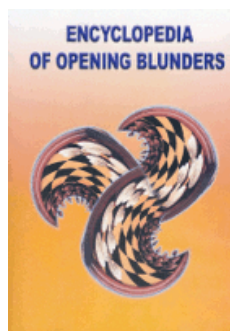




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The New Rybka 4 Aquarium Opening Book

The title of this column implies three things:

- Rybka 4 will be released soon, stronger than ever.
- Aquarium 4, a new version matching Rybka 4, will also be introduced, with loads of improvements, some of which have been described in my recent columns. Additionally an update to Aquarium 2010 (4.0.3) will also be released as a free update for current customers.
- Last, but not least, a new Rybka 4 Aquarium opening book will be released with thoroughly researched and up-to-date collection of modern opening lines.

These are exciting announcements for Rybka and Aquarium users. It has been a long wait for Rybka 4, but it will be worth it. With Aquarium now being used at the highest levels of chess competition, it is bound to catch the attention of many new players. However, the subject of this column is the Rybka 4 Aquarium opening book, which was prepared by Rybka team member Jiri Dufek.



Jiri Dufek

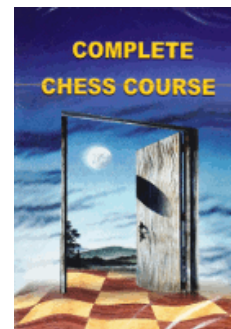
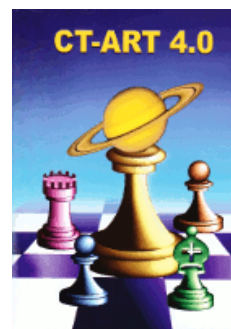
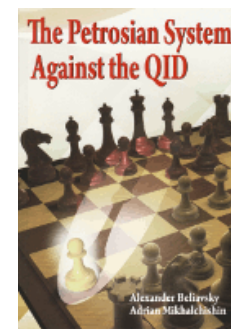
Jiri has been playing chess since the age of six, when his grandfather taught him how to play. He holds a title of national master, as well as being an international master of correspondence chess. His hobbies include computer chess and collecting chess books. He has authored the opening books for Rybka's official competitions where his choice of solid but active repertoire, often involving little explored lines, proved to be a great success. He has also been very successful in freestyle chess, with his latest triumph being a victory in the Mundial Chess tournament earlier this year. Jiri wrote the book *Bijte francouzskou!* (Beating the French) along with his friend and long-time associate IM Roman Chytil. Jiri no longer plays over-the-board chess, but focuses instead on opening analysis and chess analysis in general. Jiri is an IT system administrator by profession. With this background, and his obvious passion for chess, Jiri is clearly an ideal team member of any chess or computer-chess team.

Jiri was kind enough to answer some questions regarding the new Rybka 4 opening book, but I couldn't resist also asking him about his work for Veselin Topalov in the world championship match against Viswanathan Anand and the analysis tools he used in the match.

Dadi Jonsson: You are in the enviable position of being a member of the Rybka team, as well as Topalov's analysis team. Additionally, you are the only new member of the Topalov team in his match against Anand. What is the story behind you joining the Topalov team?

Jiri Dufek: As a reward for my result in the Mundial Chess freestyle tournament, I was invited to the Linares tournament site to play a game against Veselin Topalov. During my stay in Linares, I met Veselin's seconds –

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Jan Smeets and Erwin l'Ami. After my game against Topalov, which ended in a draw, I also got a chance to speak to the master himself.



Veselin Topalov vs. Jiri Dufek

We discussed chess in general, openings, chess engines and the differences between human chess and the world of chess engines. Shortly after I returned home, I recieved an invitation from Silvio Danailov to join Topalov's team for his match against Vishy Anand.

DJ: I am sure that your expert opening knowledge played a big role in Topalov's decision to ask you to join his team. However, knowledge of computers and advanced analysis methods plays a larger role now than in any previous world championship match. Do you think that your extensive experience and knowledge in these areas also factored in Topalov's decision?

JD: This question is more complicated than it looks at first sight. Firstly, Topalov and grandmasters in general have their own ideas on how to play the openings. Their priorities are completely different from those normally applied when preparing opening books for chess engine matches. There is no interest at all in long lines that may lead to a draw after dozens of precise moves. Memorizing lines is difficult and time-consuming, with little hope of practical reward. It is simply a bad investment of match preparation time. Therefore, a good chess engine book author is not automatically a good assistant for human opening preparation. He must be flexible and adapt to the different requirements.

Secondly, I often checked existing analysis, looking for improvements or used "my methods" to analyze lines, which were considered important for the match. In each instance my conclusions agreed with the analysis of the other team members. The quality of opening analysis at this level is extremely high, but of course every team member makes an important contribution to the preparations. I have the greatest respect for the other team members. They have proven time and again that they are second to none in opening preparations and more than once they have stunned the chess world with their opening novelties.

Thirdly, my computer background has allowed me to provide IT support for our team. You could say that I have been the team's "IT Department."



Veselin Topalov and Jiri Dufek

DJ: Your Rybka 4 Aquarium opening book will be released soon. It is clear that you put a huge amount of work into the book.

JD: Yes, I put a lot of work into it. It helps that I find it really interesting to analyze unknown positions and ideas from chess books, chess practice, and computer games to find my own solutions. Today's opening preparation is very deep. In some cases players know their lines from the opening all the way to the endgame. A less prepared opponent will probably lose his way somewhere in the middlegame against such preparation. Things are looking even worse in computer games – long lines, often fifty moves or more, leading to a draw are similar to pre-arranged draws in human games.

The technical advances mean that opening analysis is very different from a few years ago, not to mention a few decades ago. However, even with today's amazing computer tools, the work of the modern opening book author is still very demanding.

My method of creating a strong opening book consists of several steps. Assuming you already have a good database, the first step is the selection of games. Making a good hand-typed book is impossible. The selected games serve as the "raw material," and generate the initial version of the book. This step may only require a few hours of work. The next step is to fine-tune the move priorities. This is a very time consuming task, and in the case of the Rybka Aquarium book, it took a few weeks.

Testing the book is an independent process. First you run a test, then you look at the results, and try to find weak points in the book. After further analysis, you may find some improvements, which require updates to the book and another test cycle must be run. This process will take a few days.

Last, but not least is the creative phase of making an opening book. Here you need to find new ideas and get a deeper understanding of the lines in the book. One recurring question in this phase is why engines give a low evaluation, or play poorly in positions that are very good according to my own understanding of the position. This phase is not only very time consuming, it also needs a lot of creativity and manual interaction and guiding of the engine analysis.

DJ: You made a very successful opening book for Rybka-Cluster. Did some secrets from that book make it into the Rybka Aquarium opening book?



Rybka Cluster currently runs on 13 powerful computers

JD: Yes, I moved priorities from the tournament book that I used with Rybka-Cluster to the Aquarium book. It is safe to say that the Aquarium book includes around ninety-five percent of the Rybka-Cluster book that I used in official tournaments. However, the Aquarium book is much larger and contains a lot of new material and analysis, up-to-date games, etc.

DJ: How would you describe your opening book? Is it a "narrow" book, covering a few selected openings deeply or is it a "wide" book containing most openings that arise in practice?

JD: Generally, the book is relatively wide, covering many openings and variations. I wanted to offer two different ways of playing every opening, but sometimes I ended up with only one, because I felt that it was the best way to handle the position.

A narrow book might score pretty well in the short term, and I would have chosen that path if a high score in engine matches was my only goal. However, I wanted the Rybka Aquarium book to address the needs of a much wider audience, which means that a much greater number of openings must be covered. This is why I added many openings that are popular in human play. The variations are color coded with green color (recommended moves), red (not recommended), blue (recommended for human tournaments, but not computer tournaments) and black (neutral moves). Aquarium allows users to juggle the move priorities based on the color codes, so it is easy, for instance, to use the book as a "tournament book" in chess engine matches.

Although I have a wide range of users in mind for this opening book, I am not sure that it will suit everyone. The first group I am targeting is, of course, Rybka users and chess engine fans in general. They will find up-to-date information about their openings. The second group would be everyone who wants something new, be it new opening ideas or new opening setups. Last, but not least, I tried to make it a thoroughly researched and up-to-date general opening guide for the tournament player. Though I think it might even be useful for grandmasters, I think they haven't caught on to the opening developments in the chess engine world and still prefer their current methods of opening preparation. On the other hand, I would be extremely interested in getting feedback from grandmasters. Perhaps it will be useful for my next opening book.

From the white side, the main repertoire of the Rybka Aquarium book is based on the Sicilian Najdorf Variation with 6.Be2/h3/Be3/Bg5, Caro-Kann with 3.e5, Ruy Lopez, French with 3.Nc3 and 3.e5, Catalan, classical King's Indian Defense with 9.Ne1 and 10.Be3, the Exchange Variation of the Grünfeld Defense, Nimzo-Indian Defense with 4.f4, etc.

For black there is the Sicilian Kan Variation (e6+a6), which proved to be very successful for Rybka-Cluster in official tournaments, the Sicilian Najdorf Variation and the Rauzer Variation with Bd7, Caro-Kann and Ruy Lopez (Berlin Wall and Jaenisch). After 1.d4, there is the Grünfeld Defense and a lot of Slav Defense (Chebanenko 4...a6) and Semi-Slav analysis as well as the Nimzo-Indian Defense – where I used my openings from the Rybka-Cluster opening book.

DJ: When Jeroen Noomen's opening book for Aquarium was released he said that "IDeA is the best opening book tool at this moment." Do you use IDeA in

your opening analysis?

JD: Yes, for opening analysis there is no better solution, because it allows you to find some very interesting, "non-human" continuations that would be hard to find otherwise. I emphasize quality over quantity, so I prefer to give the engines a longer time for the analysis of each position – this means that I use automatic IDeA tree expansion, and, as the analysis progresses, I check analysis tree, compare the results with my own notes and decide which positions are important and analyze them more deeply. For analyzing the middlegame I still use my own, much simpler methods, to decide which move to play, but my IDeA analysis is constantly running.

DJ: Do you use the new features of IDeA in Aquarium, such as remote engines?

JD: I really like the option to use remote chess engines. It is small revolution for IDeA and it really works! For critical positions I run the analysis from my PC connected to approximately forty remote engines, located in four different places of the world. For smaller projects I often use slower computers with only local engines.

DJ: Did you develop the Rybka 4 Aquarium book using the opening book tools of Aquarium itself?

JD: I use Aquarium both because it allows very fast addition and editing moves in the book and while I am doing that I can have chess engines analyzing one or more positions in the background. Aquarium has many advantages and useful features for the serious player, such as for analyzing individual positions or whole games; it is also good for basic work with databases and of course the option to use remote engines for analysis. On the other hand, features such as playing against the engine are of no use to me, regardless of the GUI (smile).

DJ: Which opening line did you spend the most time on?

JD: It is very difficult to answer. Probably the Sicilian Najdorf was the most time consuming, but still I am not one hundred percent sure about truth in this opening. I probably got the biggest kick out of analyzing the Jaenisch Gambit in the Ruy Lopez, because very often the best moves according to the chess engine are not really the best.

But this is not all. I added about 700 variations to the book in different openings, many of which are seldom seen in tournament books. The main purpose was to make the Rybka Aquarium book more useful for players. In other words, there are continuations of sidelines that improve existing theory or recent games – look and you will see!

DJ: Can you show us a few interesting novelties from the book?

JD: Sure. There are many to choose from, but I'll start by showing my oldest novelty, which dates all the way back to 2004.

[A16] English Opening

1.Nf3 Nf6 2.c4 g6 3.Nc3 d5 4.Qa4+ c6 5.cxd5 Nxd5 6.Qd4 f6 7.e4 e5 8.Nxe5 Nxc3 9.Qxc3 Qe7 10.Nf3 Qxe4+

This line is now out of fashion, but I can't wait any longer to show my novelty.



11.Kd1! +=

[A30] English Opening, Hedgehog System

The Hedgehog is very popular at all levels of play. However, recent research shows that black faces some problems. Here are two examples.

1.c4 c5 2.Nf3 Nf6 3.Nc3 e6 4.g3 b6 5.Bg2 Bb7 6.O-O Be7 7.Re1 a6 8.e4 d6 9.d4 cxd4 10.Nxd4 Qc7 11.Be3 Nbd7 12.Rc1 O-O 13.f4 Rfe8 14.g4 Nc5 15.Bf2 g6 16.b4 Rad8



17.Bf3!

Here is another Hedgehog novelty:

1.c4 c5 2.Nf3 Nf6 3.Nc3 e6 4.g3 b6 5.Bg2 Bb7 6.O-O Be7 7.Re1 a6 8.e4 d6 9.d4 cxd4 10.Nxd4 Qc7 11.Be3 Nbd7 12.Rc1 O-O 13.f4 Rac8 14.Bf2 Rfe8 15.e5 Bxg2 16.exf6 Ba8 17.fxe7 Qb7 18.Kf1 Qg2+ 19.Ke2 e5 20.Rg1 Qh3



21.Nc2+/-

[A65] Benoni Defense

I am a very big proponent of the Benoni, but now the only top player who likes it is GM Gashimov. There is a recent theoretical book about interesting ideas in the Benoni and I checked a few of them. However, let's first look at a very aggressive line:

1.d4 Nf6 2.c4 c5 3.d5 e6 4.Nf3 exd5 5.cxd5 d6 6.Nc3 g6 7.e4 Bg7 8.h3 a6 9.

a4 Nbd7 10.Bd3 Nh5 11.O-O Ne5 12.Be2 Nxf3+ 13.Bxf3 Qh4



And now the rook lift **14.Ra3!** looks very unpleasant for black.

[B80] Sicilian Defense

I wanted to skip the Sicilian Najdorf, but it was not possible, of course. It was really torture for me. In the end, I found a totally new way of playing one of the main lines, which is now under extreme pressure.

1.e4 c5 2.Nf3 d6 3.d4 cxd4 4.Nxd4 Nf6 5.Nc3 a6 6.Be3 e6 7.f3 b5 8.Qd2 Nbd7 9.g4 Nb6 10.a4 Nc4 11.Bxc4 bxc4 12.g5 Nd7 13.f4 Qc7 14.O-O



14..g6!?

[C06] French Defense

I am a big fan of the French Defense. However, in recent months Black's life has not been so simple. Here is another source of worry for Black: a little bishop move and Black has problems to solve.

1.e4 e6 2.d4 d5 3.Nd2 Nf6 4.e5 Nfd7 5.Bd3 c5 6.c3 Nc6 7.Ne2 cxd4 8.cxd4 f6 9.exf6 Nxf6 10.O-O Bd6 11.Nf3 Qb6 12.Bf4 Bxf4 13.Nxf4 O-O 14.Qd2 g6



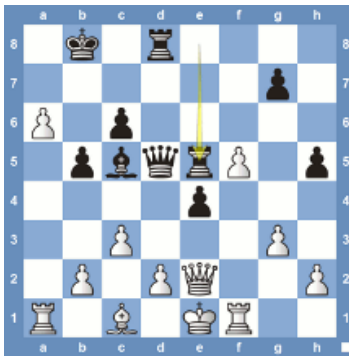
15.Bb1!

[C63] Ruy Lopez. Jaenisch Gambit

The Rybka Aquarium book includes full coverage of the Jaenisch Gambit – everything is engine-checked and I made a lot of new analysis to support this interesting opening. Here are some "normal" (remember that this is the Jaenisch!) positions covered by the book:



With compensation.



Equal.



Large advantage to Black.

[C92] Ruy Lopez. Zaitsev Variation

From time to time I tested my book on Playchess. I was surprised, when I found the following line to be very popular.

1.e4 e5 2.Nf3 Nc6 3.Bb5 a6 4.Ba4 Nf6 5.O-O Be7 6.Re1 b5 7.Bb3 d6 8.c3 O-O 9.h3 Bb7 10.d4 Re8 11.Nbd2 Bf8 12.a4 h6 13.Bc2 exd4 14.cxd4 Nb4 15.Bb1 c5 16.d5 Nd7 17.Ra3 Nb6 18.a5 Nd7

This looks pretty dubious for Black. However, Black scored about sixty-six percent after the "normal" continuation **19.Nf1 f5!**. When I first saw this method of playing, I felt that there had to be a simple countermeasure. I think that I succeeded in finding a simple solution, although finding it took more time and effort than I had expected.



19.Nh2! c4 20.Rg3! with very strong attack, but you can check the full analysis after 19.Nh2 in the book.

[D27] Queen's Gambit Accepted

The Queen's Gambit Accepted is very popular nowadays, and often white players choose strange sidelines, because the mainline is holding for Black. This is not true after

1.d4 d5 2.c4 dxc4 3.Nf3 Nf6 4.e3 e6 5.Bxc4 c5 6.O-O a6 7.Bb3 b5 8.a4 b4 9. e4 Bb7 10.e5 Ne4 11.Nbd2 Nxd2 12.Bxd2 cxd4 13.Ng5 Be7 14.Qh5 Bxg5 15.Bxg5 Qd7

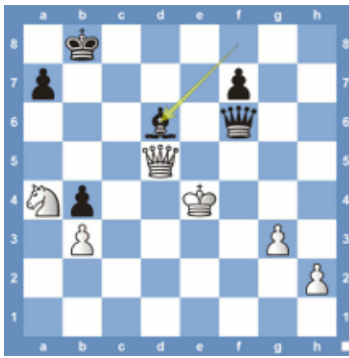


Here White has the subtle move **16.Rfd1!** and you can check the Rybka Aquarium book to see that life is very hard for Black after 13.Ng5.

[D44] Semi-Slav, Botvinnik Variation

The Botvinnik system has been a popular opening for the last thirty years. The theoretical debate is very, very deep and it looks like it will soon end in a simple endgame. The Rybka Aquarium Book includes the latest development of this line. After the moves

1.d4 d5 2.c4 c6 3.Nf3 Nf6 4.Nc3 e6 5.Bg5 dxc4 6.e4 b5 7.e5 h6 8.Bh4 g5 9. Nxc5 hxc5 10.Bxg5 Nbd7 11.g3 Bb7 12.Bg2 Qb6 13.exf6 O-O-O 14.O-O c5 15.d5 b4 16.Na4 Qb5 17.a3 Nb8 18.axb4 cxb4 19.Qg4 Bxd5 20.Rfc1 Nc6 21.Bxd5 Rxd5 22.Rxc4 Rxc4 23.Qd4 Kb8 24.Rxc6 Rxc6+ 25.fxg3 Qxc6 26.Rd1 Qc7 27.Kf1 Rh5 28.Qd8+ Qc8 29.b3 Rd5 30.Rxd5 exd5 31. Qxd5 Qa6+ 32.Kg2 Qe2+ 33.Kh3 Qf1+ 34.Kg4 Qe2+ 35.Kg5 Qe3+ 36. Kh4 Qh6+ 37.Kg4 Qg6+ 38.Kf3 Qxf6+ 39.Ke4 Bd6, your engine will probably show something around 0.00, but do you really want to play this position as black over-the-board?



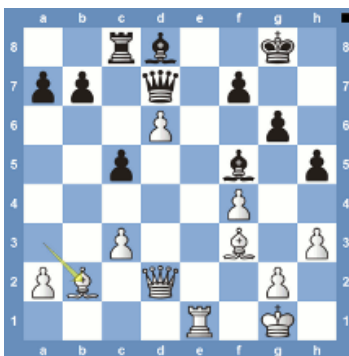
[D85] Grünfeld Defense, Exchange Variation

The system with Rb1 and Be2 in the Grünfeld is still very dangerous for Black. Many theoreticians have liked the system with Be5-c7-a5. However, in the recent months Black has faced a lot of trouble here. I did my best to revitalize this line.

1.d4 Nf6 2.c4 g6 3.Nc3 d5 4.cxd5 Nxd5 5.e4 Nxc3 6.bxc3 Bg7 7.Nf3 c5 8. Rb1 O-O 9.Be2 Nc6 10.d5 Ne5 11.Nxe5 Bxe5 12.Qd2 e6 13.f4 Bc7 14.O-O exd5 15.exd5 Ba5



For example, **16.d6 Rb8 17.Ba3 Bf5 18.Rbc1 Rc8 19.Bf3 Qd7 20.Red1 Rfe8 21.Rfe1 Rxe1+ 22.Rxe1 Bd8 23.h3 h5 24.Bb2**



24...c4! =

[D97] Grünfeld Defense

The system with 7...a6 is the main weapon. One of the key positions arises after the moves

1.d4 Nf6 2.c4 g6 3.Nc3 d5 4.Nf3 Bg7 5.Qb3 dxc4 6.Qxc4 O-O 7.e4 a6 8.e5 b5 9.Qb3 Nfd7 10.h4 c5 11.e6 c4 12.Qd1 Nb6 13.exf7+ Rxf7 14.h5 Nc6 15. hxg6 hxg6 16.Be3 Bf5 17.Ng5 Rf6 (17...Nxd4!) 18.g4 Be6 19.Nce4 Bd5

However, White now has a devastating continuation.



20.Bg2! Nb4 21.Ke2!! +/-

[E04] Catalan Opening

The Catalan is very popular nowadays. After the world championship match between Anand and Topalov, it will get even more supporters! The Rybka Aquarium book contains many ideas and novelties in this opening, one of them being

1.d4 d5 2.c4 e6 3.Nf3 Nf6 4.g3 dxc4 5.Bg2 c6 6.Ne5 Bb4+ 7.Bd2 Qxd4 8. Bxb4 Qxe5 9.Na3 b5 10.Bd6 Qxb2 11.O-O Nd5 12.e4 Nc3 13.Qh5 Nd7 14. e5 Bb7 15.Qg5 f6 16.exf6 O-O-O 17.fxg7



17...Rhg8 18.Rae1 with attack.

[E12] Queen's Indian Defense, Petrosian Variation

The old Petrosian recipe for handling the Queen's Indian Defense is not popular nowadays, but from time to time Black tries too hard to win against this solid system and risks too much. This is line is an example:

1.d4 Nf6 2.c4 e6 3.Nf3 b6 4.a3 Bb7 5.Nc3 Ne4 6.Nxe4 Bxe4 7.Nd2 Bb7 8.e4 Qf6 9.d5 Bc5 10.Nf3 Qg6 11.b4 Qxe4+ 12.Be2 Be7 13.O-O Bf6



After **14.h3 exd5 15.Bd3 Bxa1 16.Bxe4 dxe4 17.Bf4 0-0 18.Nh2!**, Black is lost.

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