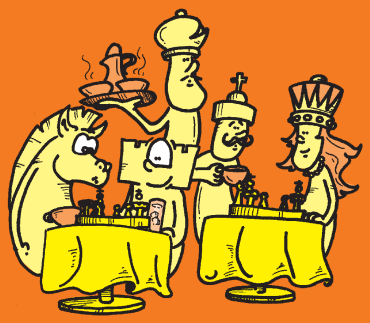


# THE PUZZLING SIDE OF CHESS

**Jeff Coakley**

## CHESS MYSTERIES IN A RETRO WORLD

number 30 March 30, 2013

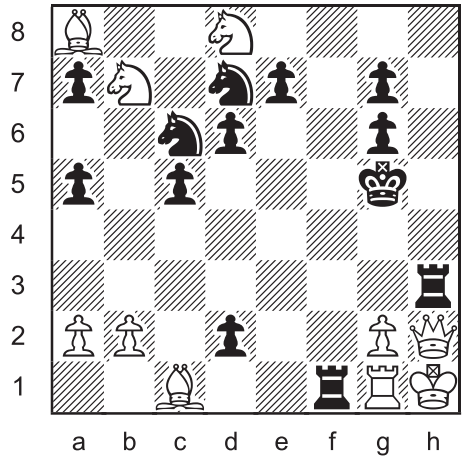
*Retrograde analysis* is the art of backwards thinking. By examining details of the present situation, we deduce past events.

There are various kinds of chess problems that involve retro thinking. The most common task is to determine the moves which led to a given position. The simplest case is to figure out which move was just played.

When answering the question “What was the last move?”, the solver must be as precise as possible. A complete description of a move includes the square a piece moved from, whether a capture was made, and if so, what type of piece was taken.

The following puzzle, from nearly thirty years ago, was my first attempt at composing a retro problem. It’s not especially good, but it does demonstrate some of the typical aspects of retrograde analysis.

**Retro 1**

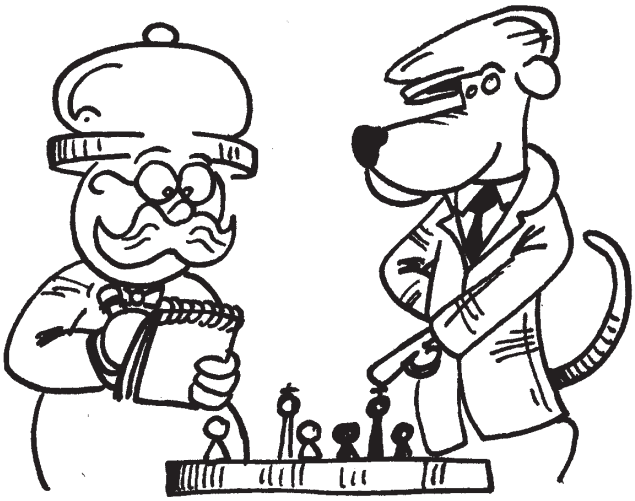



Black to play
What was White’s last move?

Solutions are given in long algebraic notation (departure and destination squares). When possible, if there was a capture, the type of piece taken is also indicated (in parentheses).

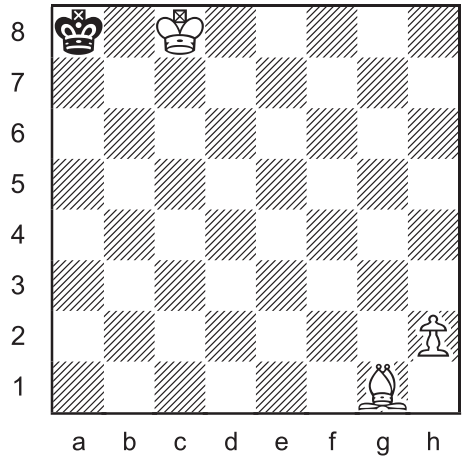
Assume that the puzzle positions are legal, even if the piece placement is strange. A chess position is legal if it could be reached in a game played with normal rules. Strategy is not a requirement.

For other types of retro problems, see the archives: column 21 (puzzle 8, mate in 2), column 26 (illegal positions), column 29 (proof games).



Like many people, my introduction to retrograde analysis came from two books by Raymond Smullyan, an American chess composer and professor of mathematical logic, born in New York in 1919. The next puzzle was on the cover of *The Chess Mysteries of Sherlock Holmes* (1979).

**Retro 2**

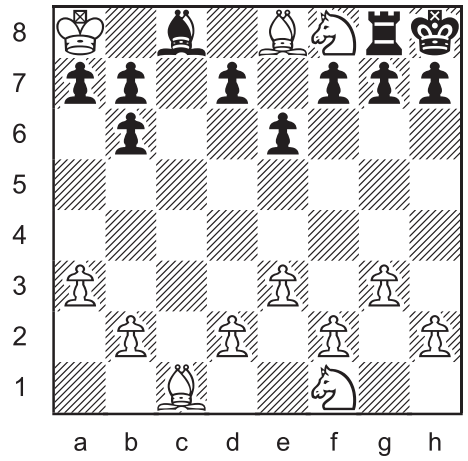



White to play
What were the last two moves?
(one black, one white)

In *last move* problems, moves are counted separately for White and Black. For example, “last eight moves” would mean four turns by each side.

In the previous positions, we were told whose turn it is. But in many retro problems, figuring out who’s to play is part of the puzzle.

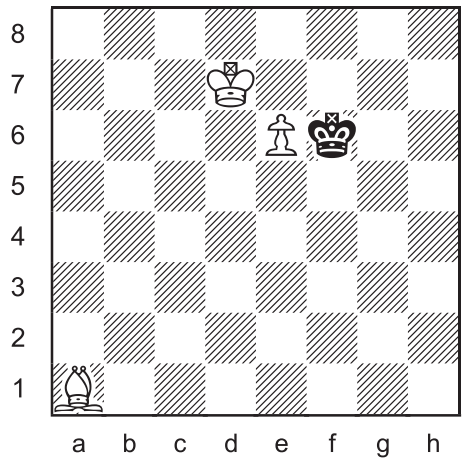
**Retro 3**




What were the last two moves?

Of course, determining which side just moved is easy when one of the kings is in check. The well known position below is by Danish composer Niels Høeg (1876-1951), a pioneer in the field of retrograde analysis. Can you explain the check from the bishop on a1?

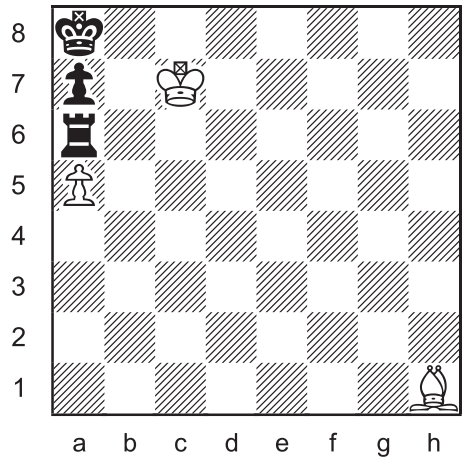
**Retro 4**




What were the last three moves?

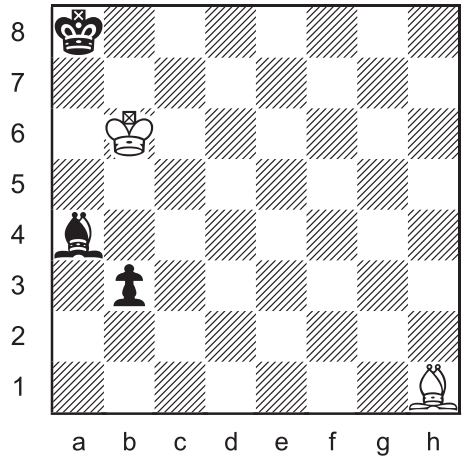
The next three problems share a common theme. The first two are by Croatian retro expert Branko Pavlovic (1906-1980).

## Retro 5



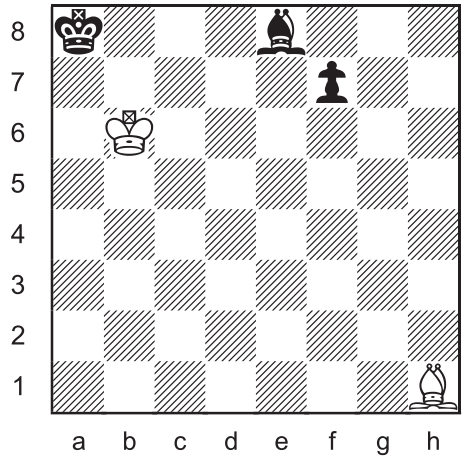
What were the last two moves?

## Retro 6



What were the last two moves?

## Retro 7

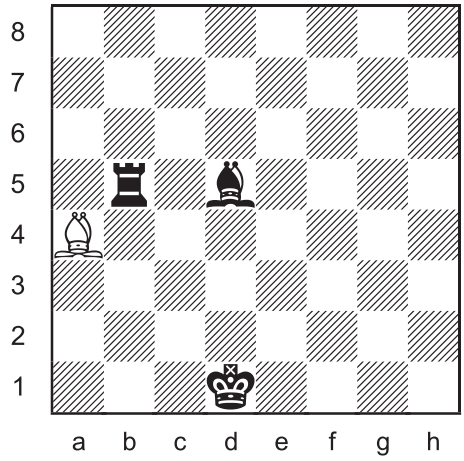


What were the last two moves?

The following position is the most famous retrograde puzzle of all time. It adorns the cover of *The Chess Mysteries of the Arabian Knights* (1981), the second “chess detective” book by Raymond Smullyan.

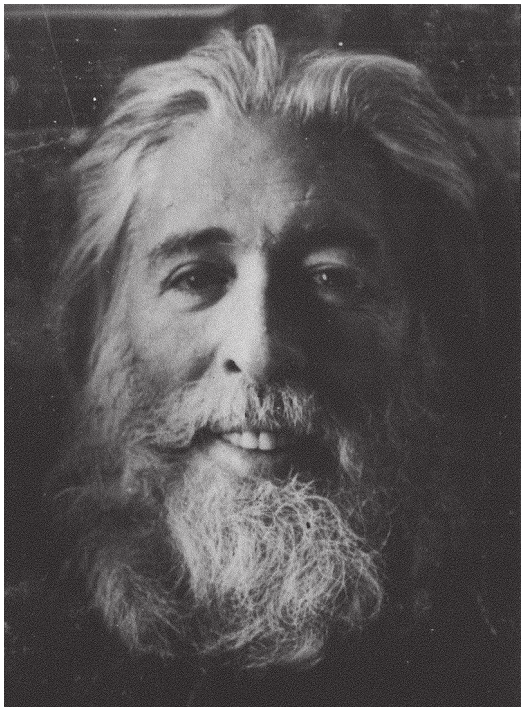
The problem is often shown with the white king already on the board, but it is given here as originally presented by Professor Smullyan.

## Retro 8




The white king has made himself invisible!
Where is he? What were the last three moves?

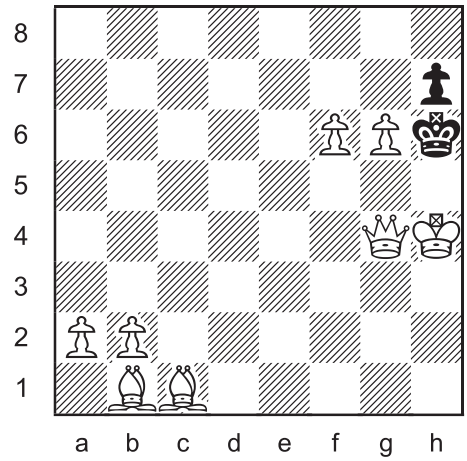
In other words, place the white king on the board so that the position is legal, and determine the last three moves.



Raymond Smullyan *circa 1980*

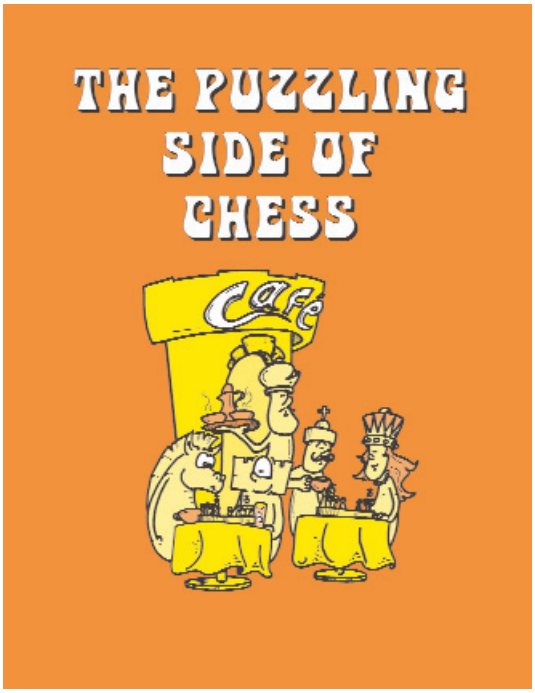
Now that you're established as an experienced chess detective, we have one more tough case to challenge your deductive skills. It's the "Mystery of the Mirrored Image." Good luck.

## Retro 9




What were the last eight moves?

Before we get to the solution pages, here is a short reminder about the *Chess Cafe Puzzlers Cup*. There is still plenty of time to enter the contest. We're looking for all kinds of puzzles: easy, hard, or in between. Don't be shy, give it a try!



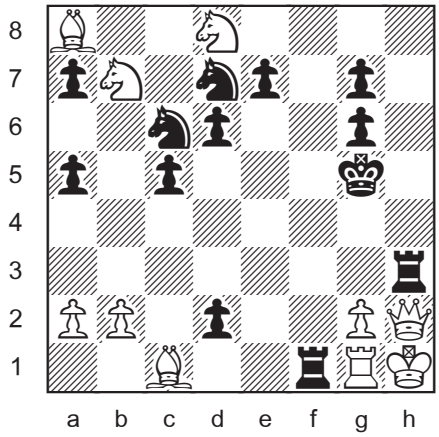
# SOLUTIONS

*PDF hyperlinks*. You can advance to the solution of any puzzle by clicking on the underlined title above the diagram. To return to the puzzle, click on the title above the solution diagram.

## Retro 1

J. Coakley 1998

*Scholar's Mate 41*




White's last move was with a pawn from c7, capturing the black queen on d8 and promoting to a knight.

**1. c7xd8(Q)=N**

The three white pawns are still unmoved on the 2nd rank. The white king, rook, bishops, and knight on b7 are completely blocked. The only two pieces that might have moved last turn are the queen and the knight on d8.

The last move was not by the queen to h2 because she could only get there from e5, f4, or g3; and she would be checking the black king on those squares. *It cannot be White's turn if Black is in check*.

Similarly, the only squares the knight on d8 could come from are e6 or f7. But he would be checking the black king on those squares.

That leaves one possibility. The knight on d8 was just promoted after a capture from c7. The captured piece had to be the queen. Black is only missing two bishops and a queen. The dark-square bishop could not be on d8 (a dark square) because there are still unmoved pawns on e7 and g7.

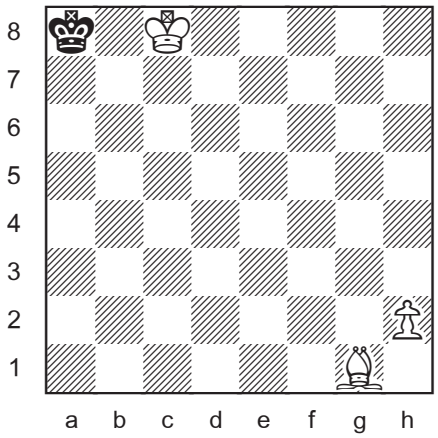
## Retro 2

Jan Mortensen 1956

*Feenschach*

Raymond Smullyan 1979

*The Chess Mysteries of Sherlock Holmes*

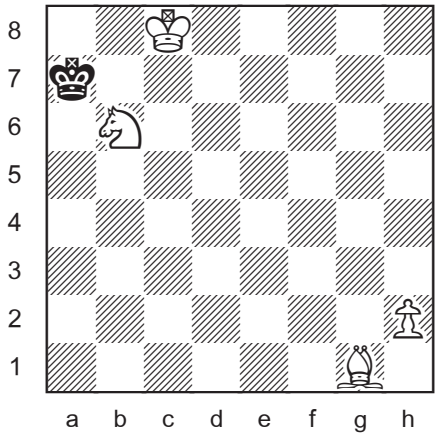


The last move was by the black king from a7, capturing a knight on a8. White's previous move was a discovered check by moving a knight from b6 to a8.

**1. Nb6>a8 Ka7xa8(N)**

White's move to a8 may or may not have been a capture. That is indicated by the symbol **>** (instead of Nb6-a8 or Nb6xa8).

Here is the position before the two moves.



Without the knight on b6, the position would be illegal because of an impossible check from the bishop on g1. The bishop could only have moved to g1 from along the g1-a7 diagonal, where it would already be giving check.

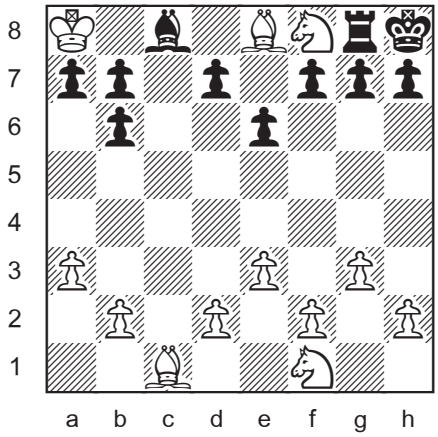
The disappearance (capture) of a piece after it gives a discovered check is a standard trick in retro problems.

Danish composer Jan Mortensen (1932-2003) published this problem (reflected left to right) in the excellent German chess periodical *Feenschach* in 1956.

Although not published until 1979, Raymond Smullyan has written that all the problems in his chess book are original and that many were composed during the 1940s. It is unlikely that either composer was aware of the other's work.

## Retro 3

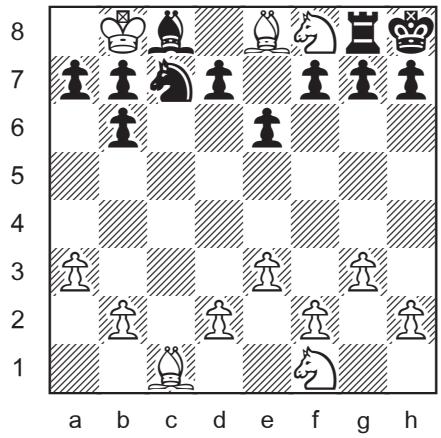
J. Coakley 2013
*ChessCafe.com*




The last move was by the white king from b8, capturing a knight on a8. Black's previous move was with a knight from c7 to a8. Black's move was not a capture.

**1. . . . Nc7-a8**
**2. Kb8xa8(N)**

The position before these moves was the following.




The difficulty in this problem is seeing why other moves are not legal.

In the puzzle position, we can determine that it is Black's turn to play. The black king, rook, and bishop did not just move because there are no squares they could have moved from. The only possible pawn moves would be ...c7xb6 or ...e7-e6, but both are "illegal". If the pawn from b6 were on c7, then the white king could never have reached a8. If the pawn from e6 were on e7, then there could not be a white bishop on e8 (which must be a promoted pawn).

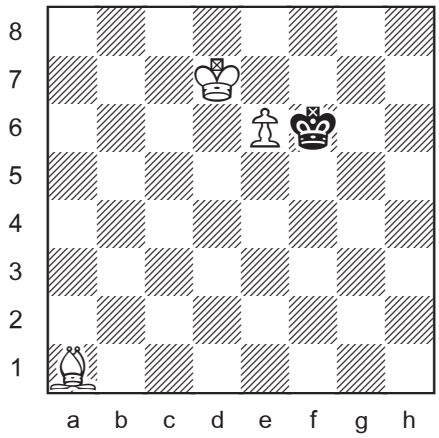
So we know that White just moved, and there seems to be lots of possibilities. However, consider a2-a3. If that was the last move, then Black had no possible move on the previous turn, for the same reasons given above. The only way to give Black a move on the previous turn is if White captures the piece that moved. None of the white pawns could have captured last turn (including e7-e8=B). The white knight on f8 did not capture from g6 because it would be checking the black king from that square. The promoting capture e7xf8=N is impossible because White is only missing one pawn and it promoted to a bishop on e8. Therefore, the last move was a capture by the king on a8, and the only black piece that could have moved there on the previous turn was a knight from c7.

The black knight did not capture on a8 because there were no white pieces available. Neither rook (a1 or h1) could have escaped from behind the white wall of pawns. The light-square bishop (from f1) could not reach a8 and it was not captured on the dark square b6. The c-pawn is now the promoted bishop on e8. The only other missing white piece is the queen, which must have been captured on b6.

## Retro 4

Niels Høeg 1916

*Skakbladet*



The check from the bishop on a1 can only be explained by an *en passant* capture, another standard trick in retrograde problems.

**1. d4-d5+ e7-e5**
**2. d5xe6 e.p.+**

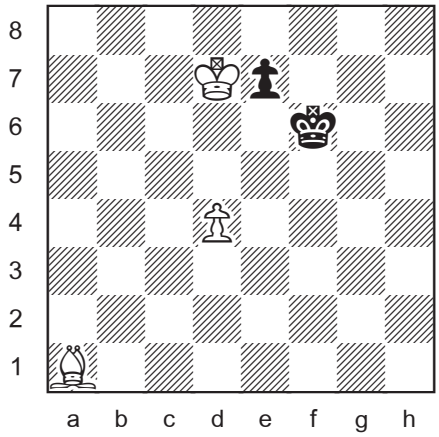
Because we are going backwards from a given position, some problemists number the moves differently, or put them in reverse order. These alternate notations are equally descriptive, but they can be confusing to players unfamiliar with retrograde analysis.

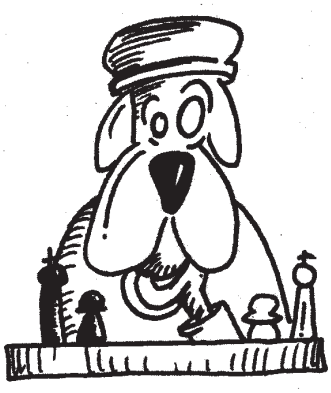
n-1. d4-d5+ e7-e5
n. d5xe6 e.p.+

-1. d5xe6 e.p. + e7-e5
-2. d4-d5+

I prefer the method used by Raymond Smullyan, showing a diagram for the position as it was previously and giving the moves in a normal forward order. This approach is the most “user-friendly”.

Anyhow, here’s how things looked before those three moves, regardless of how we write them.

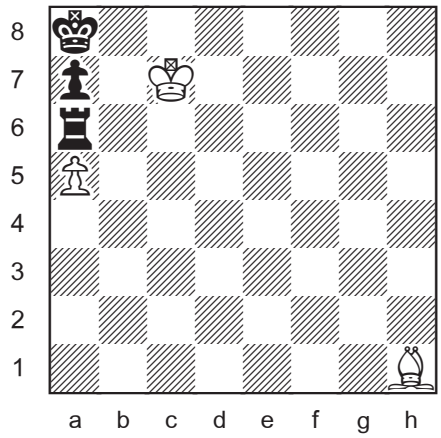


## Retro 5

Branko Pavlovic 1950

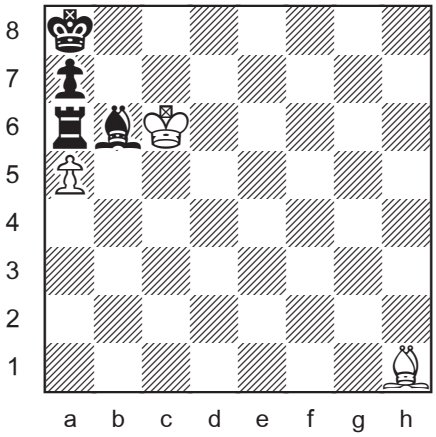
*Sahovski Vjesnik*



The last move was a discovered check by the white king moving from c6, capturing a bishop on c7. Black's previous move was a discovered check with a bishop from b6 to c7. Black's move to c7 may or may not have been a capture.

**1. . . . Bb6>c7+**
**2. Kc6xc7(B)+**

The position before these two moves was the following.



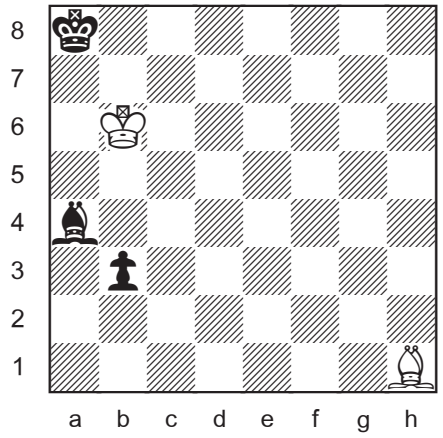
A knight is not the only piece which can vanish after giving a discovered check.

Pavlovic published this and the next problem with the stipulation "What was the last single move?", presumably because the second retro move (...Bb6>c7) is not exactly determined. However, even if that move is not itself precise, it must be deduced in order to state the last white move precisely. In that sense, Black's previous move is an essential part of the puzzle.

## Retro 6

Branko Pavlovic 1950

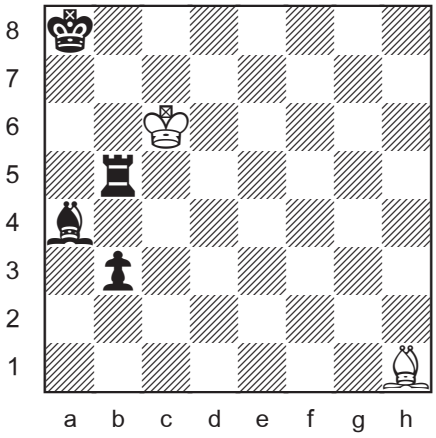
*Sahovski Vjesnik*




The last move was a discovered check by the white king moving from c6, capturing a rook on b6. Black's previous move was a discovered check with a rook from b5 to b6. Black's move to b6 may or may not have been a capture.

**1. . . . Rb5>b6+**
**2. Kc6xb6(R)+**

This diagram shows the position before these two moves.

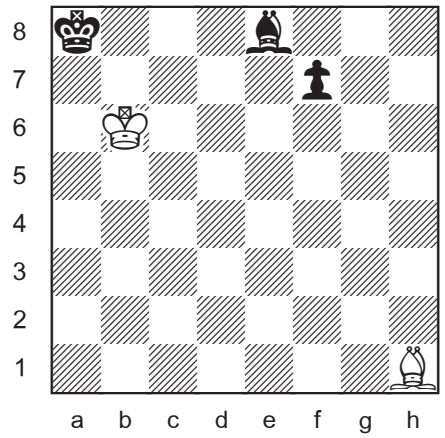



The theme remains the same, with the black rook and bishop exchanging roles.

## Retro 7

J. Coakley 2010

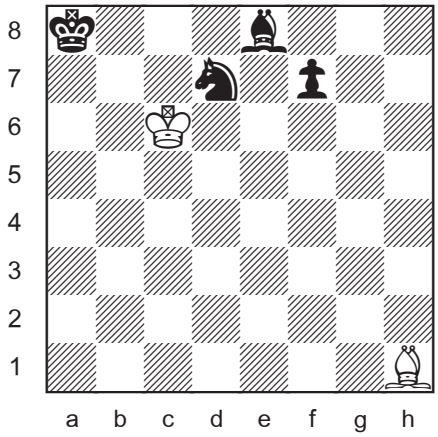
*Winning Chess Puzzles For Kids Volume 2*



The last move was a discovered check by the white king moving from c6, capturing a knight on b6. Black's previous move was a discovered check with a knight from d7 to b6. Black's move to b6 may or may not have been a capture.

**1. . . . Nd7>b6+**
**2. Kc6xb6(N)+**

Here's the way the pieces were before.



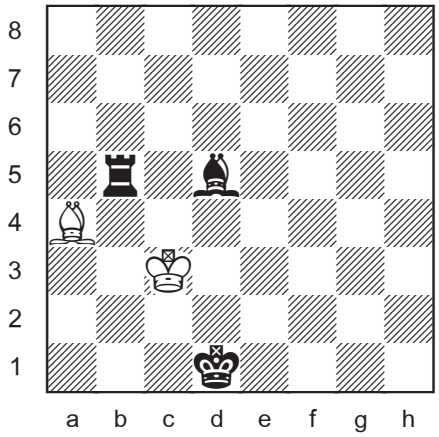
The same theme again, with the ever-popular disappearing knight trick.

This position is so similar to retro #6, I would not be surprised if it was anticipated by Branko Pavlovic. But if it was, it is not included in the databases or problem collections that I have seen. An even closer *twin* would be white: Kc7 Bh1, black: Ka8 Ba4 b3 (1...Nb5>c7 2.Kc6xc7+).

## Retro 8

Branko Pavlovic 1950
*Sahovski Vjesnik*

Raymond Smullyan 1957
*Manchester Guardian*
*The Chess Mysteries of the Arabian Knights* (1981)



To make the position legal, place the white king on c3.

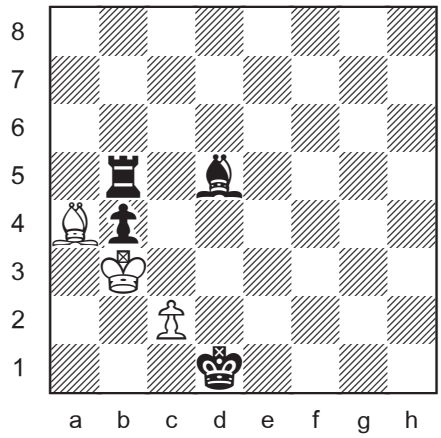
The last move was a discovered check by the white king moving from b3, capturing a pawn on c3. Black's previous move was an en passant capture with a pawn from b4 to c3. White's move before that was advancing the c-pawn two squares from c2 to c4, allowing the en passant capture.

**1. c2-c4 b4xc3 e.p.+**

Seemingly impossible double checks are often the result of an en passant capture.

**2. Kb3xc3(p)+**

The diagram below shows the position three turns ago. Black's previous move, leading to this position, was **...B>d5+**. It is not possible to say which square the bishop came from or whether it captured on d5.



Many a mind has been boggled by this ingenious puzzle. Congratulations if you never saw it before and solved it on the first try. Your chess detective licence is in the mail!?

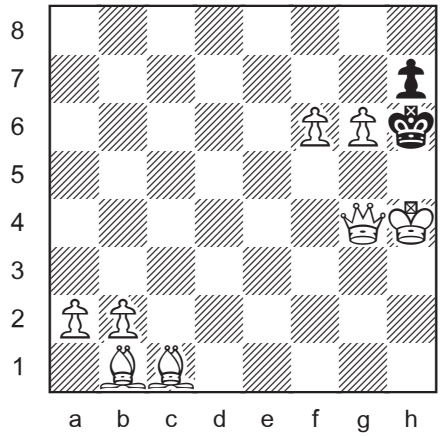
This composition (retro 8), with the white king on the board and the position reflected left to right, was published by Branko Pavlovic in Yugoslavia in 1950. Raymond Smullyan was not aware of this. As mentioned in the solution to retro 4, he considered all the problems in his books to be original.

## Retro 9

David Norwood 1995

*Chess Puzzles*

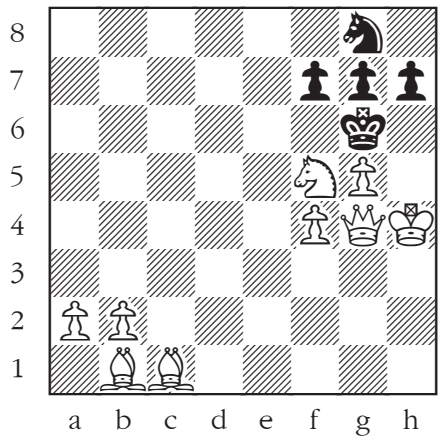
(reflected left to right)




Two en passant captures and two disappearing knights are necessary to explain checks by the white bishops and queen.

**1. . . . Ng8>h6**
**2. Nf5xh6(N)+ f7-f5**
**3. g5xf6 e.p.+ Kg6xh6(N)**
**4. f4-f5+ g7-g5+**
**5. f5xg6 e.p.#**

The action started from the position in the next diagram. The last seven moves are precisely determined. Black's initial knight move from g8 to h6 may or may not have been a capture.



The most difficult logical step in this investigation is realizing the necessity of capturing a white knight on h6. The fact that it remains on h6 for one black turn after it moves there is very “retro-deceptive”.

Until next time!



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[When this column was first published, retro 9 was credited to me. It was only later that I discovered the anticipation by David Norwood. Darn.]