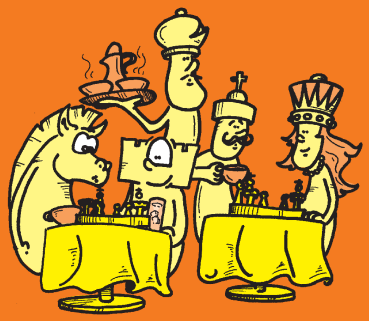


THE PUZZLING SIDE OF CHESS

Jeff Coakley

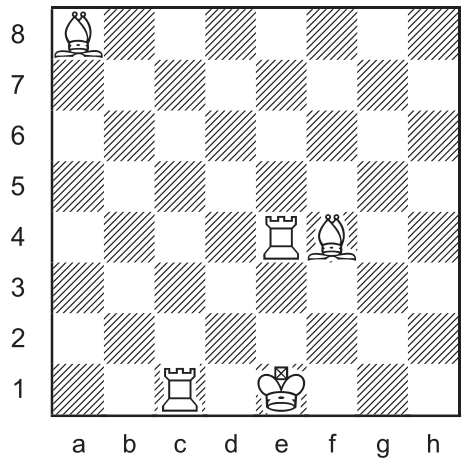
MERCURY RISING

Smorgasbord XXIX

number 193 August 31, 2020

There ain't no cure for the summertime blues. But a healthy dose of chess can sometimes alleviate the symptoms. Perhaps the seven puzzles in this column will have the desired therapeutic effect. For good measure, a few mercurial diversions are also included.

Triple Loyd 83

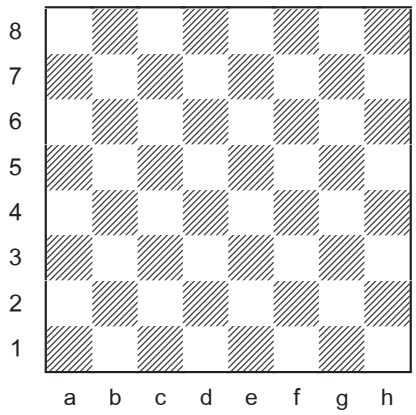


Place the black king on the board so that:

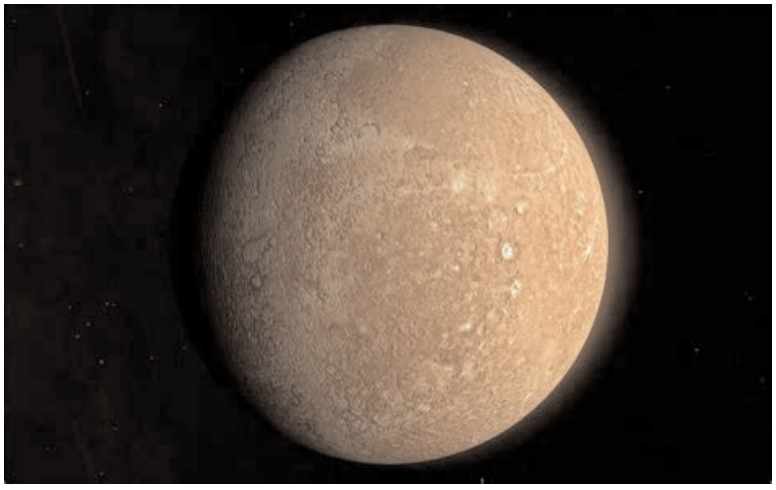
A. Black is in checkmate.
B. Black is in stalemate.
C. White has mate in 1.

Retro World V (column 191) ended with a rebus in which the last six moves were discovered checks. That led to the following question: "*What is the maximum number of consecutive discovered checks in a legal chess position?*"

Consecutive Disco Check Maximizer



Construct a legal position from which the most consecutive discovered checks are possible. Every move, white and black, must be a discovered check.



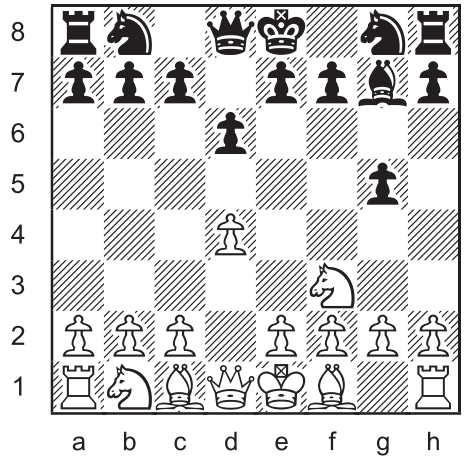
Mercury

Planet Mercury has been observed by stargazers since ancient times. Named for the Roman "messenger of the gods" because of its speedy passage through the heavens, it is only visible near the horizon in the twilight of dawn or dusk.

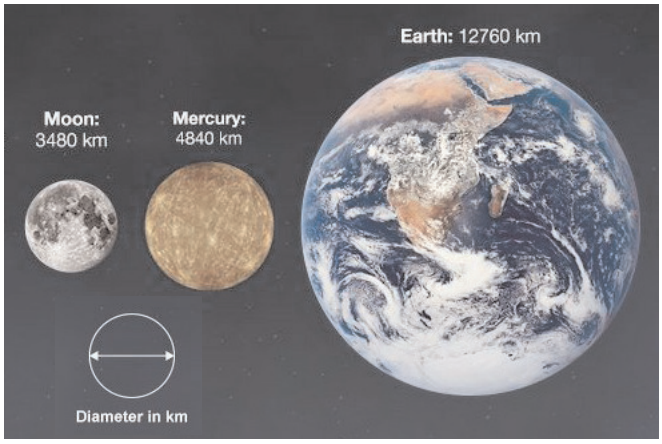
Mercury is a greyish-brown rock covered in craters. Nothing much happens there. No moon, no atmosphere, no night life.

On the *Puzzling Side*, proof games with more than four moves are classified “longer”. That designation seems inappropriate today, but when the column began on *ChessCafe.com*, all the proof games had length 4.0. When problems with more moves were included, I started to number them separately. Now I’m stuck with this distinction. That explains how the following “shortie” got labelled “longer”.

Longer Proof Game 80 (4.5 moves)



This position was reached after
White’s fifth turn. What were the moves?



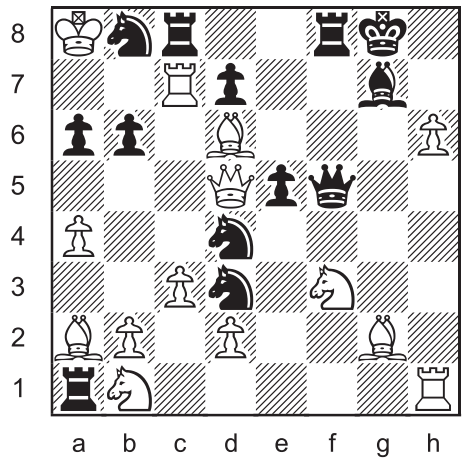
Mercury, smaller than Earth, larger than our moon, has three claims to fame in the solar system. Its orbital speed (47 km/sec) is the fastest of any planet. Its range of temperatures is the most extreme, from a low of -173° C to a high of 427° C. More interestingly, Mercury is gravitationally locked in a *3:2 spin-orbit resonance* with the sun. This means that the planet rotates exactly 3 times for every 2 revolutions around the sun. Its days are twice as long as its years.

A year on Mercury, one orbit of the sun, takes 88 earth days. Each day on Mercury, from dawn to dawn, lasts 176 earth days. Imagine how strange their calendar would be.

The next position is illegal. It cannot be reached in an actual game.

The solution to this kind of puzzle is a logical argument that proves a contradiction. Identifying a particular piece as the “goof” is not usually possible. But normally there is one feature of the position that underlies any explanation of illegality.

Who’s the Goof? 38



Why is this position illegal?

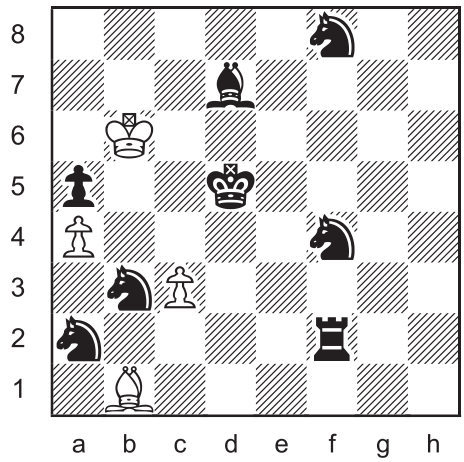
Which piece cannot be shifted to a different square to legalise the position?

Mercury, “messenger of the gods”, was actually a god himself, with his own temple and holiday in ancient Rome. His various titles included God of Trade and Travel, God of Luck, and God of Trickery.

Son of Jupiter, grandson of Atlas, he roamed the heavens in winged sandals and cap, carrying a herald’s staff entwined with two snakes.

News flash. For what it's worth, the *Puzzling Side* archives now has an expanded index that includes side themes and miscellanea. Things like "Mercury", "Alekhine", and "zugzwang".

Multi-Wham 48



series-mate in 31

White plays thirty-one moves in a row to mate Black.

Only the last move may give check. Captures are allowed. White may not place their own king in check. Black does not get a turn.

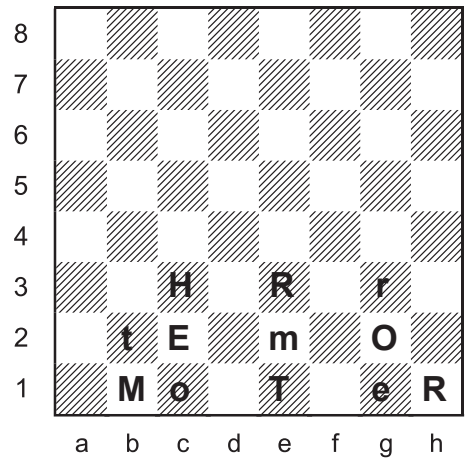
Mercury is a shiny silver liquid metal. It is the only metallic element that is liquid at normal temperatures on Earth. Also known as "quicksilver", its atomic symbol is Hg, from the Greek *hydragyros* (water silver). Its most unusual property is the way it can be broken into separate beads and then reformed into a larger mass.

Besides its use in thermometers and barometers, Mercury also has many electronic and pharmaceutical applications. But be careful. Mercury and its compounds are very toxic.

This column concludes with a pair of rebuses. The first will test your tactics and your temperature.

Rebus 50

"thermometer"



Each letter represents a different type of piece.
Uppercase is one colour, lowercase is the other.
Determine the position and, if possible, the last move.

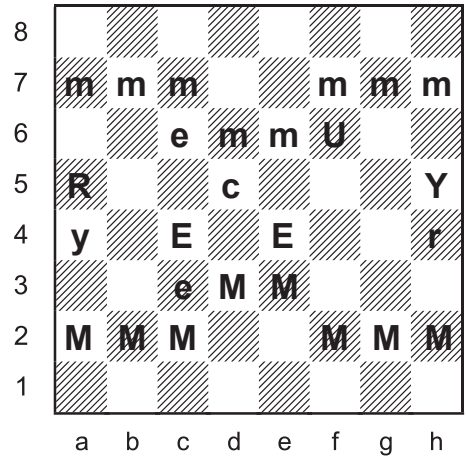
1950 Mercury

Mercury is a make of automobile manufactured by the Ford Motor Company from 1938 to 2010. From the stodgy sedans of the 1940s to the sleek Cougar of the 1960s, Mercury had its own distinctive style. They don't make cars like that anymore.

Thanks to Yan Lim from Singapore for his timely e-mail pointing out a diagram error in one of the rebuses from column 192. The mistake was corrected soon after the initial posting. And hopefully went unnoticed by other solvers.

Rebus 51

"Mercury"



Each letter represents a different type of piece.
Uppercase is one colour, lowercase is the other.
Determine the position and the last move.

Another One Bites the Dust.

Freddie Mercury (1946-1991), the flamboyant lead singer of Queen, was born Farrokh Bulsara in Zanzibar. He got the nickname "Freddie" while attending boarding school in India. In 1970, having moved to England and joined the band, he adopted the stage name Mercury. A star had arisen.

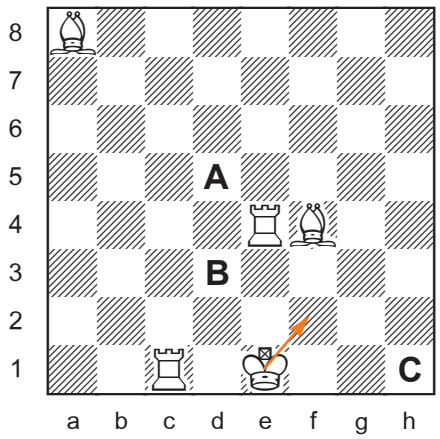
SOLUTIONS

All problems by J. Coakley, *Puzzling Side of Chess* (2020). Rebuses 50-51 are joint compositions with Andrey Frolkin.

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.

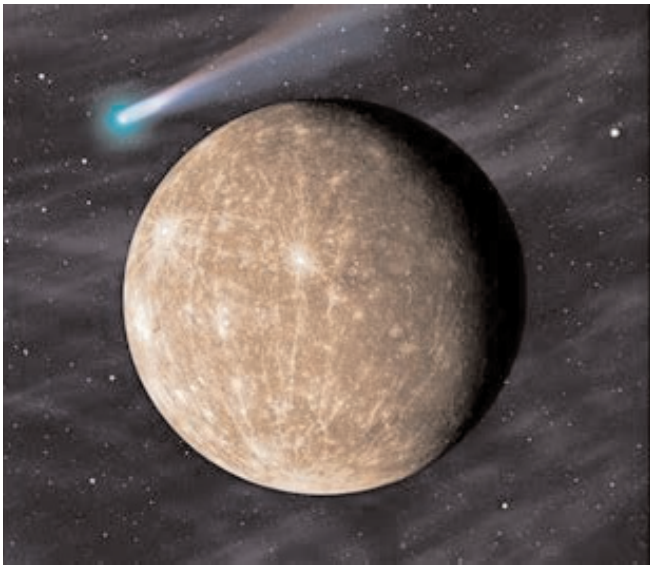
Archives. Past columns are available in the *Puzzling Side* archives.

Triple Loyd 83

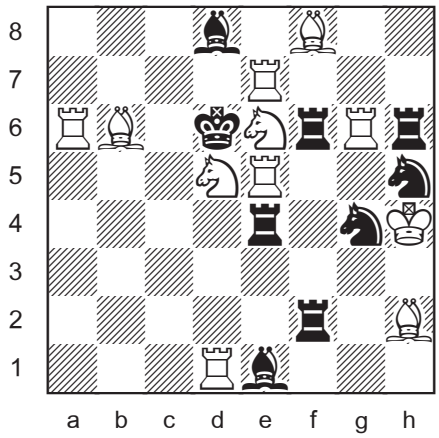


A. Kd5#
B. Kd3 =
C. Kh1 (Kf2#)

Disco King.



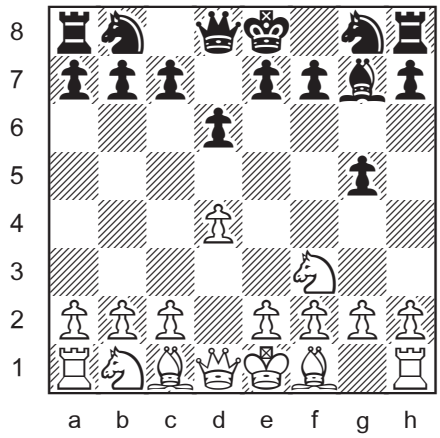
Consecutive Disco Check Maximizer



1. Re8+ Rxf8+
2. Nxd8+ Nhf6+
3. Rh5+ Ne5+
4. Nf4+ Rd2+
5. Bf2+

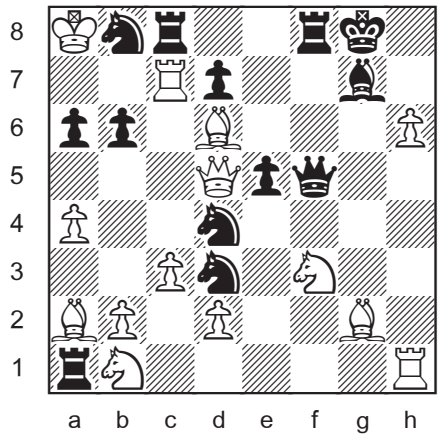
9 consecutive discovered checks.
Can anyone achieve ten? Or more?
[*See column 195 for the new record of 12.*]

Longer Proof Game 80 (4.5 moves)



1.d3 d6 2.d4 Bh3 3.Nxh3 g5 4.Ng1 Bg7 5.Nf3
White pawn tempo. White knight switchback and go.

Who's the Goof? 38



The position is illegal because White cannot have two light-square bishops, given the pawn formation and number of missing pieces.

Analysis

a) White is missing 2 pieces. Unmoved pawns on b2 and d2 show that the original light-square bishop was captured on c1. So only one white piece is available for capture elsewhere.

b) White has 2 promoted bishops (one dark, one light).

c) Black is missing 3 pieces: a light-square bishop and 2 pawns.

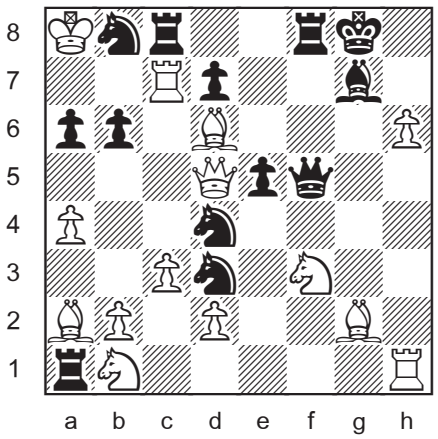
d) Black has 2 promoted pieces: rook and knight.

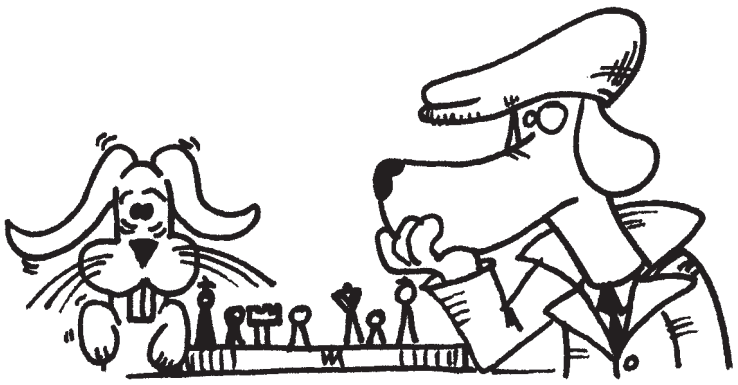
e) Black is in check from the queen on d5. The last move had to be the capture 1.Qxd5+. Otherwise the king was already in check by the bishop on a2. So only two black pieces are available for capture elsewhere.

f) Strategically, the piece placement in this position is illogical. But the basis of its illegality is the kingside pawn formation. There are no pawns on the fg-files. White has a passed pawn on the h-file. Black has a passed pawn on the e-file. This pawn formation could be achieved by means of two 'pawn x pawn' captures or by one 'pawn x pawn' capture and two 'pawn x officer' captures.

g) One missing black piece is the c-pawn. It did not promote because it would need two captures to pass the white c-pawn and promote on a1, c1, or e1. Only one white piece is available for capture.

h) The black c-pawn was not the piece taken on d5 by the white queen. To reach d5, the black c-pawn would have to capture the only missing white piece (disregarding Bc1). The remaining missing pieces would be a black bishop and black pawn. Their capture is insufficient to account for the kingside pawn formation.





i) Thus, the black c-pawn was captured on the c-file.

j) So only two missing pieces (one white, one black) are available to explain the kingside formation. They must be pawns. This means that the piece captured on d5 was Black's light-square bishop.

k) To achieve the kingside pawn formation, the two 'pawn x pawn' captures must each occur in their own separate sector (two adjacent files). In this case, one capture on the ef-files and the other on the gh-files.

l) Now consider the colour of the promotion squares.

i1) If White captured on the ef-files, it had to be exf because Black has a pawn on the e-file. Two white pawns would promote on the dark square f8.

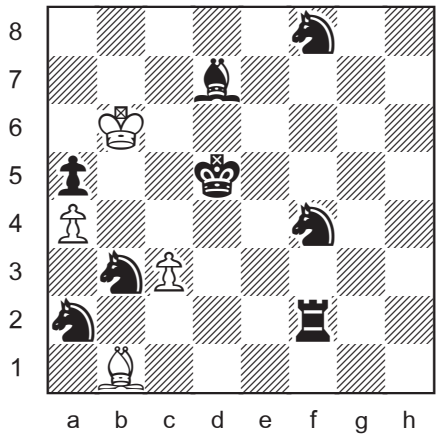
i2) If White captured on the gh-files, it had to be gxh because White has a pawn on the h-file. One white pawn would promote on the dark square h8. Black's capture on the ef-files had to be ...fxe because there is a black pawn on the e-file. The white f-pawn would promote on the dark square f8.

Therefore, White could not promote a light-square bishop, so the position is illegal.

No specific piece is the "goof". In fact, there is only one piece that cannot be shifted to a different square to legalise the position: the white a-pawn. It is the only piece that is for sure not the goof!

The following changes each legalise the position. a) Kg8 to h8, b) Ka8 to c4, c) any black officer to e6, d) Qd5 to b3, e) Bd6 to c1, f) Bg2 to g3, g) Ba2 to a3 (or c2), h) any white rook or knight to b3, i) b2 to b3 (or b4), j) c3 to c4, k) d2 to c4, l) h6 to g6, m) a6 to c4, n) b6 to b3, o) d7 to c4, p) e5 to f6.

Multi-Wham 48

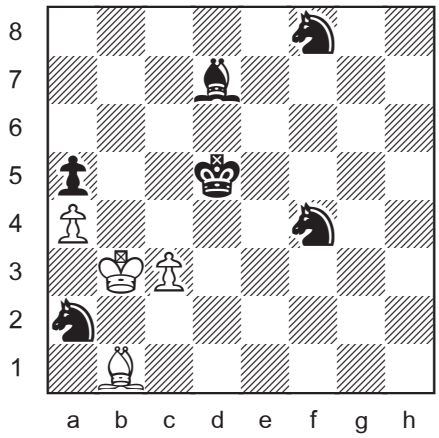


series-mate in 31

To free the a-pawn, White has to capture the black pawn on a5, which is guarded by the knight on b3. The white bishop cannot capture the knight because it would be check. So the king must journey to b3. Along the way, he will have to capture the black rook.

1.Kc7 2.Kd8 3.Ke7 4.Kf6 5.Kg5 6.Kh4 7.Kg3 8.Kxf2

9.Ke1 10.Kd1 11.Kc2 12.Kxb3

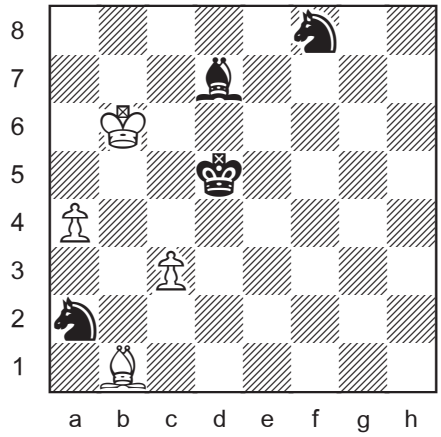


13.Kc2 Now the king returns to capture a5. The shortest route includes capturing the knight on f4. Taking the knight on a2 would delay mate by two moves.

14.Kd2 15.Ke3 16.Kxf4 17.Kg5 18.Kf6 19.Ke7 20.Kd8

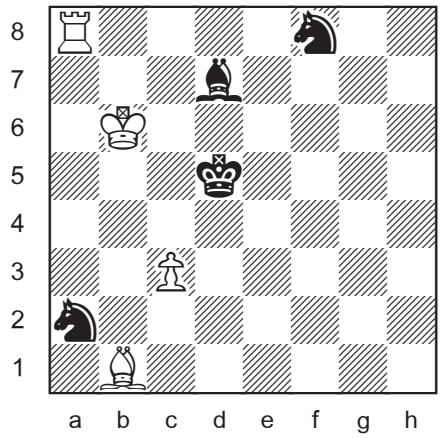
21.Kc7 22.Kb6 23.Kxa5 24.Kb6

Standing on b6 for the fourth time!



25.a5 26.a6 27.a7 28.a8=R

Promoting to queen after 28.Kb7 29.a8=Q takes one move too long. For example, 30.Bf5 31.Qa7 32.Qd4# or 30.Qd8 31.Qe7 32.Bxa2#



29.Re8 30.Re6 31.Bxa2#

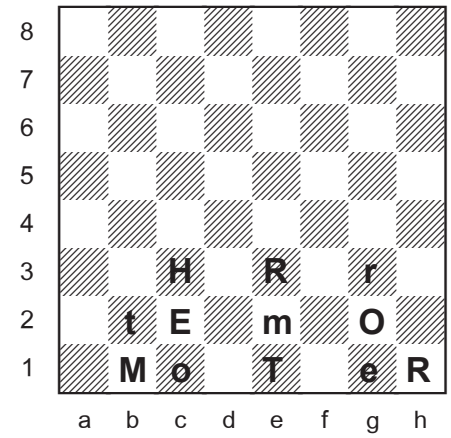
Mercury Falling

Rebus 50

Andrey Frolkin & Jeff Coakley 2020

Puzzling Side of Chess

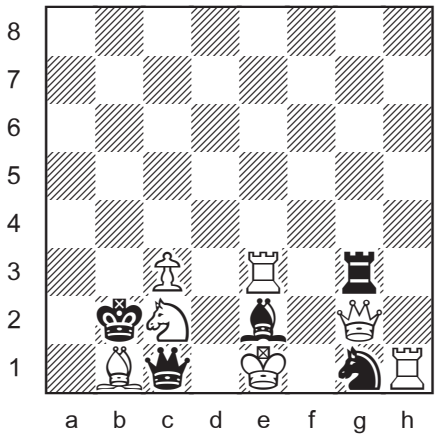
"thermometer"



T = king
H = pawn
E = knight
R = rook
M = bishop
O = queen

caps = white

last move:
1...Bd1>e2+



(7 + 5)

♔ = (EMOT) Letters with one uppercase, one lowercase.

H = ♙ Only letter not on 1st rank.

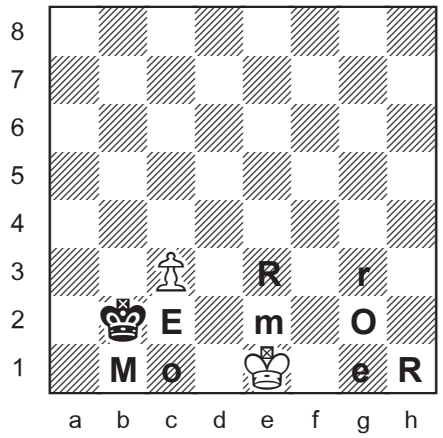
E ≠ ♔ If E = ♔ O ≠ ♕♖ Both kings in check (c1 g2).
T ≠ ♕♖ Both kings in check (b2 e1).
So queen and rook must be assigned to MR.
MR ≠ (♕♖) Both kings in check (e2 h1).

M ≠ ♔ If M = ♔ O ≠ ♕♖ Both kings in check (c1 g2).
T ≠ ♕♖ Both kings in check (b2 e1).
So queen and rook must be assigned to ER.
ER ≠ (♕♖) Impossible double check (c2 e3).

O ≠ ♔ If O = ♔ M ≠ ♕♖ Both kings in check (b1 e2).
E ≠ ♕♖ Both kings in check (c2 g1).
So queen and rook must be assigned to RT.
TR ≠ (♕♖) Both kings in check (e1 g3).

T = ♔

M ≠ ♕♖ Both kings in check (b1 e2).
E ≠ ♕♖ Both kings in check (c2 g1).
ME = (♗♘)
OR = (♕♖) The king on e1 is in <u>check</u> by the O on c1.
caps = white If caps = black. Both kings in check (pawn c3).



The <u>check</u> by O/c1 (♕ or ♖) could only happen by a discovery.

M = ♗ Only possible discovered check.

last move: 1.Bd1>e2+ It may or may not have been a capture.

E = ♘

R ≠ ♕ If R = ♕ Impossible double check (c1 g3).

R = ♖

O = ♕

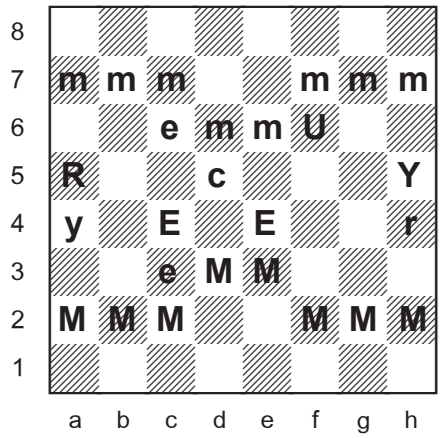
Mercury Cougar

Rebus 51

Andrey Frolkin & Jeff Coakley 2020

Puzzling Side of Chess

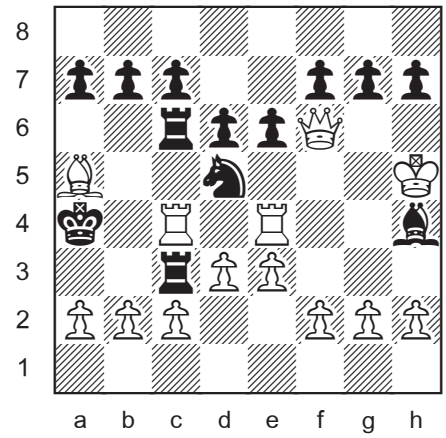
"Mercury"



M = pawn
E = rook
R = bishop
C = knight
U = queen
Y = king

caps = white

last move:
1.Bb4-a5+



(13 + 13)

♔ = (RY) Letters with one uppercase, one lowercase.

M = ♙ There are 16 M's on the board, so it seems likely that they are the pawns. That is the case. However, it is not a given. With 6 missing pieces, 12 promotions (M) plus two passed pawns (R or Y) are possible.

If M ≠ ♙, both kings (R or Y) are in check by M regardless of which piece is assigned to M. Therefore M = ♙.

caps = white If caps = black, the 16 inverted pawns (white above black) would require 8 captures.

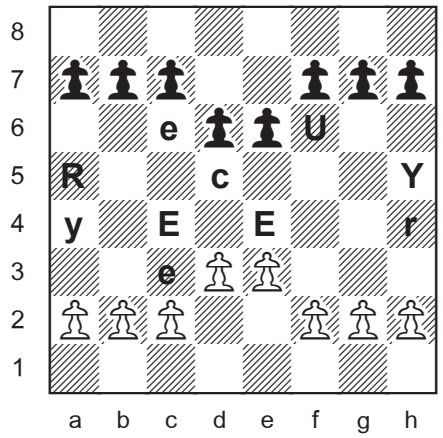
RY = (♔♗) or (♔♘) If R or Y = (♕♖) Both kings in check.

The E's are the keys to solving this puzzle. They are also the rooks.

E ≠ ♕ With all pawns on the board, there cannot be 4 queens.

E ≠ ♗ Both capital E's are on light squares.

Rebus 51 *continued*



E ≠ ♘ Trickier to prove.

If E = ♘

RY = (♔♗)

CU = (♕♖)

U ≠ ♖ If U = ♖

There is a white rook (f6) outside the white wall of pawns. This required a cross-capture of pawns by e2xd3 and d2xe3 to temporarily open a file.

Black is missing a bishop and two rooks. So one of the pieces captured on e3 or d3 was a rook. For that rook to escape from behind the black wall of pawns, there was also a cross-capture of pawns by ...e7xd6 and ...d7xe6.

But here lies the contradiction. What was the first piece captured by either side?

None of the missing pieces (white QRB; black RRB) could escape the 1st or 8th rank until one of pawns (d2 e2 d7 e7) made a capture. But that first capture could only occur if one of the opponent's missing pieces (white QRB; black RRB) was already free to move. Therefore U ≠ ♖.

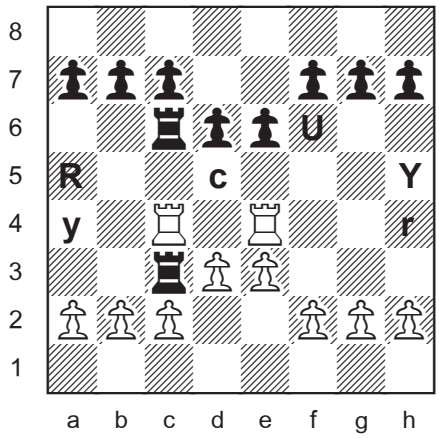
With all 4 knights on the board, there is no missing piece to account for the first capture!

C ≠ ♖ If C = ♖, the same argument applies as if U = ♖. There must be cross-captures by both sides and no missing pieces are available for the first capture.

So E ≠ ♘

E = ♖ Time to refresh our diagram.

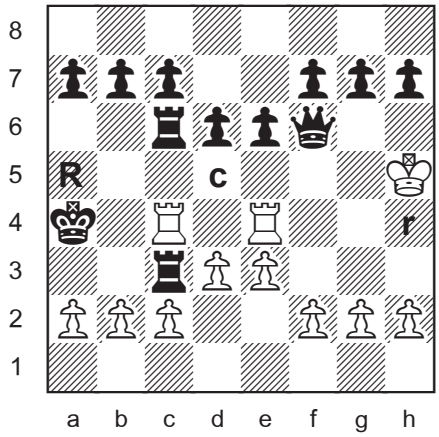
Rebus 51 *continued*



The black king (Y/a4 or R/h4) is in <u>check</u> by a white rook.

U = ♕	C ≠ ♕ (d5)	Both kings in check.
	RY ≠ ♕	RY = (♔♗) or (♔♘)
Y = ♔	If R = ♔	Impossible double check (e4 f6).

CR = (♗♘)



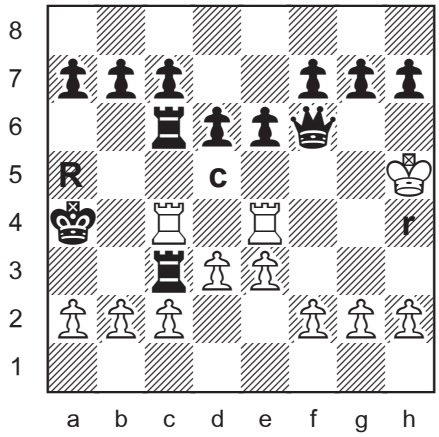
Both sides have two rooks in front of their pawns, which required the cross-capture of pawns on d3 e3 d6 e6.

There are 6 missing pieces, 3 of each colour. Four of them were taken by the pawns.

RB exclusion: The cross-captures on the ed-files cannot free both rooks and both bishops. Two rooks and one bishop can escape or two bishops and one rook can escape, but not all four.

Hence, each side had one bishop captured on its original square. That accounts for all 6 missing pieces, so no other captures are possible in the retroplay.

Rebus 51 *continued*

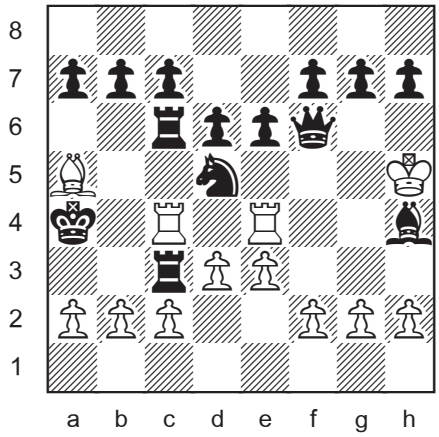


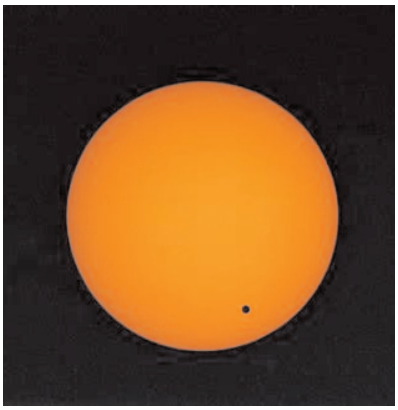
The material balance is closed, so the last move was not the capture 1.Rd4xc4+. It was not the move 1.Rc5-c4+ because the black king would already be in check from the rook on e4. The last move had to be a discovered check. The only possibility is with a bishop on a5.

R = ♗

last move 1.Bb4-a5+

C = ♘





Until next time!