hold the draw

1.16 was my first published study, and appeared in print with a couple of moves of crude introduction which nowadays I would omit. **1 f4 Kg1** is obvious, but the next move is not the natural **2 f5**, when **2...h1Q** wins for Black (in those pre-computer days, satisfying myself that he won after **3 f6 Qa8+ 4 Kg7 Qa1** took me a month) but **2 Bg2**. Black must capture, **2...Kxg2**, and now **3 f5 h1Q 4 f6** gives 1.16a,

1.16a

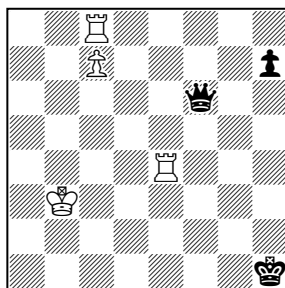


After 4 f6

and White cannot be prevented from advancing his pawn to f7.

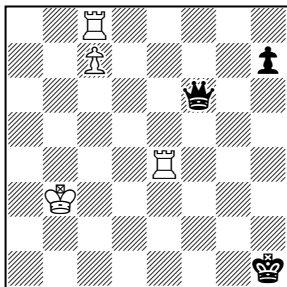
This wasn't too bad for a first attempt at study composition, though of course it was outclassed by a famous study by H. F. L. Meyer (*Chess Player's Chronicle* 1885, White Ke7, Bh8, Pf2 (3), Black Kc4, Pd3 (2), draw by **1 Bc3! Kxc3 2-3 f5 d1Q 4 f6 Qe1+/Qe2+ 5 Kf8!**). I was inspired by a remark remembered from one of the little Bonham and Wormald *Chess Questions Answered* books, that there were positions where a bishop's pawn even on the sixth rank could draw against a queen because the attacker had neither check nor pin. I no longer had the book, but memory suggested 1.16a as a possible position, and you can imagine my delight when I found I could lure the Black king to his unfortunate square by means of a sacrifice.

At this point, readers may care to look at the position below before turning the page. White is trying to win.



This was my second study, and appeared with a note that a solver who had not promoted White's pawn within seven moves was on the wrong track.

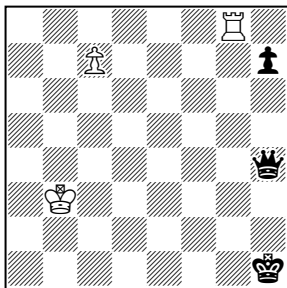
1.17



White to play and win

The reason that a study like 1.17 is difficult is that the opening sacrifice seems pointless, and not until the solver spots the quiet move that follows does he realise its purpose: **1 Rh4+ Qxh4 2 Rg8!** This gives 1.17a,

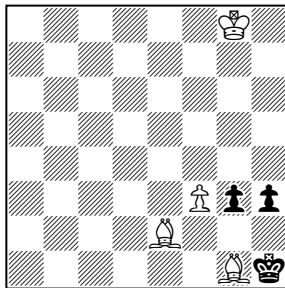
1.17a



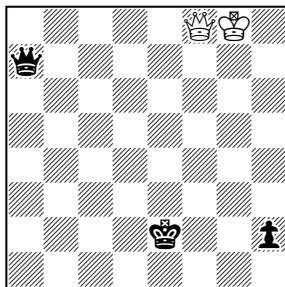
After 2 Rg8

and the rest is automatic: **2...Qh3+** (Black has no other check) **3 Kb4** (as long as White keeps to the b-file, Black will have no check in the middle of the board) **Qh4+** **4 Kb5 Qh5+** **5 Kb6 Qh6+** **6 Kb7**, and now Black has no check at all.

This was a spin-off from attempts to provide an introduction to 1.16. I set up



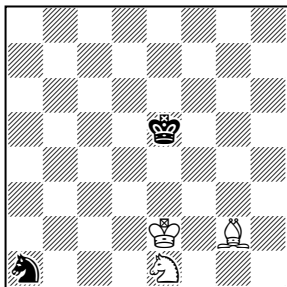
intending 1 Bf1 h2 2 Bxh2 gxh2 etc. This turned out to allow unwanted alternative solutions and today I would think it undesirable anyway, but for some reason the line I looked at first was 1 f4 Kxg1 2 f5 Kf2 3 f6 Kxe2 4-5 f8Q g1Q+ 6 Kh7 Qa7+ 7 Kg8 h2 :



White has only 8 Qe8+, and Black will escape after either 8...Kf2 9 Qf8+ Kg2 or 8...Kd2 9 Qd8+ Kc2 10 Qc8+ Kb2.

1.17, like 1.16, was outclassed by others (there is a famous Mitrofanov study where a White Ka5 is checked by a Black Qh5, and White sacrifices his own queen on g5 so as to hide his king on a6), but I still have a soft spot for it.

1.18

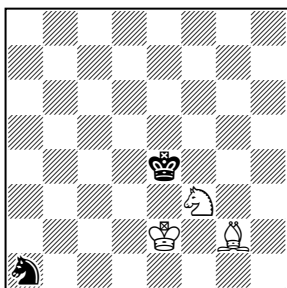


White to play and win

1.4 and 1.10 were discovered by rummaging through computer output. For 1.18, I got the computer to do its own rummaging.

Play starts 1 Nf3+, and if the Black king does not stay in contact with d4 White will play 2 Nd4 and shut in the Black knight. If 1...Kd5 then 2 Kd3 (2...Nb3 3 Nd2+/Nd4+), which leaves 1...Ke4 :

1.18a



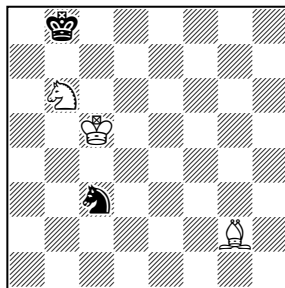
After 1...Ke4

Further checks fail, as does 2 Kd2, and the only move to make progress is 2 Bh1. A knight move now loses to

a discovered check, 2...Kd5 allows 3 Kd3, and other moves allow 3 Nd4 with Kd3 and Kc3 to follow (a best-play line is 2...Kf4 3 Nd4 Ke5 4 Kd3 Kd6 5 Kc3 Kc5 6 Ne2 K~ 7 Kb2).

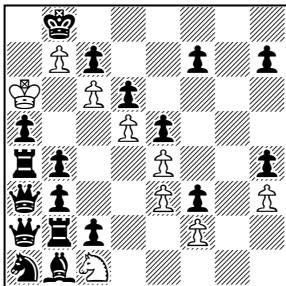
And how was it discovered? I had downloaded Rafael Andrist's database-mining program Wilhelm for review in *British Endgame Study News*, and to see what it could do I asked it to search for positions with  $K + B + N \checkmark K + N$  where the only move to win was Bg2-h1. Excluding captures and retreats from immediate danger, it gave me nine such positions, of which 1.18a was one of the simplest.

Some of the others were extremely complicated. The most remarkable was perhaps



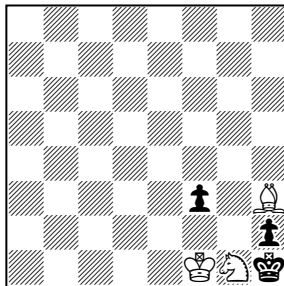
where the entire long diagonal is open and Bf3 seems a much more plausible move; but the position after Bf3 and ...Kc7 is reciprocal zugzwang, so 1 Bf3 Kc7 fails whereas 1 Bh1 Kc7 2 Bf3 succeeds. But if Black plays 1...Ka7 he can delay the capture of the knight until move 31, and I have not looked at the details. This is merely a curiosity; 1.18a leads to a charming little study.

**1.19** (Richard Gare de Lyon)



White to play and win

**1.20** (Thomas à Becket)



White cannot win, but...

Two medieval jokes to finish the chapter. **1.19** was dedicated to the memory of the crusading king who was so nicknamed because he was always popping off to the Mediterranean. White can lose a move only in the h1 corner, so **1-17 Ka6 f6** (say) **18-34 Ka6 h6 35-51 Ka6 h5 52-68 Ka6 f5** (no choice now) **69 exf5** and mate at move 75. Illegal position, of course; Black must have started with twelve pawns.

**1.20** answers the constructional task which we saw earlier in the chapter. As set, White cannot win, and must give stalemate by **Nxf3** if he is even to avoid losing; but take away either the knight or the bishop, and he has a mate in two. If the multiple mates in two with the bishop are thought undesirable, the addition of an extra pawn on f4 would remove them, but there seems little point and I prefer it as it is.