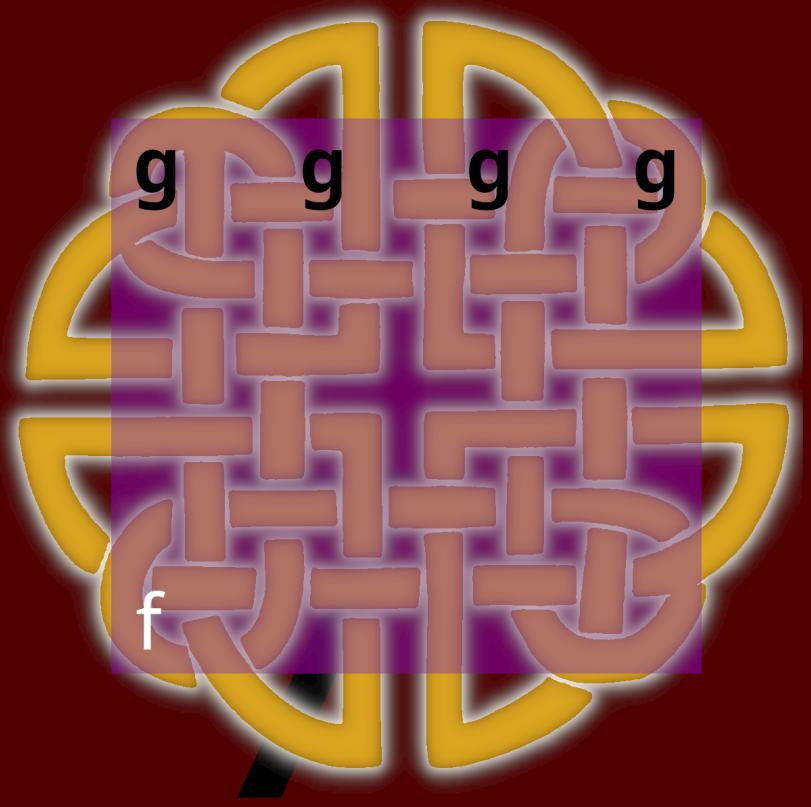
A Win for the Geese



In the interests of the game Fox and Geese/Hounds

J.G. Schiiller, PhD

A WIN FOR THE GEESE

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A Win for the Geese: In the Interests of the Game Fox and Geese/Hounds
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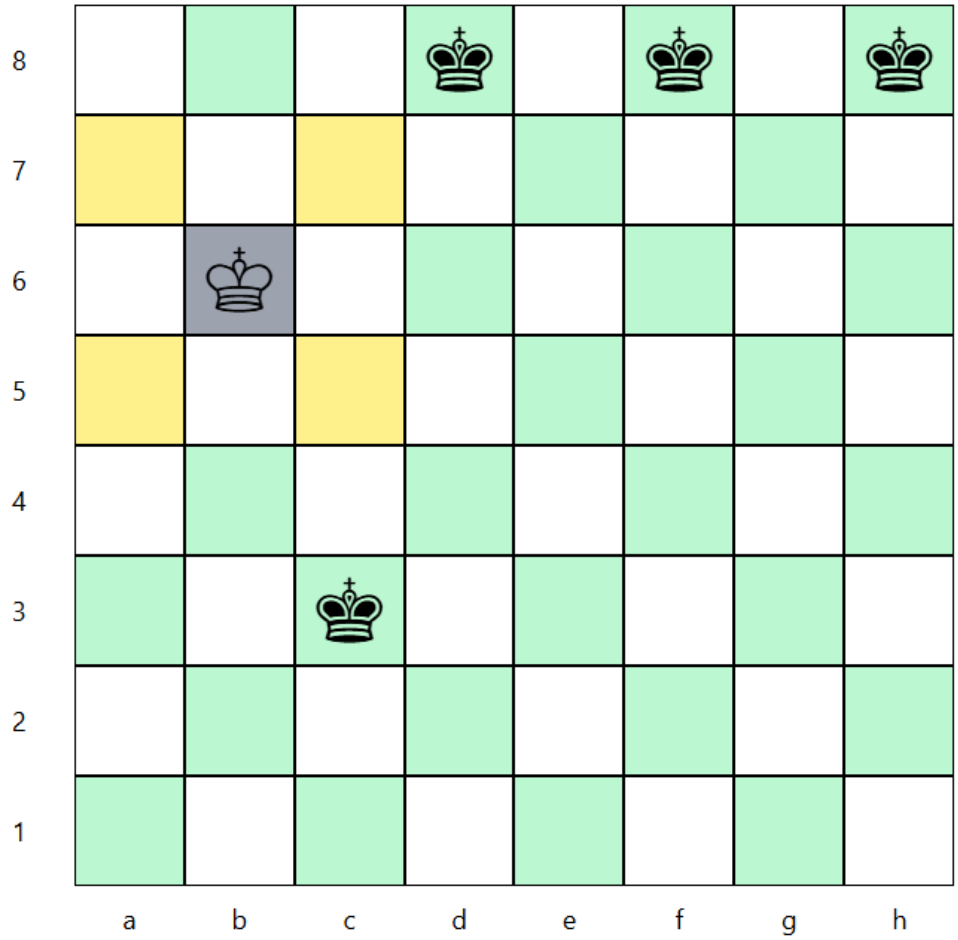
INTRODUCTION

This book is ultimately a learning device on how to play the game of Fox and Geese well. It came about after the author strongly solved the entire game with a computer. Not only does the author solve the game, but also shows how to play the game well through the winning moves function, available online. For which this book serves as its companion tool. More than just knowing the solution (who wins on what first move and where), it's purpose is to help the reader to become a strong player. One who wants to know how to play perfectly in every position.

First, the book explains the motivation for solving the game, which stems from the time Dr. Edwards defeated the author in a match. This is followed by an upfront explanation of the specific rules for the version of the game used in this book, as several variants exist. The nomenclature and symbols are then defined. Next comes the most important part of the book: an explanation of the winning moves function. From there, the author jumps right into game play by analyzing several interesting matches, then takes a guess at the algorithm Dr. Edwards used to defeat him. Years later—after the author solved the game—Dr. Edwards played online against the computer to test whether that guess was correct. Finally, the book ends with a summary of how the author solved the game itself.

Online: go to my website: **https://deducegm.online** **(warning: links often fail to age well in books).**



MOTIVATION!

Dr. Edwards [1] first introduced me to Fox and Geese on a black-and-gold chessboard using pennies and nickles for pieces. That was the first time I had ever even heard of the game. He explained the rules quickly, bet me he could beat me with him playing as the geese, and in fact did. I was devastated. Even after such a crushing loss, it seemed to me that the fox could move more freely than the geese and should, in theory, be able to outmaneuver them. It felt intuitive that the fox must have a way to win. I was furious at getting beaten so easily, and years later, the loss still stung. It ended up motivating me to solve the entire game myself. I wanted to discover the algorithm he used without him telling me the solution. He politely offered to share it, but I declined, determined to find a fox win on my own. I don't like to lose. Let's kick some geese arse!

RULES OF THE GAME

The version of the game in this book is played on an 8x8 chessboard or checkerboard.

The fox starts on it's home square `a1`.

The geese start on their home row, on squares: b8, d8, f8, h8.

```
8 - g - g - g - g
7 - - - - - - - -
6 - - - - - - - -
5 - - - - - - - -
4 - - - - - - - -
3 - - - - - - - -
2 - - - - - - - -
1 f - - - - - - -
  a b c d e f g h
```

```
8 - g - - - g - g
7 - - g - - - - -
6 - - - - - - - -
5 - - - - - - - -
4 - - - - - - - -
3 - - - - - - - -
2 - f - - - - - -
1 - - - - - - - -
  a b c d e f g h
```

```
8 - g - - - g - g
7 - - - - - - - -
6 - - - g - - - -
5 - - - - - - - -
4 - - - - - - - -
3 - - - - - - - -
2 - - - - - - - -
1 - - f - - - - -
  a b c d e f g h
```

Pieces can only slide on open adjacent and unoccupied diagonals, one square at a time.

The fox can use all four possible diagonals, going both forward and backward.

The geese can only use two diagonals, only going forward.

The fox wins by reaching the geese's home row before all four geese reach the fox's home row.
The fox wins if it reaches the geese's home row (the top row) before the geese win.
The fox wins if the Geese have no legal moves left, and have not yet won.

Geese win if all geese reach the fox's home row (the bottom row), before the fox wins.
Geese win if the fox has no legal moves remaining (trapped).

There is no such thing as a draw.

There are variants of the game rules. The traditional rules found in historical books have the geese only winning when the geese corner the fox, and have the fox winning right when the fox escapes past all the geese [1, 2]. There are other variants as well. In at least one booklet, the game is actually called Fox and Geese and there is even another different game called fox and hounds, and there is separate Fox and Geese game, not the one played in this book. The rules laid out above are the variant used in this book. Which are similar to the rules on Wikipedia, where the fox has to get to the geese's home row in order to win [3]. It doesn't really matter in terms of solving the game, in both these variants, it is a geese win with perfect play.

NOMENCLATURE

The notation is similar to chess notation.

Position Setup: `a1 b8 d8 f8 h8 f`

Position Setup means, the fox is on `a1` and the geese are on: `b8`, `d8`, `f8`, `h8`, and the `f` means it is the fox's turn. The idea for setting up a position was based on Fritz's and other Chess GUIs' Position Setup function. The idea for custom notation used for setting up said position was based on Forsythe-Edwards Notation or FEN, albeit simpler.

Move History. These are the moves the players have made during a game, recorded in two columns and in as many rows as needed.

```
Fox         Geese
1. a1-b2    b8-a7
2. b3-c3    a7-b6!!
3. c3-b4    f8-g7??
4. b4-c5!!  g7-f6     comments can go here.
5. .....    .....     consecutive dots mean whatever the player's move was, is not of interest here.
...
fox wins
```

The first column in **Move History** are always the fox's moves, the second column are always the geese's moves. The space in between move columns and at the end on the same line are for annotation symbols:
brilliant move (!!), good move (!), interesting move (!?), dubious move (?!), mistake (?), blunder (??), check (+), and checkmate (#).
Akin to annotation symbols in chess. The last line is the result of the game, for example, `fox wins`.

`a5-b4 | c5-b4 | c5-d4` shows a list of winning or sometimes losing moves. For example, either of these three moves wins for a player on their turn. We take the first move listed as the official move made, if not notated otherwise.

Instead of doing a bunch of branching on all possible or alternative moves, we just play separate games for each alternative branch. It takes up more space but is easier for the reader to follow along. If the board is on a different page and a continuation, the previous board is carried over to help remember the previous position (i.e., besides a same page Position Setup).