



Chess Botany - "Variational Debris"

In his book, *Think like a Grandmaster*, grandmaster Alexander Kotov introduced the concept of a “tree of variations,” or the collection of variations that need to be analyzed. In [part one](#) of this series we examined the “bare trunk,” in [part two](#) we discussed the “shrub,” and here we will investigate “variational debris.”

The term “variational debris” refers to a situation in which we must calculate a number of variations, each of which breaks down – more than once! – into sub-variations, some of them pretty long ones. This kind of task is exceptionally difficult; and there are few grandmasters – even among the elite – who can solve it consistently.

Training ourselves to calculate such positions is most useful: it allows the development of several vital habits for any chessplayer. I’d like to enumerate some of them:

- The ability to maintain concentration and disciplined thinking for the extended period required for solving the exercise;
- Resourcefulness;
- Calculating technique – first and foremost, the timely determination of every sensible candidate move, both for oneself and for one’s opponent, at different stages, followed by systematic checking; and
- The ability to clearly picture and, where possible, to accurately evaluate the great volume of positions arising in the course of our analysis.

Note the last point. Quite often, having begun the study of a variation, when we run into difficulties somewhere, or spot an interesting alternative a few moves earlier, we immediately switch over to the analysis of this new variation. And if we have to return to the previous variation later, we must then calculate it again, from the beginning, because we drew no conclusions about it. In order to avoid such a pointless waste of time and strength, I recommend that you stop periodically to fix in your mind the outcome of the work you have just done. And should you be unable to give a precise assessment at the moment, then a conditional one will do. For example, some position might arise by force, and appear quite promising (or the reverse: dangerous). Later, if you must come back to it, you may continue the analysis from this point, rather than the starting position.

For your consideration, I offer the following difficult exercise, which I am quite fond of. Not because it’s so complex (as if that were a goal in itself!), but above all because of the clear-cut nature of most of the variations that must be calculated before making a final decision.

Simagin – Leonovich
Moscow 1936



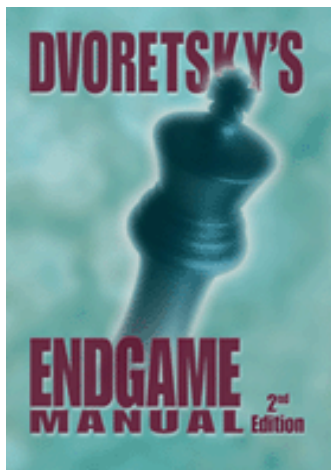
1.?

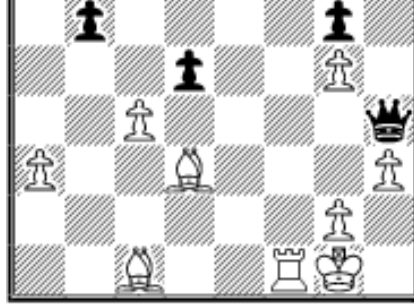
Give yourself some extra time (an hour, at least), and calculate the variations one after the other, until you can make an accurate assessment of each

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Mark Dvoretsky





final position. Count yourself successful if you come to the correct decision. Another important criterion of the success of your work will be the number of accurately calculated and properly evaluated variations and sub-variations, whether short or long, that you have rejected because of their inferiority – or, contrariwise: used them as the basis for your choice.

I must warn you, although I believe this problem is solvable in principle, so far not one of the grandmasters to whom I have offered it was able to solve it correctly – that is, to calculate accurately more than a greater or lesser part of the necessary variations.

Naturally, this gives rise to the question of whether it is right to set a task that, under tournament conditions, it would probably prove impossible to solve, especially considering there would most likely not be sufficient time in which to solve it? Arguing this question, as interesting and as important as it is, would take us too far afield. Let me just say that the well-known aphorism, “If schooling is hard, then battle will be easy!” is true not just in combat situations. Having trained yourselves to solve the most complex problems, you will find it easier to deal with any sort of problem over-the-board – both easy and complex.

One thing more: the game from which this exercise is taken is the first one from the best game collection of Vladimir Pavlovich Simagin. I treasure this little book, and at one time subjected it to careful study. The game was played in a second-category tournament! Despite his young age and modest chess qualifications, the grandmaster-to-be executed a pretty combination (it’s not really important whether the execution was flawless or not), which was overlooked by many solvers years later. Again, food for thought, concerning the inflation of rankings and titles, and the earlier and earlier appearance of chess talent, and of the possibility for full-fledged creativity, even in the early stages of a chessplayer’s development.

To begin: The first thing that catches our eye is that Black’s bishop is attacked, but that Black would recover the piece immediately by a queen check on d4.

Those of you who have spent some serious time on the position will probably already have figured out that the two main lines requiring deep and accurate analysis are 29 Bf4! and 29 Rf4!.

A bit of practical advice (being one facet of the “candidate moves” principle): when you can see that the calculation of an intended move will become too complex, it makes sense to lay it aside for awhile, and look for alternatives. It’s not impossible that a simpler path to your goal exists, which you haven’t yet considered. Let’s try to take this approach.

Taking the bishop is not so harmless: after 29 Qxb7?! Qd4+ 30 Rf2 Qxd3 31 cd, Black’s position is dubious. If White succeeds in consolidating, then both the powerful passed d-pawn and the exclusion of Black’s knight at h7 will gain importance. Such a position deserves a little more careful consideration; and perhaps we would go that way, if it were not for the powerful rejoinder 30...Qa1! (instead of 30...Qxd3?!) 31 Rf1 Qd4+, and draws. Here is the first clear variation of the many you will have to calculate.

29 Bxg6? fg 30 Rxf8+ Nxf8 31 Bb2 leads nowhere, because of 31...d4 32 Qxb7 Qe1+ 33 Kh2 Qe5+, when Black is at least guaranteed perpetual check.

This combination would work after 29 Kh2?! Ba6? 30 Bxg6! fg 31 Bb2 d4 32 g3+-. But Black has quite a sufficient answer in 29...Qd4!, which assures him an excellent position.

One more try: 29 Qe5?! dc 30 Bb2. In the variation 30...Nf6?! 31 Rxf6 gf 32 Qxf6 Qh7 33

Bxc4, White would have full positional compensation for the exchange sacrifice, although it would not be clear whether he could hope for any advantage. A safer line for Black would be 30...f6 31 Qe6+ Kh8 32 gf Nxf6.

It looks as though there is no quick way for us to find, which means there's no getting away from calculating the main lines.

First, let's calculate the complex combination that begins with an attack on the enemy queen.

29 Rf1-f4!? Qh4-g3

Of course not 29...Qh5? 30 Be2 Qxg5 31 Qxb7+-.

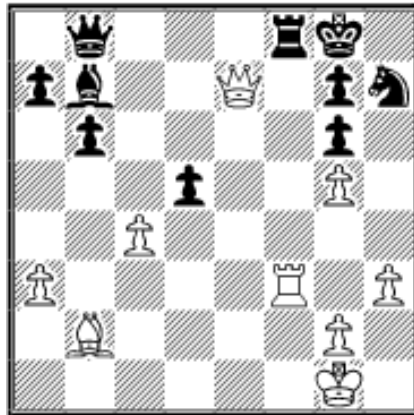
30 Rf4-f3

After the mistaken 30 Bxg6? fg (30...Nxc5 31 Bf5 Bc8 32 Bxc8 Rxc8 is also possible) 31 Bb2 d4! 32 Rxf8+ Nxf8 33 Qxb7 Qe3+ 34 Kh2 Ne6, the advantage passes to Black.

30...Qg3-b8

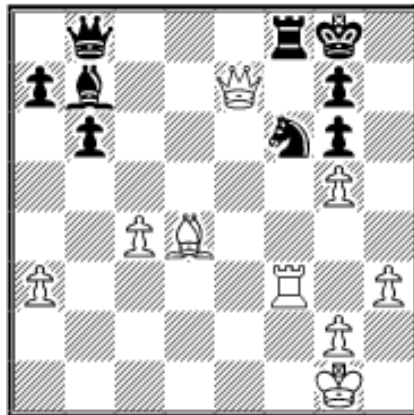
The queen defends the bishop, but now comes a powerful kingside blow.

31 Bd3xg6! f7xg6 32 Bc1-b2



Threatening mate. Play now divides into two practically equal variations, each one difficult to bring to a logical conclusion.

32...d5-d4!? 33 Bb2xd4 Nh7-f6

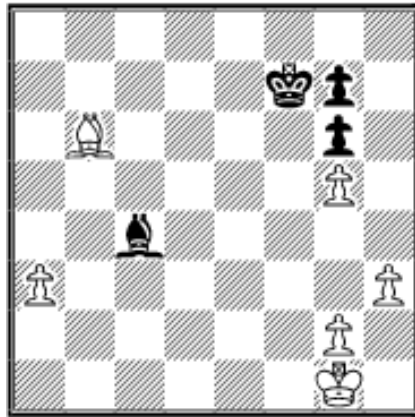


1.?

Black tossed a pawn, so as to attack the white rook. For this reason, 34 gf? Rf7 won't work.

34 Bd4xf6! g7xf6

34...Rf7? would lead to an opposite-colored bishops endgame: 35 Qxf7+! Kxf7 36 Be5+ Bxf3 37 Bxb8 Be2 38 Bxa7 Bxc4 39 Bxb6:



Let's assess this position. Not only is White two pawns up, which certainly doesn't always guarantee victory in an opposite-bishops ending, but he can also bear down on the weak pawn at g7 with his bishop. His king will go to the queenside to support the passed pawn, so Black's king will have to move to meet him. Then the bishop takes on g7, after which his three-pawn advantage should be enough to win.

35 Rf3xf6!

Of course not 35 gf? Rf7.

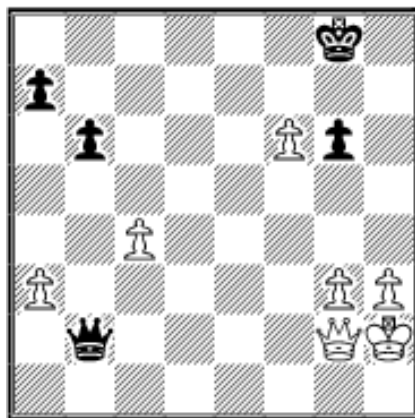
35...Qb8-e8!

35...Rxf6 is weaker: 36 gf Qf8 37 Qxb7 Qxf6 38 Qb8+.

36 Qe7xb7!

36 Rxf8+ Qxf8 37 Qxb7 Qxa3+/- is less promising for White.

36...Qe8-e1+ 37 Kg1-h2 Qe1-e5+ 38 g2-g3 Rf8xf6 39 g5xf6 Qe5-b2+!? 40 Qb7-g2



This position comes about more or less by force Black must now choose one of two possible queen endgames.

40...Qb2xf6

Another possible way is 40...Qxa3!? 41 Qd5+ Kf8 42 Qe6± (or 42 h4±).

41 Qg2-a8+ Kg8-h7 42 Qa8xa7+ Kh7-h6 43 Qa7-a8 Qf6-b2+ 44 Qa8-g2 Qb2xa3±

In both cases, White is a pawn up, with real chances to win – and Black also has real chances to draw. A more definite evaluation could only come after a detailed analysis – which is not our job here. In a practical game, it makes sense to extend our analysis only to the end of a forcing variation. After that, we need to stop, evaluate the position, and switch over to the examination of other continuations.

32...Nh7-f6! 33 g5xf6

Here, 33 Bxf6 gf 34 Rxf6 Qe8= no longer works; however, in contrast to the 32...d4 variation, we can now take the knight with the pawn.

33...Rf8-f7



1.?



It's not difficult to see that the combination 34 Qxf7+ Kxf7 35 fg+ Kg8! is only good enough to draw: 36 Rf8+ Qxf8 37 gfQ+ Kxf8=. So that means we must retreat the queen – but where?

After 34 Qe6 dc, White's rook is *en prise*: 35 Rf2 runs into 35...Qc8, and 35 Re3, into 35...gf 36 Bxf6 Qc8. Here, White hasn't the shadow of an advantage.

One idea that comes to mind is to drop the queen back, and then play Re3 (on an open file, the rook should, as a rule, be stationed in front of the queen). But after 34 Qe2 d4!, the rook would be attacked, the e3-square inaccessible, and Black would follow up with 35...gf.

34 Qe7-e1!!

A delicate move! From here, the queen might sally forth to h4, but the main thing is that it protects g3, making it safe for the rook.

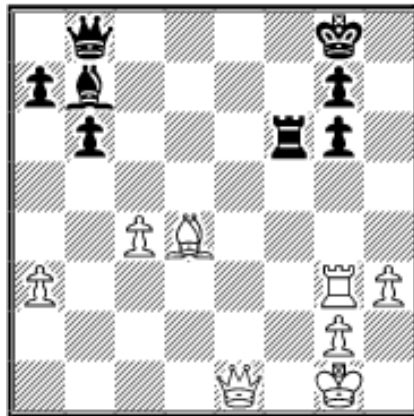
34...d5-d4!

34...dc? is altogether bad: 35 Re3 Bc6 36 fg. Nor does 34...gf? help: 35 Bxf6 dc 36 Qh4 Rh7 37 Qxc4+ Rf7, and now either 38 Be5 Qe8 39 Rf6+-, or 38 Qh4 Rh7 39 Qg4 Qe8 40 Rd3+-.

35 Rf3-g3! Rf7xf6

Two unpleasant alternatives are 35...Qd6 36 fg or 35...gf 36 Rxc6+ Rg7 37 Qe6+ Kh7 38 Rxc7+ Kxc7 39 Qg4+ Kf7 40 Qxd4, although here the battle might still continue (in the latter variation, after 40...Qe5!).

36 Bb2xd4



1...?

On 36...Rc6?, 37 Qe7 decides. After 36...Rf7?! 37 Rxc6, Black's position is lost: he's a pawn down, and his opponent still has a dangerous attack. But the rook has one other square:

36...R6-d6!

Black is not afraid of 37 Be5 Qe8, nor of 37 Qe5 Qf8+/. If 37 Bxc7 (expecting 37...Kxc7? 38 Qe5 + and 39 Rd3+-), then Black has 37...Rd1! 38 Qxd1 Qxc3=.

37 Rg3-c3! Rd6xd4! 38 Re3-e8+ Qb8xe8 39 Qe1xe8+ Kg8-h7 40 Qe8-f7 Bb7-c6 41 Qf7xa7

41 g4!? might actually offer slightly better practical chances.

41...Rd4xc4 42 Qa7xb6 Rc4-c1+ 43 Kg1-f2 Rc1-c2+ 44 Kf2-e3 Bc6xc2

This ending is almost certainly drawn.

Now let's look at the alternative line on the first move, the one which occurred in the game. Simagin executed a surprising and beautiful idea that involves trapping the enemy queen.

29 Bc1-f4! Bb7-a6

29...Bc8 30 cd is hopeless.

30 Bd3-e2!?



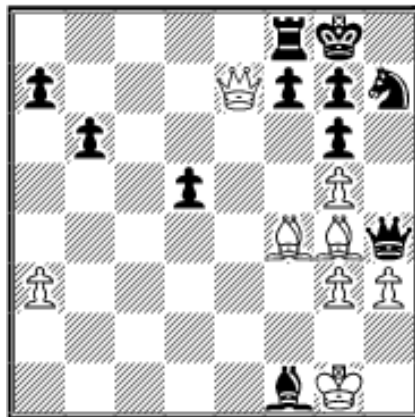
Threatening 31 Bg4 and 32 g3. Black's response was unfortunate: **30...f6?**, expecting 31 Bg4? Nxg5 32 Bxg5 Qxg5 33 Be6+ Kh7 34 Qxf8 Qe3+ 35 Kh1 Qxe6. The game continued: **31 Qe6+! Kh8 32 g3 Nxg5** (32...Bc8 is no help: 33 Qxc8 Rxc8 34 gh) **33 Qe7!** (33 Qd6! also works) **33...Nxh3+ 34 Kg2 Nxf4+ 35 Rxf4** and Black resigned.

What Black had to do was grab everything that came to hand, against the time when he would have to give up his strongest piece.

30...Ba6xc4 31 Be2-g4 Bc4xf1

31...Nf6? would lose: 32 g3 Qh8 33 gf Bxf1 34 Bd6 Ra8 35 Be6 (Motylev).

32 g2-g3



Simagin continued this variation as follows: 32... Qxh3 33 Bxh3 Bxh3 34 Qxa7, and *White must win, after overcoming certain technical difficulties*. However, Black's defense can be strengthened.

32...Qh4xg4! 33 h3xg4 Bf1-c4 34 Qe7xa7

34 a4 could be met either by 34...a6 or 34...b5.

34...b6-b5

White can't create a passed pawn on the queenside, nor does he have any active kingside possibilities left. If Black succeeds in getting his knight to e6, the initiative passes to him. White's best course here is to force the draw by chasing the enemy rook along the eighth rank with his queen and bishop (since it's not possible to interdict all eight squares with just two pieces).

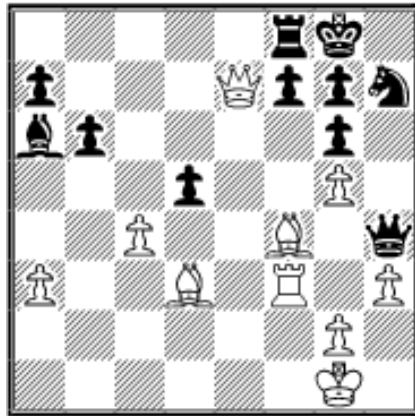
Simagin also mentions 32 Kxf1!?, without further analysis. I don't believe it's that dangerous to Black, who can try different approaches. For example, 32...Nf6 33 g3 Qh8 34 gf gf 35 Bd6 Ra8, or 32...Nxg5!? 33 g3 Qh8 34 Bxg5 f5 35 Qe6+ (35 Bf3 Qxh3+ 36 Bg2 Qxg3 37 Bxd5+ Kh7 38 Qxf8 Qd3+) 35...Kh7 36 Bf3 Rc8 37 Bxd5 Qe8, both with roughly equal chances.

It appears that we have been unable to demonstrate a convincing advantage for White after all. With accurate defense, Black retains real saving chances in all lines.

I considered this analysis complete, and was planning to hand over this piece for publication, but then I used it one more time in a training session with grandmasters Alexander Motylev and Vladimir Potkin. After the exercise, Motylev returned to the position and uncovered a promising new line for White, stronger than those examined previously. His idea looks natural enough, and not too complex; but of course, this is only after it was actually discovered – for some reason, it had never previously occurred to anybody. On the one hand, this is yet another demonstration of the colossal practical value of the “candidate moves” principle. On the other, it shows how difficult it can be to know how to use that principle, and consequently how important it is to train that habit regularly.

The first move of this idea is the same one Simagin played, but now a totally different plan is involved.

29 Bc1-f4! Bb7-a6 30 Rf1-f3!



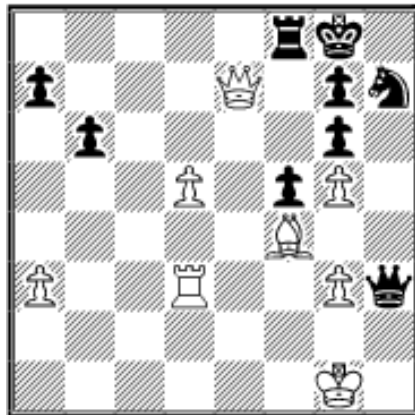
1...?

The point to getting the rook off the first rank appears in the short variation: 30...Bxc4? 31 Bxg6! fg 32 Be5, when Black is defenseless.

Let me point out here that, in the analysis of previous variations, it was necessary to calculate all the way to the end, because their assessment was completely unclear, and dependent upon tactical nuances which came up at various stages of the calculations. Motylev's discovery is excellent also in that, once the first two moves

(and the idea involved) are found, a practical player would be completely justified in stopping his analysis right there, and going in for this position. Because, for now at least, White is sacrificing nothing – on the contrary, he's strengthened his position; and his opponent will find it quite difficult to come up with even the most minimally acceptable counter to the threatened bishop sacrifice on g6.

If 30...f5, for example, the decisive reply is 31 cd! Bxd3 32 g3! Qxh3 33 Rxd3:



The d-pawn threatens a quick march to the eighth rank, Black's queen is out of play and unable to help its other pieces. Here's one possible continuation: 33...Rf7 34 Qe8+ (equally powerful is 34 Qe5 Nf8 35 d6 Qg4 36 Qd5! Qe2 37 Re3 Qc2 38 d7!+-) 34...Nf8 35 d6 Rd7 36 Qa8! (or 36 Qe5!) 36...Qg4 37 Qd5+ Kh7 (37...Rf7 38 Re3 and 39 Re7) 38 Rd2, and the only way Black will be able to cover the yawning wound on the h-file will be to give up the queen.

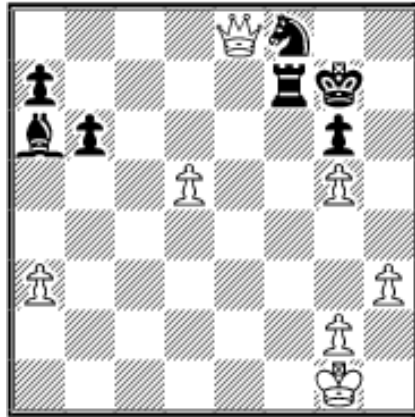
The most stubborn defense involves retreating the king into the corner, in order to be able to defend the weakness at g7 by Rg8.

30...Kg8-h8!

Now White has a new task: selecting the optimal way to win from among several tempting possibilities, all of which give him the advantage.

The bishop sacrifice on g6 works here as well.

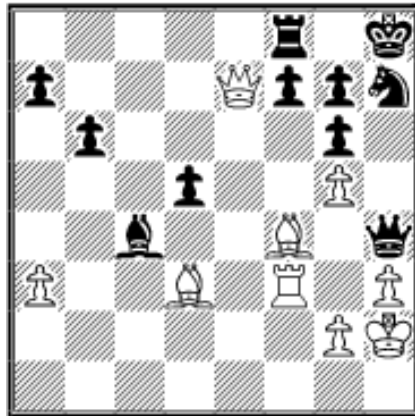
31 Bxg6!? fg 32 Be5 Rg8 33 Bxg7+! (but not 33 Rf7? Nxg5, and taking on g7 allows Black a perpetual after sacrificing the knight on h3 or f3) 33...Rxc7 34 Qe8+ Rg8 35 Qe5+ Rg7 36 Rf7 Qe1+! (stopping the mate requires giving up the queen) 37 Qxe1 Rxf7 38 Qe8+ Kg7 39 cd Nf8:



Black has rook, bishop and knight for the queen and two pawns – approximate material equality. And although a pawn storm against his king is a very real threat, there is no assurance that this attack will succeed. One would like to find something more convincing.

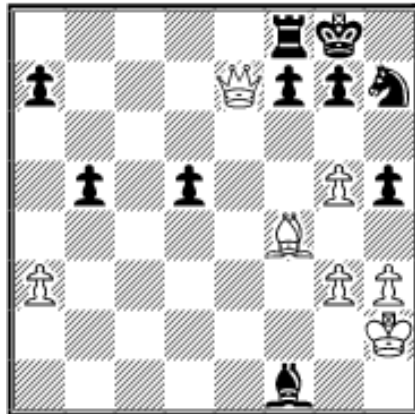
It's well-known that sometimes the threat can be considerably stronger than its immediate execution. So it is here: the sacrifice needs to be delayed a bit.

31 Kg1-h2! Ba6xc4



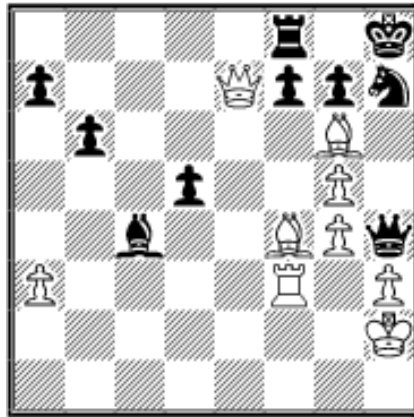
1.?

Again, a difficult choice must be made. For besides the blow on g6, there is once again the tempting idea of trapping Black's queen. Here's a possible variation: 32 Bc2!? b5 33 g3 Qh5 34 Bd1 Kg8 35 Rf1 Bxf1 36 Bxh5 gh:



White has an indisputable advantage; yet once again, it's unclear whether it would be enough to win.

The bishop sacrifice could be executed at once; or it could be prepared with 32 g3 Qh5 33 g4 (the consequences of 33 Kg2!? Rg8 or 33...a6 are not completely clear) 33...Qh4, and only now 34 Bxg6:



1...?

34...fg is hopeless: 35 Bg3 Qxh3+ 36 Kxh3 Rxf3 37 Kg2 Rf8 38 Be5 Rg8 39 Qf7!?. However, Black has an outstanding *zwischenzug*: 34...Be2!! After 35 Qxe2 fg 36 Kg2 (or 36 Qe5), we see the same old picture once again: White has the advantage, but no assurance he can win with it.

There remains only to check out the immediate blow against g6 – with the pawn still on g2.

32 Bd3xg6! f7xg6 33 Bf4-e5 Rf8-g8 34 Be5xg7+! Rg8xg7 35 Qe7-e8+ Rg7-g8 36 Qe8-e5 + Nh7-f6!

36...Rg7 37 Rf7 is weaker.

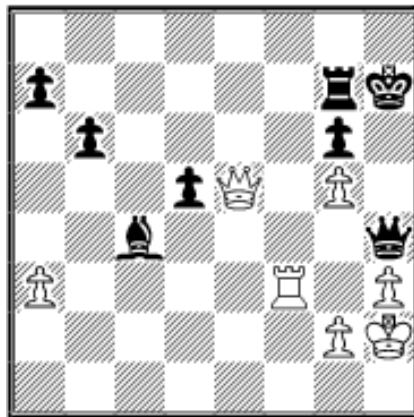
37 Qe5xf6+

37 Rxf6? Qe4 = or 37 gf? Rf8 (37...Qh5) 38 Rf4 Qh6 would cost White the win.

37...Rg8-g7 38 Qf6-e5!

Black will soon have to give up the queen to ward off the threats to his king. On 38...d4 39 Rf4 Qh5 40 Rxd4 b5 41 Kg3, with 42 Rh3 to follow, White will have no difficulty converting his material advantage.

38...Kh8-h7



1.?

Now the straightforward 39 Rf4 Qh5 40 Kg3 would allow Black to keep on fighting after 40...d4! 41 Rh4 Qxh4+ 42 Kxh4 d3, or 41 Rxd4 Bf1!! 42 Rh4 Qxh4+ 43 Kxh4 Bxg2.

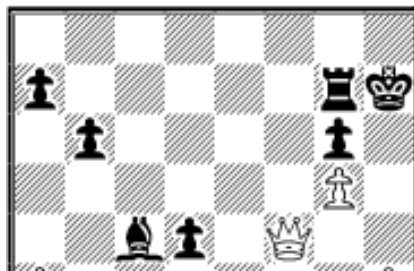
39 Rf3-f8! d5-d4!

The only defense against the killing threat of 40 Qb8.

40 Rf8-f4 Qh4xf4+

The variation 40...Qh5 41 Rxd4 b5 42 Kg3 is one we have already seen.

41 Qe5xf4



In order to hold onto his d-pawn, Black has to move his rook to d7, where it will be exposed to attacks from the white queen. Motylev extends this variation as follows: **41...Rd7 42 h4! d3 43 h5 d2** (or 43...Bf7 44 Qf3!! d2 45 hg+ Bxg6 46 Qh3+ and 47 Qxd7) **44 hg+ Kg7** (44...Kxg6 45



Qf6+) **45 Qf6+** (45 Qe5+ Kf8 46 g7+ Rxc7 47 Qf4+ and 48 Qxd2+- is just as good) **45...Kg8 46 g7 Rxc7** (46...d1Q 47 Qf8+ Kh7 48 g8Q+! Bxc8 49 Qh6 mate) **47 Qd8+ Kh7 48 Qxd2**, and Black will almost certainly be unable to hold the fortress he erects.

 [TOP OF PAGE](#)

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