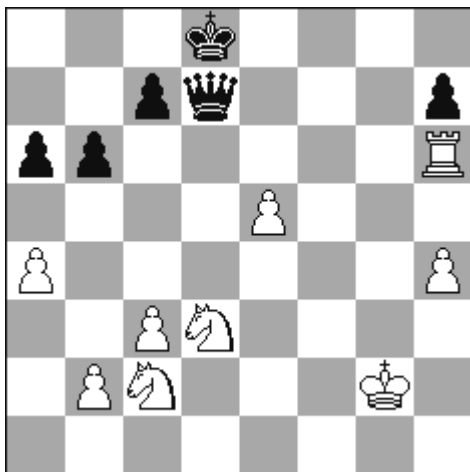# MIHAI NEGHINĂ & PETER MARTAN

White to play and win
Mihai Neghină
Glarean Magazin
1st October 2009

Solution:
1.Nd4 Qg7+ 2.Kh3 Qxh6 3.Nf4 Kc8 [3…Kd7 4.Nde6 Kc6 (4… Qxe6+ 5.Nxe6 Kxe6 6.Kg4 Kxe5 7.Kg5)(4…b5 5.a5 Kc6 6.h5 b4 7.c4 Kb7 8.Kg4 Kb8 9.Kf5 Kb7 10.Ke4 Kc6 11.b3 Kd7 12.Kd5)(4…c5 5.Kg3 Kc6 6.h5 a5 7.c4 Kd7 8.Kf3 Kc6 9.Ke4 Kb7 10.Kd5 Ka7 11.Kc6 Ka6 12.Kd6 Kb7 13.Kd7 Ka7 14.Kc7 Ka6 15.Kb8)(4…a5 5.h5 c6 6.Kg3 Kc8 7.Kf3 Kd7 8.Ke4 Kc8 9.c4 Kb8 10.Kd4 Ka7 11.c5 Ka6 12.Kc4 Ka7 13.cxb6+ Kxb6 14.Kd4 c5+ 15.Kd5 c4 16.Kxc4 Kc6 17.b4 axb4 18.Kxb4) 5.h5 b5 6.a5 Kd7 7.Kg3 c6 8.Kf3 Kc8 9.Ke4] **4.Nde6 Kb7 5.h5**
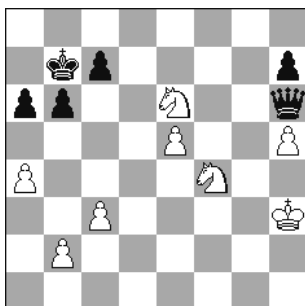
The first aim is reached. The black Queen has been immobilized.

5…c5 [5…c6 6.Kg3 Kc8 7.Kf3 Kb8 8.Ke4 a5 (8…Kb7 9.c4 Kb8 10.b4 Kc8 11.Kd4 Kb8 12.b5 Kb7 13.Ke4 a5 14.Kd4 cxb5 15.cxb5 Kc8 16.Ke4 Kb8 17.Kd5 Kb7 18.Kd6) 9.c4 Kc8 (9… Ka7 10.c5 bxc5 11.Kd3 Kb8 12.Kc4 Kc8 13.Kxc5) 10.Kd4 Kb7 11.c5 Ka7 12.Kc4 Ka6 13.cxb6 Kxb6 14.Kd4 c5+ 15.Kd5)(5… Kc6 6.Kg3 b5 7.a5 b4 8.c4 b3 9.Kf3 Kb7 10.Ke4 Kc8 11.Kd4)(5… a5 6.Kg4 Kc6 7.c4 Kb7 8.Kf5 c6 9.Ke4 b5 10.axb5 cxb5 11.c5 Kc6 12.Kd4 a4 13.Kc3] **6.Kg4 c4** [6…Kc6 7.Kf3 b5 (7…a5 8.c4) (7…Kd7 8.Ke3 Kc6 9.Ke4) 8.a5 c4 9.Ke4 b4 10.Kd4 Kb5 11.Kd5 bxc3 12.bxc3 Kxa5 13.Kxc4) (6…Kc6 7.Kf3] **7.Kf5 Kc6 8.Ke4 b5 9.axb5+ axb5** [9…Kxb5 10.Kd4 a5 11.Kd5 a4 12.Kd4 Kc6 13.Kxc4] **10.Kd4 Kb6 11.Kd5 Ka5 12.Kc5 Ka6 13.Kc6 Ka5 14.Kb7 b4 15.Kc6 bxc3 16.bxc3 Ka4 17.Kc5 Kb3 18.Kd4 Kc2 19.Kxc4** 1-0

One side of the story (the author's side)

The idea of creating tough puzzles for chess-engines has been around for a long time, but only at the beginning of 2009 was I able to put together (in a puzzle) such concepts as long-term strategy, fortress and zugzwang, all of which are difficult for computers to comprehend. This became the initial version of my first ever endgame study. I called it Constrictor, because the path to victory is a slow, systematic strangling of the black pieces until they have no more space, resembling boa constrictor methodology.

In their winter 2008-2009 number, Matplus agreed to publish earlier puzzles of mine [of type *n*#], so I naturally sent the initial version of this endgame study there as well. After a short mail exchange with editor Iuri Akobia, in which I showed him two winning variations that were previously evaluated by his chess computer program as dead draws, he agreed to publish it, and in September 2009 it appeared, in the magazine's autumn issue.
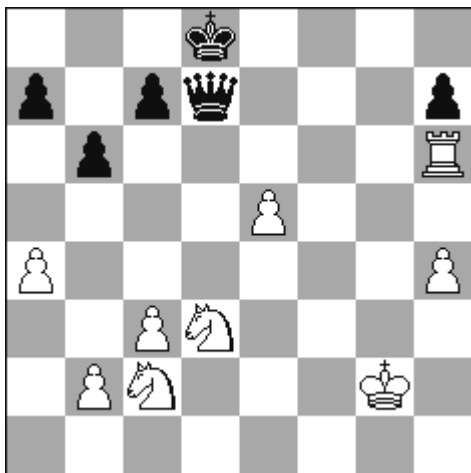
White to play and win
Mihai Neghină
Matplus MP 35/2009
Initial, cooked version

Refutation of the initial version (the drawing variation):
1.Nd4 Qg7+ 2.Kh3 Qxh6 3.Nf4 Kc8 4.Nde6 c5 5.b3 (5.h5 c4 6.Kg4
Kb7 7.Kf3 Ka6 8.Ke4 Ka5 9.Kd4 Kxa4 10.Kxc4 a5) (5.b4 cxb4 6.cxb4
a5 7.bxa5 Kb7 8.h5 Ka6) 5…b7 6.h5 Ka6 7.b4 (7.Kg4 Ka5 8.Kf3 c4)
7...cxb4 8.cxb4 Kb7 9.Kg4 a5 10.b5 Kc8 11.Kf3 Kd7 12.Ke4 Ke7
13.Kd5 Kd7 ½-½ .

In the meantime, I had initiated topics about this study in various
chess forums, mostly without telling the solution, but mentioning
that chess engines (badly) misevaluate the position long time far
from the solution. Chess is still only a game, and this study was
my humble attempt to spread the fun of chess and to mock en-
gines, especially knowing that striving to solve a puzzle does not
necessarily end when the engines are turned on.
However, in none of these forums was the study thoroughly ana-
lysed, until Jonas took it from a German forum and moved it to
the Rybkaforum, where…

The other side of the story (Peter's side)

…I found a thread in Rybkaforum, headed "Can Rybka solve this?" A member brought it here from a German chess forum, where the author showed the starting position, but did not give any solution or hints.

For several days, members of Rybkaforum could only guess what this position was about, but then someone found a breakthrough which got the discussions going: *"Rybka came up with an amazing position where the queen was helplessly out of the game. After that the real fight starts and the question becomes: Must White accept a draw or can he win? If you are a strong player or a good engine analyst, you will enjoy this challenge!"* The debate continued, questioning whether the solution starting as above was correct (leading to a win for white) and unique, as computer programs had absolutely no idea what to do with the resulting position. After another week, fascinated by the insolubility via computers, and after I had already started looking for the author in the German forum where the issue came from, MoKy in Rybkaforum found a well-hidden refutation (Black held the draw, even if it was by a single tempo and in a totally un-computer-like playing style). I didn't want to accept this was it, and the author did not give any sign yet, so I started slightly modifying the initial position, in the hope that I would find a version where the drawing variation wouldn't work – and I did find it!

In neither forum was another refutation reported, but the variation tree was still huge. Then the author finally posted another message in the German forum; he simply had not checked his messages there for a long time, and he had only learnt about the discussion in the Rybkaforum from me. He first requested some time to analyse the disputed variations, and half a day later, he thanked everybody for their efforts and acknowledged the refutation of the initial version of the study, as well as the correctness of my suggestion.
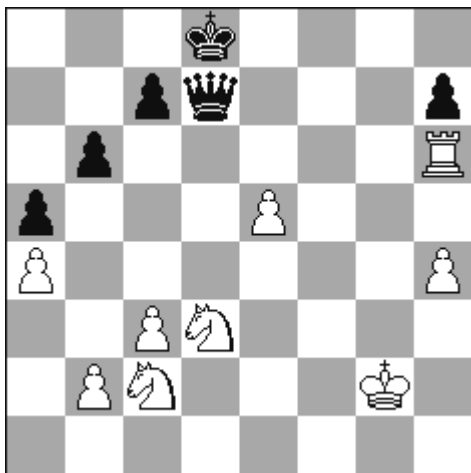
Peter's version with the Pawn on a5, which is a little less complicated than the final version.

Initially, the black Pawn was on a7, but after my suggestion it ended up on a5, but he pushed it back to a6, which I also see as the clearest (and aesthetically better) way of presenting the study. Computer programs still cannot see through the position, and only after showing them the first approximately 10 moves in each variation (depending on software, hardware and analysis time), they start evaluating the position as a win for White. We'll probably have to wait for another generation of chess software to see machines reliably solving such positions…