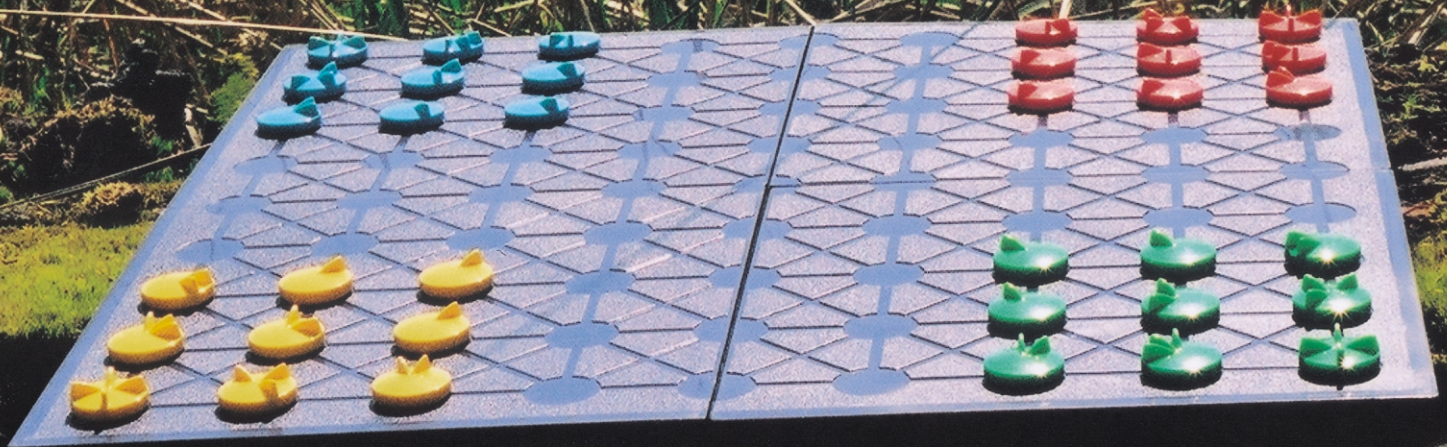


Issue 6 Summer 2001

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# *Abstract Games*

... for the competitive thinker



- Jetan -- Martian Chess
- Onyx Strategy
- Gonnect -- the best of Go and Hex
- Zèrtz Strategy Guide



# Contents

## Front Cover

In 1962 3M Company of the USA introduced a line of games in a compact format, which they called Bookshelf Games. A number of classic games were subsequently published in this line, including Acquire, Twixt and Feudal. Ploy, invented by Frank Thibault, was added to the collection in 1970. In 1974 3M Company sold its game division to Avalon Hill. Avalon Hill reissued many of the Bookshelf Games in a slightly different format, although Ploy was not one of those selected. Ploy was eventually republished by Schmidt Spiel + Freizeit of Germany in 1982. It has been out of print since then.

The game was given a futuristic design by 3M, with a Spock look-alike on the front of the box. In keeping with this theme, the pieces were designed like brightly colored space ships. Ploy is a game for two or four players. Although the cover photograph shows the starting position for the four-player game, I think we should consider the two-player game as the main version.

Ploy is a chess-type game in which the objective is either to capture the enemy commander or to capture all enemy pieces *except* the commander. Each piece has between one and four raised ridges, or sails, which indicate the direction(s) it can move. The shields, with one ridge, may move only one space; probes, with two ridges, may move one or two spaces; lances, with three ridges, may move up to three spaces. The commander, although it has four ridges, may move only one space. Instead of moving a piece it is possible to rotate a piece on a space so that its sails are oriented in a different direction. The shields only may rotate after moving in the same turn.

Ploy pieces are somewhat less powerful than Chess pieces and are very vulnerable to attack from directions their movement indicators do not cover. But that is part of the game's charm, and it gives rise to many interesting tactics. Strategically it appears best not to advance too quickly because of the danger of attack from the rear. Interested readers may like to consult the long article on Ploy by David Wells included in *Modern Board Games*, edited by David Pritchard (William Luscombe Publisher Ltd., London, 1975).

Kerry Handscomb

- 1 Editorial
- 2 Letters and Mini-Reviews
- 3 Addenda to Issue 5
- 4 Game and Book Reviews
- 6 **Jetan** Martian Chess  
by Kerry Handscomb
- 9 **Commentary on the Rules of Jetan**  
by L. Lynn Smith
- 11 **The Grand Chess Corner**  
by Tony Gardner
- 12 **Chu Shogi**  
by R. Wayne Schmittberger
- 13 **Zèrtz** Strategy Guide Part 1  
by Stephen Taverner
- 14 **Interview with Kris Burm**
- 17 **Gonnect** The Best of Go and Hex  
by Cameron Browne and João Neto
- 22 **Onyx** Strategy and Tactics  
by Larry Back
- 27 **8x8 Game Design Competition**  
Initial Feedback  
by Kerry Handscomb
- 29 **I was a Shogi widow**  
by Connie Handscomb
- 29 Index



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**A Note on Gender**

Pronouns "he," "him," etc. have been used in non-gender-specific situations. We realize that women play games, too, and this is merely to avoid awkward constructions such as "he/she."



Some readers may have noticed that the last issue was printed on slightly lighter stock than we previously used. This was a printing error and was not intentional. We soon realized, however, that if the magazine were printed on this stock, we could have an extra four pages without increasing mailing costs. This is what we have done. The current size of 32 pages including the covers feels just right -- we had been ready to settle on 28 pages, but it still felt quite cramped. There is certainly no shortage of material to fill those extra four pages. In fact, this time we have held back the concluding articles for Hostage Chess and Bao, as well as the next article in the Hex series, and a great deal of new material. We will be doing some catching up in *AG7*.

Meanwhile, I hope you enjoy the articles in this issue. Onyx has returned in an article from its creator that illustrates some of the game's fascinating tactics. Also included in this issue is the Gonnnect article by Cameron Browne and the game's inventor, João Neto. Gonnnect is another intriguing new connection game, and I felt that Gonnnect and Onyx in the same issue nicely complemented each other -- it is convenient for readers to be able to compare these two games side by side.

Even without the concluding article in the Hostage Chess series, there are three chess-type games included in this issue. Firstly, we have begun a major investigation of Jetan. Two things have held back this game in the past: ambiguities in the rules, and the perception that it is very drawish. I hope we have dealt adequately with both of these concerns. Chu Shogi has returned, and we are proud to have Chu Shogi expert and leading light

in the game world Wayne Schmittberger take over the column for us. I feel that Tony Gardner's Grand Chess column is already an essential and well-loved component of the magazine. Grand Chess really is a great chess game: the larger board, those powerful extra pieces, and the freedom for the rooks in the opening can make for a wild and dangerous game with plenty of interesting combinations. Give it a try!

This issue also includes the first article of a new series on Zèrtz by Stephen Taverner. For some time I had been considering giving significant coverage in this magazine to a game that was currently still in print. Zèrtz seemed to be the right choice because of the intrinsic merits of the game itself and also because of the variety it adds to the mix of games we have been covering. Alongside it, you can read Kris Burm's story of the development of Project Gipf, which may give you some insight both into the mind of a professional game designer as well as into the business of game publication in general.

Because of the huge response to the 8x8 game design competition, the judging is taking longer than initially anticipated and final results will not be available until *AG7*. Even so, I could not resist including three of the competition games in this issue. Of course we will be presenting the actual winners as well as a number of the other games in *AG7* and *AG8*.

The tournaments are underway in Kyoto Shogi and Onyx. The inventors of the games are taking part in both of these events, and there are some strong players involved. They prove to be exciting clashes.

As of writing, *Abstract Games* is distributed to 24 countries around the world. But we are still looking for new readers, so if you love abstract games, please spread the word!

In the meantime, happy gaming!

Kerry Handscomb

**Notation**

A standardized notation is used for all games when possible. In diagrams, squares are named using an algebraic system. Starting from the bottom left of the diagram, columns are identified by the letters a, b, c ... and rows by the numbers 1, 2, 3 .... A colon ":" is used to indicate captures. A threat to win, or check, is indicated by a "+" sign after the move.

Moves in Chess variants are indicated by the initial letters of the name of the piece moving together with the destination square. ("N" is used for knights, and sometimes the "P" for pawn is omitted.) Sometimes the start square is also indicated to avoid ambiguity. Captures are noted with "x."

With Shogi variants we will follow the traditional Japanese way of identifying squares. From the top right, rows are a, b, c ... , columns are 1, 2, 3 .... If the value of a piece changes at the end of a move, we will use "=" and the new value; a plain "=" at the end of a move indicates a piece choosing not to promote. "+" is used for promotion in the Shogi variants (and Checkers variants). "x" indicates capture, and "x!" capture by *igui* in Chu.

# Letters

Abstract Games welcomes your views. We wish to reflect accurately the concerns and interests of the readership. Letters may be subject to editing for clarity and brevity.

What exactly is an abstract game? Few people would argue that Go is abstract, but look at Chess -- the pieces are by and large members of the court, and a war is being fought between two kingdoms -- quite a pronounced theme, if you think about it. In the circles in which I move most of the games played are German-style family games. A lot of them get described as "an abstract game with a thin veneer of theme." For example, Through the Desert, Reiner Knizia's excellent camel-laying point-scoring game, would lose nothing (apart from sales) if it were played on a plain board with colored stones for pieces.

Myself, I tend to think of an abstract game as a game of pure skill for two players. However, games like Plateau and Mentalis manage to be very abstract while containing a significant element of luck and bluff, and Alex Randolph's Nachbahn plays with three without introducing the players as a random element. (In other words, the winner isn't necessarily the one sitting to the left/right of the idiot, and two players can't easily conspire against the third.)

So, I don't have a good definition of an abstract game, and would be interested to hear if anyone else does.

Stephen Taverner, England

Nana Shogi is really novel! I'm going to go out and get a package of Dreidels (they should be packaged for clearance right now), paint over the Hebrew characters with Japanese ones (this alone should cause some curious looks from passers-by), find a coffee shop, and play a few rounds.

I also share your enthusiasm for Super Chinese Checkers. The two-player variation I like best is where each person plays two colors (three seems a bit crowded), but only needs to complete one target area. To eliminate the blocking delay tactic, we stipulate that after the third turn, the owner of a full target area wins, no matter whose pieces occupy it.

Clark Rodeffer, USA

I spent the whole afternoon reading the five issues of *Abstract Games* rather than working. This magazine is amazing. I

only found some minor problems.

Laska was spelled Lasca, which adds to the confusion that already tortures us. I also doubt the spelling of Bashne (often called Bashni). The name of this game is Russian and means "tower." The last letter is pronounced between 'e' and 'a', and the official transcription is 'a'!

The letter about Pentagonia on page 2 of *AG3* states, "As those who play Men's Morris games a lot know, the first move advantage in these games is quite significant. The player to move second is rarely able to make the game close, let alone win." I am living in Germany and Morris (or Mühle) could be called our true national game because in Germany it is more popular than Chess or Dame (German Draughts).

Two of the leading players are Hans Schürmann and Manfred Nüschler. In 1980 they published the book *So gewinnt man Mühle*. They show that there is no first move advantage. In fact, the second player has an advantage because it is more important where to place the last stone than the first in the opening. A player who makes a three-in-a-row rather early usually loses the game!

Pentagonia is like Fünfeck-Mühle and Armenian Morris mixed together. Armenian morris gives a sure win to the first player while Fünfeck-Mühle has a big second move advantage. Perhaps Pentagonia balances both drawbacks so that both players have equal chances.

Ralf Gering, Germany

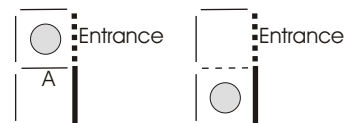
Just got *AG5*. As usual, it's great. I believe it contains two small errors though. First, in the Ricochet Robot variations on page 4 Jochen Drechsler states that "Unfortunately there are no 16-sided dice..." but there are. The dice are shaped as octagonal di-pyramids. They are produced by Lou Zocchi and should be available in well-stocked games stores or from: Zocchi Distributing, 1512 30th Ave., Gulfport MI, USA 39501; <http://www.gamescience.net/catalog/catalog01.html>.

Second, in the listing of tiles needed for Hex-Lightning on page 9 the first and last tiles in the second row are functionally equivalent.

Joe Kisenwether, USA

Seeing Kimbo on *AG5*'s cover pleased me. We played it a lot many years ago -- so much that some of the slots are so worn they hardly support the fences. I introduced it to people as generalized Parchesi, one making paths as convenient rather than following a set route.

A bit more about technique: We used to arrange fences around a man sitting at the entrance, as shown on the left.



Moving fence A down one slot got the man home on any odd roll, a 75% probability. Even better is having the man fenced in one space away from the entrance, as shown on the right. He is now guaranteed to get in, an even roll being certain. (The dotted fence must be removed last or an opponent will close off access.) It is also worth saying that a direct path from corner to center is twelve spaces, so we built them quickly and hoped for a double six.

Paul Yearout, USA

## Mini-Reviews

by Kerry Handscomb

### King's Cribbage

Recently we played King's Cribbage with some die-hard Cribbage fans. It is similar to Scrabble in that players draw hands of tiles and play them onto the board in crossword fashion. Rather than building words, however, the players are building Cribbage hands. It is an entertaining game, made all the better because of its high-quality wooden components.

For enquiries: King's Cribbage, 7510 Garfield Drive, Delta, BC, Canada V4C 6Y1; email: [cococo@axionet.com](mailto:cococo@axionet.com).

### Logic Mazes

Robert Abbott is the creator of many games, including Epaminondas (see *AG3*), Ultima, and Eleusis, the brilliant card game of inductive reasoning. For some years now he has devoted his considerable talents to the creation of highly original maze puzzles. Many of these are available on his website: <http://www.logicmazes.com/games/index.htm>. Readers who are at all interested in puzzles are strongly recommended to investigate.

### Corrections from *AG5*

1. On page 4 the correct spelling of the publisher of *Les dames chinoises* and *L'awélé: jeu de stratégie africain* is Éditions Bornemann.
2. On page 11 the correct web address for the Renju International Federation is <http://lmes.se/renju/>.
3. The first line at the top of page 25 should read, "...connecting more than one pair of the four black sides...."



## Anchor

It often seems to be the case that when an idea's time has come it occurs to more than one person independently. Soon after *AG5* went to press Greg Van Patten's game HexGo came to my attention. HexGo is another Go-like territorial game played on a hexagonal tessellation; like Steven Meyers' Anchor, HexGo discards Go-based ideas of liberties and capture.

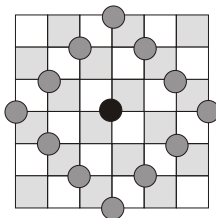
Greg's description of his game recommends placing three standard Hex boards together to make a hexagonal playing area with 11 spaces on each side, although the game works perfectly well with a smaller board. Three alternate sides of the board are specially marked and may be regarded as "bases." As usual, there are two players, with black and white stones, respectively, who take turns to place a stone on a vacant space. The definitions of "group," "territory," and "connection" are exactly the same as in Anchor. The difference is that a group is alive if and only if it has a *potential* connection to at least two bases. As soon as a group loses this potential connection to at least two bases, it is captured and removed from the board. It is permitted to pass, and the game ends when both players pass consecutively. Greg mentions two forms of scoring: either a player scores one point for every stone he has on the board at the end of the game plus one point for each point of territory; or a player scores one point for every stone he has captured plus one point for each point of territory. The player with the larger score wins. More details, including a sample game, can be found on <http://www.rpi.edu/~vanpag/TriHex.html>.

The Anchor concept can also be applied to a square grid, in which case it is known, fittingly, as Square Anchor. Steven Meyers considers the best version of Square Anchor to be played on a 15x15 checkered board, play taking place on the intersections where the squares meet. The connection system is the same as his game Trellis, described in *Games* magazine, June 2000. In other words, one's pieces are connected if they are either orthogonally adjacent or diagonally adjacent over a "home" square -- the home squares being those the same color as one's pieces. As before, an anchor is a connected group that connects at least two sides of the board (with corner points belonging to both sides that meet at that corner). This time there are no home and away corners, and anchors are valid connecting any two sides of the board. The movement system is rather novel: at each turn a player may play either one or two pieces; if two pieces are played, the

## Addenda to AG5

by Kerry Handscomb

second piece must be exactly three points away from the first, as shown in the diagram. Other pieces may occupy the intervening points.



The definitions of territory and capturing, and the scoring system are identical with the regular hexagonal game.

### Lines of Action

Jochen Drechsler is the current MSO World Champion of LOA. He had the following comments to make about the article in *AG5*:

*"First of all, I do not think that the chosen game is a good example of the Wall strategy against Claude's strategy, because early on he also adopts a partial wall. Concerning Claude's strategy, the center has the advantage that it is easily accessible for any piece. This is an important point, and it is even more important for Claude's overall style as the pieces can maintain their flexibility while always being able to connect to the main group in the center. Indeed, I think the most important concept in Claude's play (as it appears to me just from this article) is flexibility. The only definite advantage I can see in trying for a uniformity of distance between the pieces is that all the pieces then have the same 'connectivity' toward each other; they are not committed yet and can move around freely and are covering (or attacking) a wider area."*

*"I think the sample game supports another strategy that I would call 'blockade and contact.' This strategy aims to keep the lines of movement of your pieces towards each other free. The pieces are not yet connected, but they are 'in contact.' At the same time, you try to keep your opponent's pieces separated and out of your lines of contact. This blockade hinders the movement of enemy pieces towards each other. This is illustrated in the position after 5.b1b3 or 8.f8f3. I am not sure how important this is for Claude, but it is one of the concepts that I utilize."*

*"It seems to me that there are several concepts that have to be weighed against each other: the wall, compactness,*

*flexibility, blockade and contact, centrality, and material. I think that you have to judge which of these concepts should take precedence depending on the particular position. The number and variety of these ideas indicates the depth of this beautiful game."*

In some other news about LOA, Darse Billings' computer program Mona has dominated this year's email world championship. As of writing, it looks certain that Mona will win. Plans are afoot for MSO Worldwide, in association with *Abstract Games*, to stage a match between Mona and an international team. Details will be at the website: <http://www.msoworld.com/monavsworld>.

### Renju

In retrospect, perhaps the Renju article in *AG5* was a little difficult for beginners to approach. Nevertheless, this article for "beginners" is indicative of the great depth to which Renju has been studied. In comparing Renju to the other alignment games, alignment-game expert Mark Mammel has the following to say:

*"Each of the five-in-a-row games has a different feel to it. The opening rules and restrictions of Renju may make it seem awkward at first compared to Gomoku, but they are not bad once you get used to it and are useful in making the game more balanced. In fact, the restriction on Black from making fouls adds a richness to the game. Much of the strategy in Renju involves trying to force Black into a foul, allowing for some complex threats by White or careful maneuvering by Black. Renju games are not fast-paced or aggressive -- they are a careful struggle for control. If one player tries to attack too aggressively, this player may run out of threats and be left in a poor position. Pente is more aggressive: the first player tries to keep the initiative by setting up a strong position and attacking. Capturing and capture threats add to the attack possibilities and lead to fairly short games. Pente games rarely see 50 stones placed on the board, but in Renju it is common to go over 100. Keryo Pente is a bit slower than regular Pente; the initiative is more difficult to keep and may pass back and forth. I do not like the feel of Keryo as much -- a blocked three almost always has to be extended into a four to protect it from capture, and pairs are too susceptible to capture. If you like a dynamic, fast-paced game, regular Pente should be good for you; but if you like a longer, martial-arts type of struggle, try Renju." ■*



# Game Reviews

## Deflection



Designed by David Taylor

Deflection is a game played on an 8x6 board which is checkered green and gray. On each square there are eight directional arrows indicating the possible directions of movement from that square. Each player has six deflectors and six discs. These pieces are colored yellow for one player and red for the other. The deflectors are crescent-shaped pieces which are able to be positioned on the squares so that they cover all but four of the directional arrows. The starting position has the two armies facing each other over the short side of the board, with each player's discs surrounded by deflectors. Each turn a player moves either one or two deflectors or moves a disc. When a deflector is moved it may be shifted to another square and/or rotated so that different directional lines are uncovered. To compensate for the advantage of moving first, the first player may move and/or rotate just one deflector.

Only one piece, either deflector or disc, may occupy a square at any one time. The deflectors move like Chess queens and may not jump over other pieces, deflectors or discs, and must finish their movement on an unoccupied square. The discs can only be moved by bouncing off the angles of deflectors of the same color. A disc enters the square occupied by a friendly deflector along one of the directional lines that is not covered by the deflector and then exits this square by one of the other lines not covered by the deflector. A disc is not allowed to bounce back along the same line that it entered the square – it must change direction. A disc may bounce off one or several friendly deflectors in a single move, and may thus follow quite a convoluted path around the board. As with deflectors, discs may not jump over occupied squares or finish moving on a square occupied by a friendly piece or an enemy deflector. However, if a disc lands on a square occupied by an enemy disc, this disc is captured and removed from the board. The objective of the game is to capture all six enemy discs.

Games tend to begin with both sides jostling for position with their deflectors. It appears to be crucial at this stage to get a good position. After the opening one side or other will initiate an exchange of discs. This is then followed by more maneuvering of the deflectors and an extended tactical battle, in which each player tries to outmaneuver his opponent to capture the remaining discs. It is possible at this stage for one player to barricade a surviving disc behind an impenetrable wall of deflectors, but the rules take account of this so that such stalemates do not arise.

As mentioned above, positioning of the deflectors is of vital strategic importance. It appears to be advantageous to get a solid group of deflectors in the center of the board. These provide an obstacle to the movement of opposing deflectors and discs, but, just as importantly, the movement of friendly discs bouncing between these deflectors cannot be blocked – if two deflectors occupy adjacent squares, the opponent cannot interpose between them.

One small gripe I have with the game is that the deflectors have to be positioned just right to have exactly four directional arrows uncovered unambiguously. They can be very fiddly, and one careless nudge of the board can create havoc. This problem does not reside in the board and components, which are well

designed, but rather in the nature of the game itself. Nevertheless, Deflection is an interesting and original game. It would be very informative to watch a game between good, experienced players to see how they arrange their deflectors in the opening, negotiate through the tactical complexities of the middle game, and force a conclusion.

Kerry Handscomb

Deflection can be obtained from Deflection Games, 622 Joyner Street, Greensboro, NC, USA 27403

email: [deflectiongames@hotmail.com](mailto:deflectiongames@hotmail.com).

Price: US\$25 plus US\$5 shipping within USA and Canada. Potential customers need to enquire about shipping elsewhere.

## Dao

Designed by Jeff Pickering and Ben van Buskirk

Dao is an alignment game for two players. It is played on a 4x4 board with four pieces each. In my set the pieces consist of those beautiful Chinese glazed-metal balls which make a chiming sound when they are handled – known as harmony balls or meditation balls. The mystical oriental theme is continued in another version of the game, in which the pieces are statuettes of the Buddha. A third version, with terra cotta pieces, doubles as a Zen garden with the addition of black sand.

The game is certainly pleasant to look at and handle. It makes an ideal coffee-table game. In addition, it plays surprisingly well for such a small game. Dao reminds me a little of De Bono's L-Game, although Dao, I believe, is somewhat easier to come to grips with and more enjoyable than the rather tortuous L-Game.

In the starting position each player's pieces occupy a long diagonal so that the pieces form a cross. The rules are simple. The players take turns to move one of their pieces. The pieces are moved like runaway queens, so they must move as far as possible in the chosen direction, either orthogonally or diagonally, until running up against the edge of the board or against another piece. Pieces may neither jump over other pieces nor finish their movement in occupied squares. The objective is to maneuver one's four pieces into a straight, orthogonal line, or into a 2x2 square, or to occupy all four corner squares. In order to preclude a player from using spoiling tactics, it is counted as a loss if a player traps an opponent's piece in a corner with three of his own pieces.

Such a small game must of necessity be mainly tactical in nature. A good player would probably be able to recognize advantageous patterns and foresee tactical combinations. As far as strategy is concerned, I tended to play to occupy the center of the board so as to drive a wedge between my opponent's pieces. This appeared to work quite well, although because of my limited experience of the game it is impossible to say whether this strategy is sound.

Dao may not have enough depth to hold the interest of a serious gamer over the long term. Nevertheless, Dao probably comes close to maximizing the tactical and strategic interest that is possible on a 4x4 board. If you want an attractive game with which you can pass the time pleasantly, then give Dao a try.

Kerry Handscomb

Dao is available online at or from Playdao.com, 27013 NE 50<sup>th</sup>, Redmond, WA, USA 98053. Prices range from about US\$13 to US\$40.



# Book Review



## Winning Ways

for your mathematical plays

Volume 1, Second Edition

Elwyn R. Berlekamp, John H. Conway, Richard Guy  
(A K Peters, Ltd., Natick, MA, 2001)

*Winning Ways*, first published in 1981, is a classic in combinatorial game theory. It is now being reissued by A K Peters in four volumes with a great many changes and additions to the original two-volume set. Volume 1, the subject of this review, is largely concerned with theory, although there are plenty of games included to illustrate the development of this theory. Later volumes will deal more with specific games. The game *Philosopher's Football*, for example, featured in *AG3*, was originally published in the equivalent of Volume 4.

Generally speaking, the theory of *Winning Ways* applies to a very specific type of game. These are two player games with a finite set of possible positions; the rules of the game specify the options that the players have to move from one game position to a new game position; the players alternate turns; there is no hidden information; and there is no element of chance. So far this definition includes Chess, Go, Hex, and so on. However, the normal winning condition of the games of *Winning Ways* is that the last player to move wins, which precludes most of our usual games from the theory. Lastly, there must always be a winner, so that after a finite series of moves one or the other player must run out of movement options. Examples of this type of game are Sprouts and Nim, although the book contains a great many others.

Throughout the book, the two players are known as Left and Right. The book's notation represents all the game options inside a pair of brackets, with Left's movement options separated from Right's by a vertical slash. It is convenient to think of each option in a game as being a game in itself – it simply has a different starting position one move further on. The simplest possible game is  $\{ | \}$ , which means that neither player can move. In other words, whoever has the turn will lose immediately. There are good reasons, which we cannot go into here, for putting  $0 = \{ | \}$ . The next simplest game will be  $\{ 0 | \}$ . In other words, if it is Left's turn he can move to  $\{ | \}$  and win; if it is Right's turn he loses immediately. In a precise mathematical sense, therefore, Left is one move ahead of Right, and we may write  $1 = \{ 0 | \}$ . Similarly,  $-1 = \{ | 0 \}$ . When we come to  $\{ 0 | 0 \}$ , whoever has the move wins. This is called a "fuzzy" game; it does not fit into the normal number system and is written  $*$  =  $\{ 0 | 0 \}$ . From these simple beginnings the whole grand theory is developed.

In many games where the last person to move wins, it is a disadvantage to have the first move since you are then the first to use up one of your movement options. Games in which the players would prefer not to have the move are known as "cold." In some games having the first move may be an advantage as one has the first chance to improve one's position. These are known as "hot" games; the precise measurement of how much a player would prefer to move first is the game's "temperature." In most games we actually play, such as Chess, Go, and so on, having the move is an advantage. Presumably, the study of hot games is important in extending the theory to these more general types of games.

It is pleasure to see this book reissued. I hope A K Peters hurries to get the remaining volumes into print. If you like games and recreational mathematics, this book is essential.

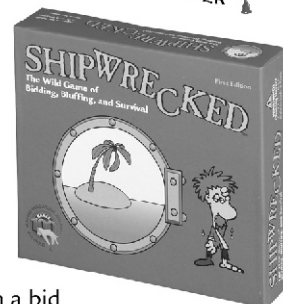
Kerry Handscomb

# SHIPWRECKED

The Wild Game of  
Bidding, Bluffing, and Survival

"An excellent game of bluff, with an ingenious  
bidding system...Highly recommended."

Kerry Handscomb, *Abstract Games*



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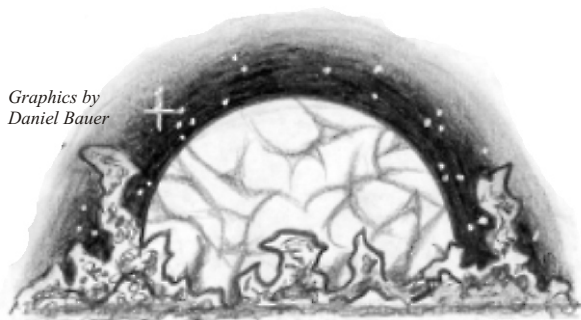
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Graphics by  
Daniel Bauer



# Martian Chess

by Kerry Handscomb

Between 1912 and 1943 Edgar Rice Burroughs wrote 11 swashbuckling fantasy novels set on Barsoom, or Mars as we know it. These romances invariably involved doughty warriors rescuing beautiful maidens. In the fifth book of this series, *The Chessmen of Mars*, Burroughs describes the game of Jetan, otherwise known as Martian Chess. In a number of works of fantasy or science fiction the games played by the inhabitants of the worlds depicted are mentioned, but Jetan may be unique in that it is the only game in fiction for which the complete rules are given.

The game of Jetan is fought between two equal and opposing armies of pieces; the pieces in each army are differentiated according to their powers of movement; capture is by replacement; and the objective is to capture a specific royal piece in the opposing army. Jetan can be classed, therefore, as a chess-type game. However, the way the pieces move is quite unlike most (all?) other chess-type games, as they are deployed by making a series of single-square, step moves. In addition, there is much more variety in the utilization of Jetan as a competitive system than there is in Chess.

Jetan played in the manner of Chess, with an all-or-nothing checkmate objective, tends to lead to many drawn games. But Jetan is usually played by the Martians as a gambling game in which the players win a stake for each piece captured as well as a pot for winning the game overall. Therefore, even drawn games can be quite decisive in terms of wagers won or lost; moreover, careful calculations can enter into the decision to go all out for a win or settle for a draw.

Jetan was also played with actual warriors on a giant board, with capture depending on a duel to the death in disputed squares. This is not recommended for Earthlings, although some contestants may enjoy simulating the duel component of the game with dice.

In *The Chessmen of Mars* Burroughs gives the complete rules of Jetan in two locations, Chapter II and the Appendix. Unfortunately, both descriptions are a little vague, and there are inconsistencies between them. One approach to solving this problem is to put forward a best interpretation as a tentative standard version of the game. This is what I have done below, although I have made the disputed points quite clear so that players may choose alternative interpretations if they wish.

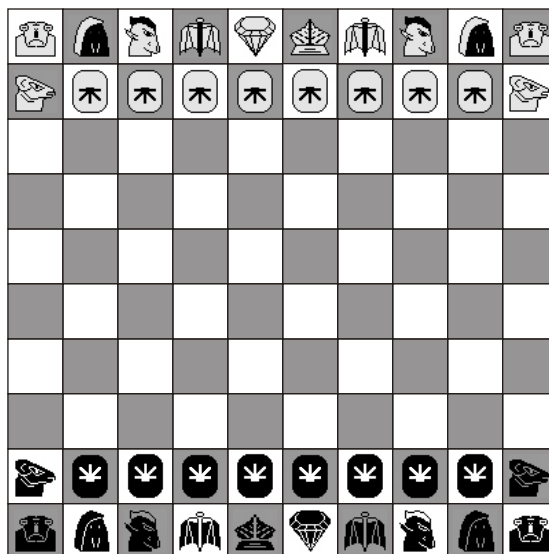
Another approach is to assume that the ambiguities actually reflect different ways in which the Martians played the game, and that Burroughs was deliberately vague to reflect these differences. This is the approach recommended by L. Lynn Smith, and which is detailed by him in the following article. L. Lynn Smith is probably Earth's foremost authority on Jetan. In addition to his system for dealing with the different interpretations of the rules, he is responsible for clarifying the values of the pieces and for codifying the wager and duel systems from references made by Burroughs. Whether or not players

choose to standardize piece powers, the wager system is strongly recommended. Some players may also like to try the duel system as it may make the game feel almost like a wargame.

## Rules

The board is a 10x10 array of squares checkered black and orange. The proper orientation of the board is not given by Burroughs, but for reasons of consistency we will place a black square at the players' bottom left in our diagrams.

The initial arrangement of the pieces is shown in the diagram below. Jetan represents a war on Barsoom between the yellow race of the North and the black race of the South, represented by orange and black pieces, respectively. One player controls the orange pieces, his opponent the black pieces. (The piece representations in the diagrams were designed by Jean-Louis Cazaux.)



Burroughs makes no reference to which side moves first. The players may decide who takes which army and who moves first by any method they choose. The turns alternate between the players; each turn a player moves just one of his pieces.

Pieces in Jetan are able to make one, two or three single-square, step moves, some only in orthogonal directions, some only diagonally, and some in any combination of orthogonal and diagonal directions. Pieces may change direction with each step move, but are not allowed to enter the same square twice in a single move. This is defined by Burroughs as a "combination move."

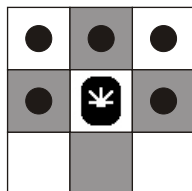
The strict interpretation of a combination move is that a piece must make *exactly* its specified number of two or three step moves; the loose interpretation is that the piece can make *up to* its specified number of two or three step moves. Most commentators have taken the strict interpretation, and this is the rule we recommend here.

Some pieces can jump, some cannot. If a piece cannot jump, each square it passes over in its series of step moves must be empty. If a piece can jump, it may pass over occupied squares. No piece is allowed to finish movement on a square occupied by a friendly piece, but if it finishes on a square occupied by an enemy piece, this enemy piece is captured and removed from the board to take no further part in the game. The exception to this is the Princess, who may not finish movement on an enemy-occupied square to effect a capture.

### Panthan

*"The Panthans, which are represented as warriors with one feather, may move one space in any direction except backward"* (Chapter II).

*"Panthans: (8 of them): 1 feather; 1 space, forward, side, or diagonal, but not backward"* (Appendix).



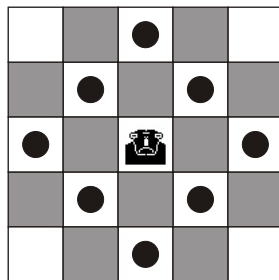
[Players who make their own sets may like to reproduce the descriptions given by Burroughs. A circle in our diagrams means that the piece may move to that square provided its path there is not blocked by other pieces; a cross means that the piece may jump directly to that square.]

The rigorous interpretation of the Panthan's move is given in the diagram. The lax interpretation allows it also to move to the two squares diagonally back; but this makes it quite a powerful piece, perhaps too powerful since there are eight of them. On the other hand, the rigorous interpretation means that the Panthan, without promotion, becomes next to useless when it reaches the tenth rank as it is restricted to shuffling from side to side. On balance, I think the rigorous interpretation is better, especially if players are using the wager system.

### Warrior

*"Warriors, foot soldiers with two feathers, straight in any direction, or diagonally, two spaces"* (Chapter II).

*"Warrior: 2 feathers; 2 spaces straight in any direction or combination"* (Appendix).

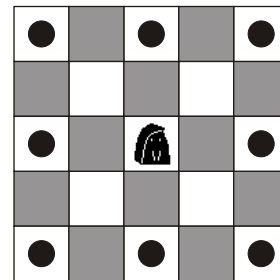


There are different interpretations of the Warrior's move. Firstly, Chapter II mentions diagonal movement, whereas the Appendix limits the Warrior's move to "straight" (i.e. orthogonal) movement. Secondly, if diagonal moves are allowed, it is not clear whether the Warrior must move either two orthogonally or two diagonally, or whether it can make a mixed diagonal and orthogonal move. For the game's logical structure, however, perhaps it is better to disallow diagonal step moves by the Warrior. The reason for this is that there are pieces which move two and three squares diagonally and a piece which moves three squares orthogonally; to preserve this pattern, it is logical to have a piece which moves two squares orthogonally. Perhaps Burroughs made the diagonal reference in Chapter II to indicate the resultant diagonal if the Warrior changes direction with the second of its orthogonal step moves. Thus the Warrior makes exactly two orthogonal step moves and is not allowed to jump.

### Padwar

*"Padwars, lieutenants wearing two feathers, two diagonal in any direction, or combination"* (Chapter II).

*"Padwar: 2 feathers; 2 spaces diagonal in any direction or combination"* (Appendix).

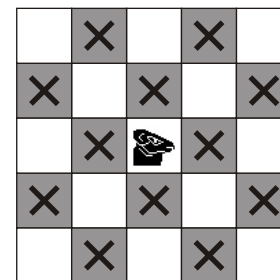


The Padwar moves exactly two squares diagonally and cannot jump.

### Thoat

*"Thoats, mounted warriors with three feathers, may move one straight and one diagonal, and may jump intervening pieces"* (Chapter II).

*"Thoat: Mounted warrior 2 feathers; 2 spaces, one straight and one diagonal in any direction"* (Appendix).

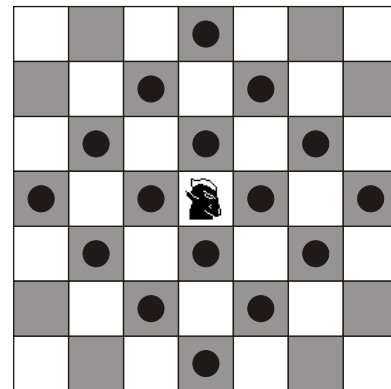


It is clear the Thoat must make one orthogonal step move and one diagonal step move, but the order they should be made is a little vague. More controversially, Chapter II states that the Thoat may jump, whereas the Appendix implies that it cannot jump. We will assume that the Thoat may jump, which nicely eliminates the ambiguity over the order of the moves. It makes sense that the Thoat and the Flier (and the Princess) can jump as they are the only pieces not representing fighting men on foot.

### Dwar

*"Dwars, captains wearing three feathers, three spaces straight in any direction, or combination"* (Chapter II).

*"Dwar: 3 feathers; 3 spaces straight in any direction or combination"* (Appendix).

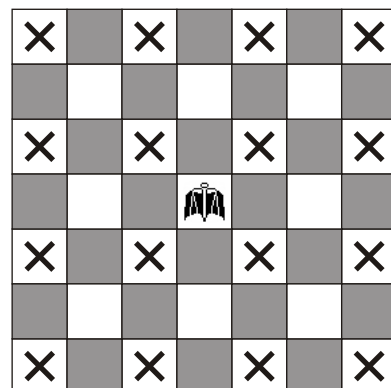


The Dwar moves exactly three squares orthogonally and cannot jump.

### Flier

*"Fliers, represented by a propellor with three blades, three spaces in any direction, or combination, diagonally, and may jump intervening pieces"* (Chapter II).

*"Flier: 3 bladed propellor; 3 spaces diagonal in any direction or combination; and may jump intervening pieces"* (Appendix).



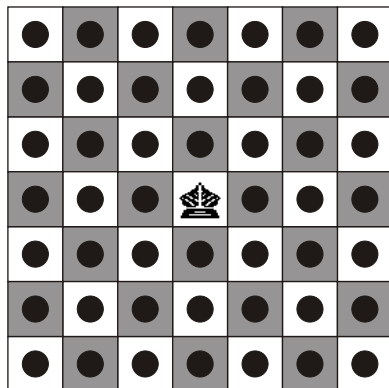


The Flier makes exactly three diagonal step moves and can jump.

The Flier is sometimes known as the Odwar because of the following text: *"There be no Fliers in Manator and no piece in their game of Jetan bearing that name. Instead they call him who stands next to the Chief or Princess, Odwar. The piece has the same moves and power that the Flier has in the game as played outside Manator"* (Chapter XVI). We may assume that the Odwar moves as a Flier but may not jump.

## Chief

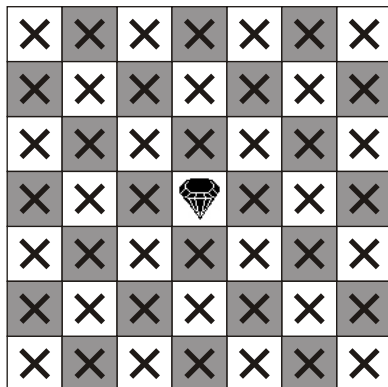
*"Chief, indicated by a diadem with ten jewels, three spaces in any direction, straight, or diagonal"* (Chapter II).  
*"Chief: Diadem with ten jewels; 3 spaces in any direction; straight or diagonal or combination"* (Appendix).



The Chapter II definition could be taken to mean that the Chief can move either three spaces orthogonally or three spaces diagonally, without changing direction. A slightly wider interpretation is that the Chief can move either three spaces orthogonally or three spaces diagonally, and may change direction. The Appendix seems to give the broadest definition of the Chief's move: exactly three spaces in any combination of orthogonal and diagonal step moves, changing direction as required. This is the definition I prefer because it seems to accord with the logical structure of the game that there should be a piece with this power. The Chief cannot jump.

## Princess

*"Princess, diadem with a single jewel, same as Chief, and can jump intervening pieces"* (Chapter II).  
*"Princess: Diadem with one jewel; same as Chief, except may jump intervening pieces"* (Appendix).



The regular movement power of the Princess is identical to the Chief's, except she may jump. However, the Princess also has restrictions and a special privilege:

*"The Princess may not move onto a threatened square, nor may she take an opposing piece. She is entitled to one ten-space move at any time during the game. This move is called the escape"* (Appendix).

This could be interpreted to mean the Princess is not allowed even to pass over a threatened square during the course of her move, but I believe this to be overly strict -- even if one of these squares were threatened the Princess surely could not be captured without

actually alighting on a threatened square. Keeping the interpretation of the Princess' escape move as close as possible to her regular move, we may assume that she may make any combination of diagonal and orthogonal moves, and may jump, and pass over threatened squares. However, if we assume the Princess must make exactly 10 moves (and may not pass over the same square twice) the calculation of possible escape squares becomes quite complex. Therefore, I suggest allowing the Princess to make *up to* 10 step moves in her escape. Effectively, therefore, the Princess can make a one-time move to any unoccupied square that is not threatened by an enemy piece.

## Winning

*"The game is won when a player places any of his pieces on the same square with his opponent's Princess, or when a Chief takes a Chief"* (Chapter II).

*"The game is won when any piece is placed on same square with opponent's Princess, or a Chief takes a Chief"* (Appendix).

Thus there are two possible winning conditions in Jetan: capture of the opponent's Princess, and capture of the opponent's Chief with your Chief. We can see that the Princess is never actually eliminated as the other pieces are when their squares are occupied by enemy pieces. Rather, the Princess is literally *captured* by the opposing side. (This accords with the rule that a Princess cannot land on squares occupied by enemy pieces to capture them.)

## The Drawn Game

*"It is drawn when a Chief is taken by any opposing piece other than the opposing Chief; or when both sides have been reduced to three pieces, or less, of equal value, and the game is not terminated in the following ten moves, five apiece"* (Chapter II).

*"The game is drawn when either Chief is taken by a piece other than the opposing Chief, or when both sides are reduced to three pieces, or less, of equal value and the game is not won in the ensuing ten moves, five apiece"* (Appendix).

These directions are quite straightforward. Suggestions for the values of the pieces are given below. Some commentators have suggested abolishing the rule that declares a draw if a Chief is captured by any piece other than a Chief because it leads to too many draws. If the wagering system is used, however, this is unnecessary, and the rule may be kept with advantage.

For the sake of completeness, I suggest that a game should be drawn if the players each make 50 consecutive moves without a capture, or if the same game position is repeated three times.

## Piece Value

The piece values given below are loosely proportional to the number of movement squares a piece would have in an ideal position in the center of the board. The Princess is a special case since she cannot capture and her capture ends the game.

Panthan: 1, Warrior: 2, Padwar: 2, Thoat: 3, Dwar: 4, Flier: 4, Chief: 10, Princess: 0

## Rules of Wager

*"Gambling: The Martians gamble at Jetan in several ways. Of course the outcome of the game indicates to whom the main stake belongs; but they also put a price upon the head of each piece, according to its value, and for each piece that a player loses he pays its value to his opponent."* (Appendix).

It is recommended that players use tokens rather than money. According to the above value system, a complete army is worth 48 points. At the start of a game each player puts 48 tokens into a pot. Whenever a capture is made, the capturing player takes the value of the captured piece out of the pot. The winner of a game takes the remainder of the pot. If a game is drawn, the pot is carried over to the next game. A full match consists of 10 games, and each player starts off with 100 tokens. If during the series of games a player is reduced to less than 48 tokens before the start of a game, he may begin the game with fewer than the full complement of pieces as long as he has at least a Chief, Princess, and two other pieces.

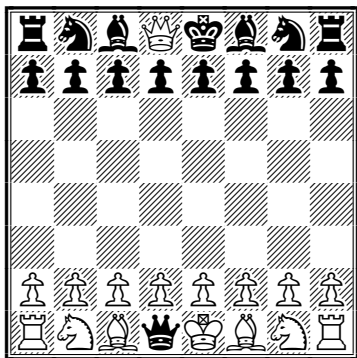
### Dueling

Burroughs described Jetan played with live pieces who duel over disputed squares. This may be simulated by using dice. When a piece moves onto a square occupied by an enemy piece, both players throw dice to determine the winner of the duel. Each throws three dice and adds the total to the value of his piece. The highest score wins. The loser is removed from the board and the winning piece now occupies the disputed square. If the score is tied, then the attacking piece returns to the square from which it moved, and the attacker loses a turn.

## Chivalry

Chivalry, created by Michael Simpson, is one of the games submitted for the 8x8 game design competition. The game was inspired by Jetan -- each side has a captive princess, who starts the game in enemy territory. Although Chivalry is played with the regular Chess set, it is really a game of attainment rather than a Chess variant, as the objective is to secure the escape of the princess rather than capture a specific royal piece.

The starting position, shown in the diagram, is the same as Chess except that the queens have switched position. All pieces move and capture exactly as they do in Chess except for the king and queen. The queen is now a captive princess. She moves like a Chess king, one square in any direction. As in Jetan, she is powerless to capture any opposing piece, but also she is immune from capture by any enemy piece except the jailer. The Chess king is now a jailer. He still moves like a Chess king, and may capture any opposing pieces, including the princess. When the jailer captures the princess, he immediately replaces her on any vacant square on the board to finish his turn.



There is no formal castling move in Chivalry. When a pawn reaches the eighth rank, it may promote to any piece included in the starting lineup, except the princess. As a result of pawn promotions, a player may have more pieces of a particular type simultaneously on the board than appeared in the initial array. A

pawn promoted to a jailer has all the powers of that piece, including the ability to capture the princess.

The first player to move his princess into his own first rank wins the game. In order to eliminate some of the advantage of the first move, the inventor suggests the rule that if black manages to get his princess to his first rank in the turn immediately after white, then the game is drawn.

We found that repetitive situations could develop in which the princess keeps trying to escape and getting captured. If other players find this happening, we suggest adopting the "dizzy princess rule," whereby a princess cannot move in the turn immediately following capture. Presumably, she is disoriented after being thrown back into prison by the heartless jailer.



*Warrior Mounted on a Throat by Daniel Bauer  
(The throat, an eight-legged reptile, is the Barsoomian equivalent of the horse.)*

## Commentary on the Rules of Jetan

by L. Lynn Smith

The entire foundation of the game is that it represents the conflict between two opposing forces. Barsoom is presented by Edgar Rice Burroughs as a world in a constant state of war. Its inhabitants are forever fighting over diverse allegiances and limited resources. Without the natural obstacle of oceans, the races of Barsoom are constantly in contact. The yellow and black races, which the pieces of Jetan represent, live in the opposite polar regions of Barsoom but their animosity is legendary.

Did Burroughs create the game of Jetan merely as a dramatic vehicle for the plot-line of the series of short stories that became *The Chessmen of Mars*? Many fans have asked this question. The answer is both yes and no. Yes, Burroughs used the game to season the tale; but no, the game is much more than the tale, and the careful design of the game provides evidence for this.

Let us begin first with the playing field, a 10x10 board. Why ten rather than eight or twelve? The number ten is used throughout the story. The width and length of the field, the number of games in a tournament, and the total number of moves to determine a drawn game are all ten. Burroughs could have easily used eight or 12, but an 8x8 field would have been insufficient for several of Jetan's power pieces, whereas a 12x12 field would have created a rather tedious game, with the distance between opponents just too far for enjoyment.

Now let us consider the pieces. The Throat placement gives a



nice symmetry to the game. They are like the cavalry supporting the troops. In the opening, they make up for the apparently slow advance of the Panthan rank. The Chief and Princess are both decisive factors in the game, and their initial orientation emphasizes this. By placing them facing their opposites, Burroughs gave a strategic and psychological twist to the game, which would be noticed by his readers, the majority of whom would be familiar with Chess. The hook moves produced by movement in a series of steps are a very nice feature. This type of move apparently represents the combat movements in swordplay, the bobs and weaves, the sidles and thrusts, but it also minimizes the ability to block an opponent's attack -- once two pieces enter each other's influence, there is immediate threat of combat.

The presentation of the rules provides further evidence that the game was meant to stand independently of the story. Burroughs not only established the rules in full detail in Chapter II, but also reiterated them in an Appendix. So, we find this game, resting on a bookshelf, occasionally dusted off and attempted by fans. The full potential of Jetan has not been realized because players usually approach it from the perspective of Chess. Firstly, Jetan is designed to be a game of wagers. Burroughs states this often within the novel and even within the rules. Very few players have utilized this aspect of the game and have thus denied themselves the true flavor of Jetan. With wagering the endgame scenarios take on a whole new meaning. Every move becomes a focus of attention, and the dreaded draw often becomes a desired result. Of course, tokens should be the chosen objects of forfeiture rather than money -- let us choose to maintain this game as a source of enjoyment rather than sorrow!

It does not help that there are conflicts between the two sets of rules. Why did not the editor catch this? The entire novel hinges upon the game, and there are several minor but irritating inconsistencies. However, we may assume that the inconsistencies and ambiguities in the rules reflect actual differences in the way the game is played on Barsoom. From this perspective, and taking into account that the game is supposed to be played for wagers, we can embrace the ambiguities in the rules rather than looking upon them as a source of frustration. Just as Poker has a myriad variations, so too can the game of Jetan. Let us take a close look at these conflicts in the rules and utilize them.

Firstly, we need a shorthand notation for the different interpretations of the piece movement. Burroughs himself gives us a clue in the novel. During the climactic game, the living pieces are drawn from the prisons, the slaves, and the citizenry of Manator. This suggests an appropriate mnemonic so that the players may easily communicate their desired interpretations:

*Chained:* A piece that obeys the strict interpretation of the rules.

*Free:* A piece that obeys the loose interpretation of the rules.

*Civil:* A piece that obeys the strict interpretation of the hook move.

*Wild:* A piece that obeys the loose interpretation of the hook move.

The precise meaning of these terms will vary amongst pieces, but they help the players quickly visualize the capabilities of each piece. They also add a decorative flair to the game and offer an ease to discussion.

So, a Chained Panthan moves one square to either side or to the three forward squares. On the other hand, a Free Panthan can also move to the backward diagonals. Here, again, is an area of contention. Often players have complained about the inability to promote the Panthan, especially the Chained Panthan, which becomes stranded on the last rank, forced to move pitifully from file to file. The game of Jetan represents the unforgiving nature of

Barsoom. Let us honor this idea and unconditionally deny the Panthan promotion. Let us not speak again of promotion: the true Jeddak [*Chief of Chiefs* -- Ed.] will accept any loss and utilize all pieces with this consideration.

Of course, the Thoat, has several interpretations. A Chained Thoat must move one orthogonal, then one diagonal square and cannot jump. A Free Thoat may move one orthogonal, then one diagonal square or one diagonal, then one orthogonal square, but still cannot jump. A Wild Thoat may jump, so the order of its moves is inconsequential.

The rules are confused for the Warrior. One set of rules gives it the ability to move two spaces orthogonally, while the other set allows for a two-space move in both orthogonal and diagonal directions. Let us embrace this inconsistency. The Chained Warrior moves only orthogonally but must move the entire two spaces; it may change direction orthogonally after the first space but may not return to its start space. The Free Warrior moves only orthogonally but may move up to two spaces; it may change direction orthogonally after the first space but may not return to its start space. The Chained Civil Warrior must move either orthogonally or diagonally two spaces; if the first space is an orthogonal move, the second must also be an orthogonal move; if the first space is a diagonal move, the second must also be diagonal; it may change directions after the first move and may not return to its start space. The Free Civil Warrior moves either orthogonally or diagonally up to two spaces; it may stop or capture on the first space, but must follow the move restrictions of the Chained Civil Warrior on the second space. The Chained Wild Warrior must move the entire two spaces, but may switch between orthogonal and diagonal moves. The Free Wild Warrior, obviously the most powerful interpretation, may move up to two spaces and may switch between orthogonal and diagonal moves. The rule that allows both the diagonal and orthogonal movement of the Warrior creates a piece that can be seen as a lesser Chief. By assigning this attribute to the Warrior and not the Padwar, Burroughs placed the enhanced piece at the corners of the board, similar to the rook.

Here we see the aid of mnemonics. Players discussing the interpretation of the Warrior can now quickly relate their intentions. If Chained Civil Warriors are suggested, each player can now immediately visualize the use and power of this piece.

The Padwar also moves two spaces, but can only move diagonally. It may change directions, but cannot return to its starting space. So we have only the Chained Padwar and the Free Padwar, depending on whether the piece must move the full two spaces or may stop after moving one space. See how easily one can visualize the use of the Padwar. With only a few words, the two interpretations are presented.

The Dwar moves three spaces but only orthogonally and may change directions. It may not occupy the same square more than once during a single move. We have both the Chained Dwar and the Free Dwar depending on whether it must move the full three spaces or may stop after moving one or two spaces.

The Flier moves three spaces diagonally and may change directions. The Flier may also jump. It may not occupy the same square more than once during a single move. There is a Chained Flier and Free Flier, depending on whether it must move the full three spaces or may stop after moving one or two spaces.

With the Flier, we have another area of contention. In the novel, the citizens of Manator do not call this piece a Flier, but an Odwar. This fact was used by Burroughs to create dramatic tension, as the hero, who is disguised as a Manatorian, lets slip his deception. Let us embrace this difference and form the rule that

the Fliers may be replaced with Odwars. The Odwar has the same move as the Flier but cannot jump. This may be a suitable handicap and helps to ease this area of contention.

Now we come to the Chief and Princess, the Chief to each player's left and the Princess to the right. Both the Chief and Princess move the same: three spaces with diagonal or orthogonal moves. The Princess cannot capture, but may jump. The Princess is also allowed a one-time ten-space escape move.

The Chained Chief or Chained Princess must move the entire three spaces either diagonally or orthogonally and may not change directions. This is the most restrictive interpretation of the rules, but some players may find it a fitting challenge. The Free Chief or Free Princess may move up to three spaces either diagonally or orthogonally and may not change directions. Once again, this is a restrictive interpretation, but definitely a challenge. There is left only the Chained Civil Chief and Princess, Chained Wild Chief and Princess, Free Civil Chief and Princess, and the Free Wild Chief and Princess. The meaning of Civil is that once the piece begins to move either orthogonally or diagonally it must continue orthogonally or diagonally, but may change orthogonal or diagonal direction, respectively. Wild means that the piece may make any combination of orthogonal or diagonal moves.

The Princess escape move should match its regular move interpretation, but regarding the Chained Princess this is not possible. A suggestion would be the Free interpretation, which maintains the single direction but allows a move less than ten spaces. The Princess is also restricted from moving into a threat. Some have interpreted this to mean through a threatened space. A Princess that may never move through a threatened space is considered Frightened. A Princess that may move through but not onto a threatened space is considered Brave.

One of the major bones of contention among Jetan players has been the drawn games, and some have advocated changing the rules to make draws less frequent. Let me present my arguments against this course of action. Firstly, Jetan is not Chess. It may look like a Chess variant, but it is not truly Chess. Chess players have been spoiled by the rush of emotion that accompanies the Mate. In Jetan there is no verbal warning of potential capture of either the Chief or the Princess. Secondly, Jetan needs a unique goal to distinguish it from the myriads of chess variants. Thirdly, Jetan is a game of wagers. When wagers are applied, the drawn game takes on a new significance.

Jetan is supposed to be played in a match of ten games. Drawn games are considered to be the norm. A losing player may quickly grasp the draw, so that recovery may be achieved in subsequent games. A winning player may force a draw, so that the opponent may not have the opportunity to retaliate. With wagering, after several drawn games, it will become apparent to the players who is the most aggressive, and that will affect the subsequent games. Also, remember this: a draw is not a loss. This is difficult for the highly competitive individual to accept, but this too is a matter of perspective.

I hope that the reader has gained some insight into this delightful game. If the reader has never played Jetan, I hope that this meandering of thoughts has sparked at least an investigative interest in the game. All players of Jetan should read the Barsoomian novels of Edgar Rice Burroughs. They are beautiful adventures set in a fantastic world of romance and war. ■

*With this nomenclature the suggested standard rules are:  
Chained Panthan, Wild Thoat, Chained Warrior, Chained Padwar,  
Chained Dwar, Chained Flier, Chained Wild Chief, Brave  
Chained Wild Princess (with Brave Free Wild Escape). -- Ed.)*

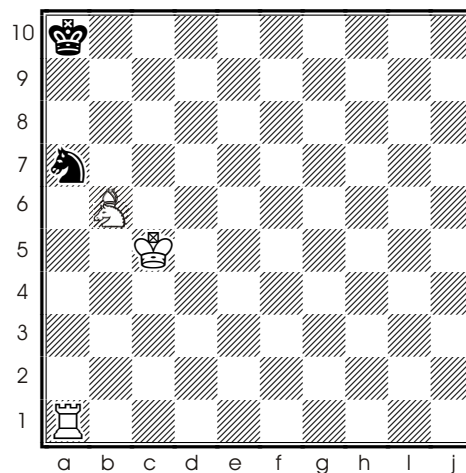
# The Grand Chess Corner

by Tony Gardner

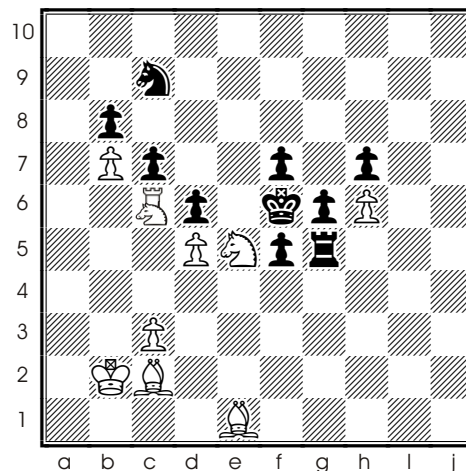


It took some effort, but Wayne Schmittberger has successfully defended his title, winning the 1999 Grand Chess Cyberspace World Championship in a second playoff game versus John Vehre. The entire game score, with commentary by the champion, can be viewed at <http://www.mindsports.net>. A 2001 tournament has begun with 13 players. Guess who is favored?

And now, for the benefit of the concept and our readers, we present the Grand Chess Problem Solving Contest. Henceforth, in each issue of this column two mating problems will be unveiled, and for submitting the correct key solvers will earn points. This will continue until any solver accrues 35 points or better; he will be declared the winner and will receive four free issues of *Abstract Games*! The first and second runners-up will get, respectively, two free issues and one free issue. Send your answers to [tgardner4@juno.com](mailto:tgardner4@juno.com) or mail them to the Editor, who will forward them. We will start off with a few easy problems:



Problem 1



Problem 2





# Chu Shogi

## ...the game of lions

by R. Wayne Schmittberger

In the 1960s I played a lot of Chess. By 1970 my interest had shifted to the game of Go, and a few years later to Shogi. But in 1976, when I read a series of articles in the newly launched *Shogi* magazine titled "Middle Shogi and How to Play It," I became so fascinated with the large game that it became my favorite pastime for many years. Which is why, despite my sad realization that a 12x12 form of Chess played with 92 pieces was unlikely ever to have broad appeal outside medieval Japan, I devoted 13 pages to it in my book *New Rules for Classic Games*.

I have written extensively about the strategy and tactics of Chu Shogi-- the Japanese name for the game -- in George Hodges's *Middle Shogi Manual*, with which I expect many readers of this column to be familiar. The manual also includes 224 Chu Shogi mating problems (some of astonishing complexity) that were first published in the 17th and 18th centuries, as well as details of the game's elaborate handicap system, and much more. It is a must for anyone seriously interested in Chu.

Rather than repeat the kinds of material covered in the manual, I decided to use this space to present an illustrative game from the World Postal Chu Shogi Championship in the mid-1990s. This game develops typically, with each player developing an attack on a different wing, but it ends with surprising abruptness.

Black: R. Wayne Schmittberger White: David Rockwell

1.Ln-6h Ln-7e, 2.P-8h P-5e, 3.Ln-6g P-3e, 4.P-10h P-8e, 5.P-5h P-10e, 6.P-3h P-12e, 7.Ph-8i P-1e, 8.VM-2k Ph-5d (This loses a pawn, but perhaps it was a sacrifice.) 9.GB-4g DH-11e (parrying the threat of B-2j) 10.FKx1e DH-2e, 11.FK-6j (Though losing two tempi to win the pawn, Black can now look forward to building a strong attack on the 1 file. Even in a chess game this large, a pawn can be very important.) P-6e, 12.C-9k C-4b, 13.P-7h DK-6c, 14.DK-7j S-9b, 15.C-8j SM-12d, 16.B-2j Ln-6d, 17.FL-3k S-9c, 18.P-1h S-8d, 19.SM-1i C-9b, 20.S-4k VM-11b, 21.C-7i B-11c, 22.P-2h GB-9f, 23.P-6h BT-7b, 24.BT-6k Ln-8f, 25.FK-4l FK-9a, 26.VM-11k DH-8b, 27.S-9k S-9e, 28.DH-5k P-10f, 29.P-12h C-9c, 30.SM-12i GB-9g, 31.B-11j C-5c, 32.S-4j C-6d, 33.GB-4f DK-4c, 34.P-4h DH-3f (a serious waste of time) 35.P-3g DH-2e, 36.P-4g VM-2b, 37.SM-6i B-2c, 38.S-3i P-3f, 39.S-3h GBx4f, 40.Lnx4f Px3g, 41.Sx3g P-5f, 42.Lnx5f-5g DK8c-6c, 43.P-2g DK4c-5c, 44.P-2f DH-4c, 45.DH-11h (planning to answer Ph-7f with 46.Ln-4h GBx9h, 47.Px9h Phx9h, 48.DK-9j) P-11e, 46.FL-4j P-11f, 47.FL-4i C-10d, 48.FL-3h P-11g, 49.DH-10i C-11e, 50.P-4f S-9f, 51.Ln-4g P-7e, 52.FL-2g S-4b, 53.P-1g C-11f, 54.S-8j P-9e, 55.P-1f P-10g, 56.Px10g Sx10g, 57.S-3f R-3a, 58.R-3g S-3c, 59.P-1e S-10h, 60.DH-9j C-10g, 61.GBx9g Lnx19g, 62.G-9k P-9f, 63.S-3e VM-3b, 64.FL-3f P-12f, 65.P-4e SM-8d, 66.B-5g B-9e, 67.B-9l FL-10b, 68.Sx2d= Sx2d, 69.Bx2d+ FK-11a, 70.G-10k Sx11i+, 71.SMx11i P-11h, 72.SMx11h Cx11h, 73.G-11j Rx10j+, 74.DHx10j Ln-10h, 75.S-9k P-9g, 76.DK-9j Lnx19i, 77.P-2e

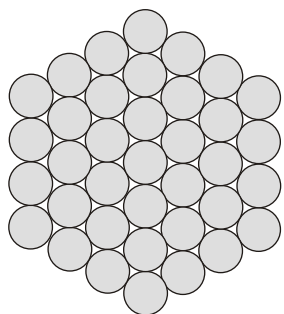
Ph-7f, 78.+Bx2c SMx2c, 79.Ln-2f Ph-9h, 80.Px4d+ DK-5f (Better for White, I thought during the game, was Phx11j+, knocking out a key defender.) 81.+Px4c SMx4c, 82.FL-10k DK-11f, 83.P-2d+ P-12g, 84.Px12g RCx12g, 85.RCx12g Lx12g, 86.Lx12g DKx12g (Since the lance has nowhere to run, this capture can be delayed in favor of C-11i, attacking the gold on 11j six times; but note that this gold also has six defenders! -- not a coincidence.) 87.FL-3e C-11i=, 88.Gx11i Lnx11i, 89.VMx11b+ FKx11b (White has not been able to achieve much with his attack, as Black keeps preventing White pieces from promoting by exchanging them off.) 90.FL-3d+ DK6c-12c, 91.P-1d+ B-12h, 92.+FLx4c. BTx4c, 93.+P1d-1c DK-11h, 94.+Px1b Ph-9i=, 95.Phx9i Lnx!9i, 96.+Px1a VMx3g, 97.Lnx13g P-9h, 98.+Px2a Rx2a, 99.DK-4i BT-5b, 100.RC-1a+ (Now Black can answer R-4a with W-4d.) P-9i+ (diagram)

	12	11	10	9	8	7	6	5	4	3	2	1	
a					金	王	金				飛	鯨	
b		奔	猛		馬	盲	盲						
c	龍												
d					横		銅				と		
e					歩	歩	歩						
f											獅		
g													
h	角	龍	獅		歩	歩	歩	歩					
i				と		銅	横		龍				
j				馬	龍								
k			猛	銀	盲	麒麟	盲	馬			豎		
l			角		王	醉	金	奔	銅		香		

101.DK9j-4j +Px10j

Black now has a *tsume* -- a forced mate in which every move is check. Can you find it? White's position was hopeless in any case, since Black has an extra lance and vertical mover that can quickly promote, and Black can play BT6k-7j if necessary to make an escape route for his king. The final move was 102.DK-4c+; with it, I sent the following "if" moves (note that nothing can interpose against the soaring eagle because of its forward diagonal lion power): if BT(or DK)x4c, 103.DKx4c+; if DK(or BT)x4c, 104.FKx4c; if G-5b, 105.FKx5b; if Kx5b, 106.Ln-4d; if K-6a/5a/4a, 107.Ln-4c mate. ■

R. Wayne Schmittberger is the Editor in Chief of *Games* magazine, where he has worked for more than 20 years. He is the inventor of *Extinction Chess* and numerous other abstract games. Last year, he successfully defended his title of Grand Chess Cyberspace World Champion. -- Ed.



# Strategy Guide Part 1

by Stephen Taverner

When Kris Burm first explained the rules of Zèrtz to me, I was somewhat skeptical about the merit of the game; since the pieces are not owned by either player, I thought that Zèrtz would be a nim-like game, with the board filling up slowly until there was no more available space, and someone was forced to give a capture to his opponent. I could not have been more wrong. I actually played in much this way for some time, gradually realizing that I could force my opponent to capture while I isolated some pieces. It was not until I played Yoshi Ikkai, a Japanese playtester, that I realized just how vicious Zèrtz really is. With just three pieces on the board, he fed me black and grey balls until he had isolated two white balls. I fell in love with the game at that point, though it took me several weeks to figure out just how Yoshi had beaten me!

So, Zèrtz is a fast and brutal game, where experienced players will seldom have more than three or four pieces in play at a time. The ability to force your opponent to capture leads to sequences of forced moves, and the game takes on much the feel of a puzzle. As such, I feel that the best way to teach Zèrtz strategy is through a series of puzzles. In the following articles I intend to present you with the basic principles, then follow up with a few puzzles to illustrate the ideas discussed.

## Rules

Zèrtz is a game for two players. The board consists of 37 loose, convex discs, which are initially arranged in the hexagonal shape shown in the diagram at the top left of this page. The pieces consist of balls, nine black, seven grey, and five white, that fit comfortably into the discs. (The tournament version of the game, discussed in a later article, has ten, eight, and six of each color, respectively.) The board starts off empty. The balls form a common stock for both players. The players move alternately.

There are two types of moves in Zèrtz:

1. Place a ball on the board in an empty disc and remove an empty disc from the board. The disc removed must be at the edge of the board so that it can be pulled away from the main group without disturbing any other discs. Discs removed take no further part in the game. It is compulsory to perform both parts of the move, placement of a ball and removal of a disc, except in rare cases in which there are no empty discs available for removal.
2. Capture a ball or several balls by making a jump or series of jumps. Jumping in Zèrtz is similar to Checkers. A ball jumps over an adjacent ball into the disc immediately beyond the ball being jumped. The three discs involved in a jump must be in a straight line, and the target disc must be empty. Any ball can jump any other ball regardless of color. The jumped ball is immediately captured by the player moving. The jumping ball must continue to make further jumps and captures if positioned to do so. Capturing by jumping is compulsory, if possible. If a player has a choice of jumps he may choose any, regardless of the final number of balls captured.

There is another way of capturing balls. If a player's move causes a group of discs to become isolated so that there are no empty discs in the group, then he captures the balls occupying the discs in this isolated group. The discs are removed from play. This type of capture is automatic and does not constitute a move.

There are two ways of winning:

1. Capture a majority of any one color, i.e. 3 white balls, 4 grey, or 5 black.
2. Capture two balls of each color.

## Basic principles

The rules above result in a very rich and dangerous game. In this section I am going to discuss some of the basics, which will set the tone for the rest of this series.

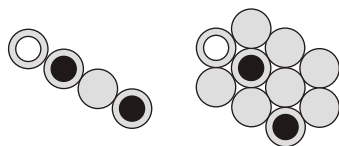
1. *The easiest way to win a game of Zèrtz is by capturing 3 white balls:* Winning combinations are 3 white (3 balls), 4 grey (4 balls), 5 black (5 balls), or 2 of each (6 balls). Clearly, at the start of the game, it's easiest to get 3 white balls than to win in any other way.
2. *Don't set traps:* This is a common misconception; Zèrtz is not a game where you try to set traps for your opponent. Since all balls are owned by both players, anything that you set up for yourself, your opponent can use first. Instead, you are looking to take a profit from the current position, or play to minimize your opponent's profit if you can't see a way to make a profit yourself.
3. *The value of a white ball:* Note that you can give your opponent 8 balls without losing the game (1 white, 3 grey, 4 black). Since you are looking to take 3 white balls, that means you should be looking to pay 2 balls for a single white ball, or up to 5 balls for two white balls in order to make a profit.
4. *Forced moves:* When your opponent is obliged to capture, he cannot do anything else. This means that you can actually take several turns in a row by making your opponent capture one ball after another. It also gives you a chance to rearrange the pieces on the board so they are more to your liking.
5. *The Atlantis effect:* The shrinking board has several consequences; firstly, you can shepherd the balls around the board by strategically removing discs; secondly, as the board shrinks, new strategies become viable.

## Simple exchanges

In this section, we're going to consider the simplest forms of exchange. Where there are two balls on the board, you should be looking to give your opponent 1 or 2 balls for a white. In the early stages of the game, this is unlikely -- the board is too big -- but later in the game it is the simplest way to get ahead. When we get onto the topic of isolation, I will show you potentially more lucrative techniques to use in the same circumstances, but this is the first step on the road to mastery of the game.

There are two basic patterns, shown in Diagram 1, that you are looking to make in order to get a favorable exchange. The *head-on* is the most common exchange. The *trigger* is almost as common and





Head-on  
Trigger  
Diagram 1

much more useful (for reasons I will discuss in the following section). Notice that in both these examples, it does not matter whether you placed the white piece or the black piece next to it. Your opponent must capture the black ball with the white, then you capture the white. This illustrates an important principle: *you can capture a white ball even if there are none on the board!*

Note also that the pattern is not made by the balls alone, but also by the tiles, or rather, the absence of tiles. In order to set up an exchange, you are looking to give your opponent a capture while setting up a capture for yourself. This requires the ball you will be capturing with to be on the edge of the playing area, or your opponent will capture it and leave you with nothing.

Of course, usually your opponent will not be obliging enough to line up the balls like this for you, so you need to force your opponent to put the balls in the right position. Diagram 2 shows an example.

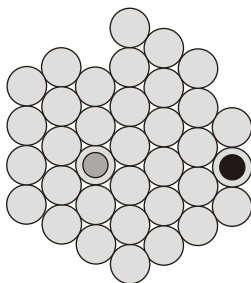


Diagram 2

Note that in this position the balls look impossibly far apart. However, with the forced cooperation of your opponent you can spend a black and a grey ball to get the head-on position:

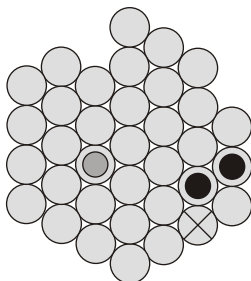


Diagram 3

1. Line up the balls, and remove a key disc (Diagram 3)

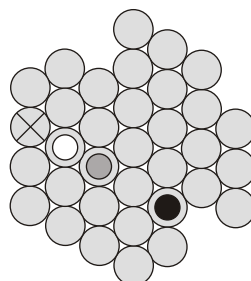
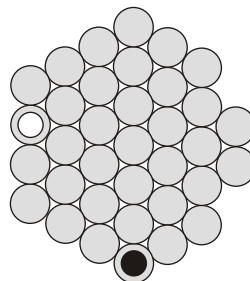


Diagram 4

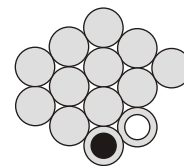
2. Set up the trigger position (Diagram 4). Note that it is necessary to remove this disc, or the opponent could capture the white with the grey. This is another key principle: you can strategically remove discs in order to force the direction of a capture.

## Puzzles

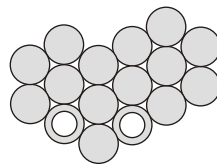
The following puzzles should illustrate the principles I have just discussed. In each of them, you are looking to exchange 1 or 2 balls for a white ball. Solutions are given on page 16.



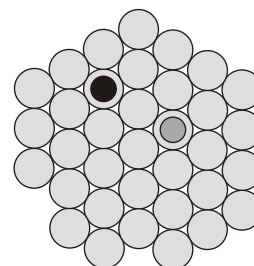
Puzzle 1



Puzzle 2



Puzzle 3



Puzzle 4

## Interview with Kris Burm Creator of Zèrtz and Project Gipf

In *AG1* we reviewed Gipf, and in *AG4* we reviewed Tamsk and Zèrtz and explained a little of the concept behind Project Gipf. In the following interview the Project's Belgian creator, Kris Burm, explains his views on his games and how he expects the Project to develop.

*AG: How do you expect the Project to develop?*

KB: I don't know. The fact that Schmidt Spiele [publisher of Gipf, Tamsk and Zèrtz] and I separated at the end of last year makes a big difference. All I can say is that the continuation of Project Gipf is still uncertain. I, personally, am still very committed, but I have no idea whether that will be sufficient to realize the complete series.

*AG: Can you tell us a bit more about the split?*

KB: It is rather too complex to answer in a few words. As an individual, I can engage myself emotionally; a company cannot do that. My fuel is conviction and belief in quality; a company works with statistics. That went okay for a while, but in the end it always comes back to one question: what are the expectations?

*AG: In other words, Schmidt was not happy with the sales.*

KB: Right. That was the main factor from Schmidt's point of view. From my side there were other reasons. After Zèrtz was released, Schmidt wanted to postpone the fourth game. I thought that was not a good idea. Gipf was a stand-alone game that announced the Project. Tamsk was the second game and the first to reveal something substantial about the Project, but Tamsk alone was not enough to make things clear. With the third game, Zèrtz, I thought that the Project finally had enough weight to take off, if not yet as a

project, than at least as a series of quality games. So, my opinion was that we had to stick to the rhythm of one game per year. It came down to another meeting with Schmidt, and we found a solution: I could go on with the fourth game. But when everything was ready for production to start, there was a disagreement about the game itself.

AG: *This is the game called Dvonn, isn't it?*

KB: Yes. For commercial reasons they wanted me to make a few changes. I understood their arguments, but I couldn't agree with what they proposed, and there was no time left to look for a compromise. From my side this was the reason for the divorce.

AG: *You published Gipf initially as an independent. Do you think it would have been better if you had stayed as an independent?*

KB: Who knows? But one thing is sure: it's a lot harder to make waves as an independent. I'm more than ever convinced that big companies must publish abstract games, too. If only they would have the courage to change their attitude towards that type of game. An abstract game is not a toy or a puzzle, nor is it a normal board game. It needs a completely different approach and different support. I fear that most publishers have lost their affinity with quality; they are so occupied with getting better and better at public relations and marketing and promotion that they can't distinguish a good game from a bad game any more. And the rare individuals who still can make that distinction don't have the guts to go for it. The next step leads to the sales reps, people who never play games, but nonetheless decide what will be proposed to the shops. And at the end of the line there are the shopkeepers. Too few of them really love games, and many of those who initially did love games have put their affinity with good games aside and focused on what sells best. This is understandable, but it is nonetheless a great pity because I'm absolutely sure that potentially there is a big market for abstract games, if only the people involved with games would be a bit more passionate and a bit less obsessed with business. The right angle, the power of a bigger company, and a fair amount of patience -- this is all you need to reopen the market for abstract games.

AG: *Do you think the games of Project Gipf can survive, if not as a Project, then as a series of games or even as separate games?*

KB: If I did not believe that, I would already have given up. It is clear that abstract games are going through difficult times. In Germany a journalist deduced from the divorce between Schmidt and me that abstract games could well be over and done with. This kind of nonsense is typical of the problems abstract games are confronted with. Most people who write about games prefer games with a theme. That is a fact! Abstract games don't fit their interest; they are not their specialty. I wish some writers would be just a bit more careful when they feel the urge to note down their opinion. If there could be a bit more information available about abstract games, and above all better information, it could make quite a real difference. On the other hand, the games of the Project were in general well received and got good reviews. In addition, I get more and more emails from people telling me how much they like the games. Some even call the Project one of the best things that has happened in the game scene the last decade. Whether they are right or wrong is not the issue, just the fact that I get that kind of support matters. Gipf and the related games have an excellent and growing reputation, and that is why I believe that there is at least a chance they'll survive.

AG: *My view is that in a hundred years the popular theme games of today will be long forgotten, whereas many of the great modern abstracts will still be played. Anyway, how do you feel about the review of Tamsk in AG4?*

KB: I had no problems understanding your point. Tamsk got

extreme reactions; some called it a highlight, and others considered it more of a gimmick than an abstract strategy game. That aside, the use of hourglasses as playing pieces was not just to make the game fit in with the Project, as you suggested in your review. The aim was to develop a game with time as an element in the game, not just as a limitation.

I, myself, also prefer Gipf and Zèrtz, but not because Tamsk is not as good. The reason I consider the game less beautiful to play than the other two is a production matter. The hourglasses are not precise enough, but more precise pieces would have made the game at least twice as expensive. So, it was either that or no Tamsk at all. I chose to go for it, but it is hard to say whether it has been the right choice in the context of the Project.

Apart from that, I live with the idea that I have already reached my peak with Gipf. I cannot imagine I will ever do better. But, on the other hand, there's also a little voice in me that keeps whispering that not Gipf but Tamsk is the best thing I did so far. People who don't like time pressure will never like the game; that is a sure thing. That aside, Tamsk is not a game about time but about territory. The fact that each piece carries its own time around the board and will be lost when it runs out of time is nothing but a restriction, just like all the other restrictions that are more commonly accepted. The limitation of a board with 64 spaces is also a restriction that could be considered to be "putting the players under pressure" as there's no escape out of the 8 x 8 frame. A limited number of pieces is also a restriction. In fact, every rule is a restriction. Tamsk adds a restriction that is not commonly accepted yet: time is a factor that must be considered in all the potential movements on the board, just as limitations concerning spaces and pieces must be considered, too. Ultimately, it can be seen as a new way of capturing and sacrificing. In certain situations you can make your opponent lose an hourglass if your piece carries more time. On the other hand, you can let an hourglass deliberately run out of time to block a passage. As such, more than any of my other games, Tamsk introduces something that I would dare to describe as novel. But, I know, all this is just theory; eventually it is not the brain but the stomach that tells whether a game is good or not, even when it is an abstract game that is at issue.

AG: *And where do you place Zèrtz? In many reviews it is called the best of the three.*

KB: I'm very happy with Zèrtz and with the enthusiastic response, of course. Because I talk so much about Gipf sometimes I get the feeling of being a bad father, as if I like one of my babies more than the others. But you must see it from the perspective of the project. Gipf was the start of everything; if I had not have been so convinced of its quality, I would never have dared to set up the Project with its name. Neither Tamsk nor Zèrtz could have functioned as the center of something bigger than the respective games themselves. I mean, they are not strong enough to carry four or five other games, as Gipf can. Gipf is like my eldest son, helping me keep the bunch of younger ones together.

AG: *Why were you so eager to construct the Project around Gipf? Didn't you consider it enough to let the game stand on its own?*

KB: Oh well, there were several reasons. The first one goes back to my youth. I used to play a lot with my younger brother, and we worked out several systems to combine games. One of these systems was a race around the carpet. We both started with three cars or soldiers or whatever. We would play a game and the winner got a roll with six dice, of which he could use the best three results to move his three cars; the loser could roll only five dice. Then we would play another game, and the winner would again have a roll with better odds, and so on. It sometimes took two or three days to finish a race. Now, soon after I started designing games, I made



my first attempt to find a mechanism that would make it possible to combine games. Many more attempts would follow, all without success, until I found Gipf. I had never felt such a thrill before. It is a little embarrassing to explain how beautiful I thought the game was. I played it on my own night after night, fascinated with what was happening on the board. The rules could be worked out in so many different directions, introducing different pieces, functions, and goals, and so on. The game almost presented itself as the mechanism I had been looking for. The many options I had as a designer is the second reason why the game had to become a project. Never would I have succeeded in finding a publisher for what I thought was going to be the strongest version of Gipf. Not only that, I knew enough of the game scene to understand that not more than a handful of players would give the game a try if I proposed the completed version from the outset. Through the Project, with each new game introducing one new piece, players could step into the full game bit by bit. I'm not talking about the possibility of combining games now, but just about Gipf with the additional potentials. That was yet another reason for making Gipf a project: I needed a lot of time to find out systematically what could be added to Gipf. I still need time, so the search goes on.

*AG: Are you saying that the game Gipf is not complete yet?*

*KB: Gipf is complete as it is now, but Project Gipf isn't. Eventually Project Gipf, apart from being a series of games and a mechanism to combine them, will also become a game in its own right, a kind of "ultimate Gipf," played with 12 or 15 additional pieces. That will be my masterpiece, something where everything comes together. But playing "ultimate Gipf" will always remain nothing but an option. I can't stress enough that all the games in the series must be seen in the first place as separate titles, and that counts for Gipf, too.*

*AG: I heard that the next game you'll be publishing is Dvonn. How does it work?*

*KB: It won't come as a surprise if I say that it is played on a hexagonal board, but I'm afraid I can't tell you much more yet. I would like to release the fourth game in the second half of this year, October or so. That means that I still have time left to think things over. Now, I like Dvonn a lot and, what's more, with only a few adjustments it would be a suitable game to close the Project. So maybe I'm going to save Dvonn for later.*

*AG: Are the remaining games in the Project already designed?*

*KB: Until now I have never looked further than the next game. The reason is that it is impossible to predict in which direction the way Gipf is played will evolve. For example, some of the potentials I used to test the project five years ago cannot be used anymore; the level of play today is so much higher than in the beginning that some functions connected to the initial potentials would put the game completely out of balance. So, I look at the project as something that grows organically. I started it as an experiment, and that's what it still is. Nothing is certain yet, not even what already exists.*

*AG: You are clearly a very talented game designer. Do you think your talents, for their full expression, have to move beyond the Project?*

*KB: Beyond the Project? That is a strange question.... Quite a few people have let me know that they consider Project Gipf to be the work of a megalomaniac, too ambitious, too whatever. Anyway, for the time being I can't think of a better use of my talent than to finish the Project and try to hold onto about the same quality as the first three games. I don't think I can ask for more. I say that because at times I fear not to be able to match the standard set by the games introduced so far. What I told you about Gipf as a game also counts for Gipf as a Project: I -- and I'm really honest about*

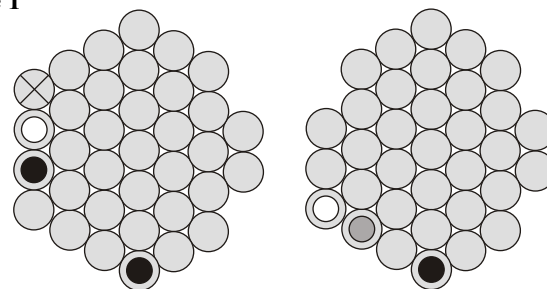
this -- can't imagine that I will ever do better. So, for the time being, and speaking about my talents, I simply can't imagine that there's something beyond the Project. Anything that would go beyond it, would come to me as a complete surprise.

*AG: Well, life is full of surprises.... Thank you very much, Kris, for your candid and enlightening responses. However you do it, I hope you get the next game to us quickly. Good luck!*

### Solutions to Zèrtz Puzzles

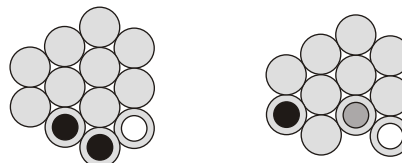
In these solutions, I have marked the disc to be removed only where it is necessary for the solution. Where no disc is marked, it is only important to avoid removing discs that the pieces will be passing through.

#### **Puzzle 1**



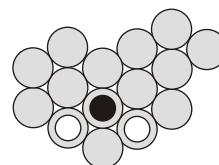
Coax the white ball around the corner, and you have a head-on exchange. This is another case where you have to remove a key disc to make sure your opponent captures in the correct direction.

#### **Puzzle 2**



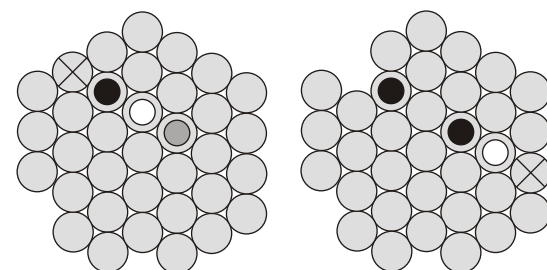
Although the pieces are jammed together in a corner, you can lure one out to get the trigger position.

#### **Puzzle 3**

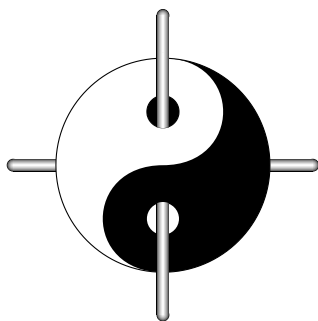


This is neither the trigger nor the head-on exchange, but is a situation you may see occasionally. Whichever way your opponent takes, you can capture a white ball. This only works because both balls are (a) white, and (b) on the edge of the board.

#### **Puzzle 4**



This is the head-on collision again; note that although the balls are in the right positions already, you have to start with a waiting move, allowing you to remove a disc while keeping the initiative. ■



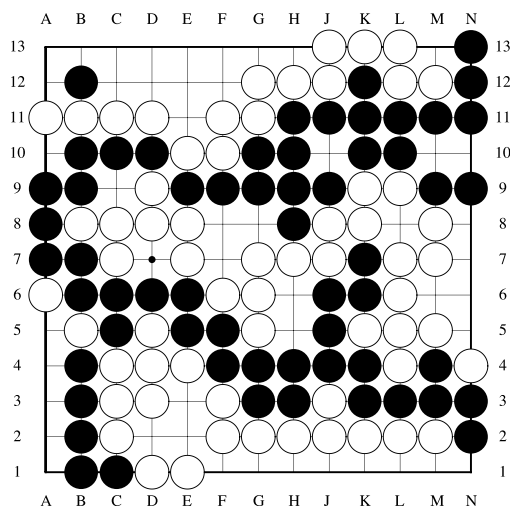
# Gonnect

## The Best of Go and Hex

by Cameron Browne and João Neto

**G**onnect is a recently invented board game in the style of Go, but with an emphasis on connection rather than territory. It combines the simplicity and clarity of Hex with the tactical richness of Go, and simplifies the Go rules while introducing new and substantial strategies.

Go and Hex players are understandably suspicious of the numerous variants that have emerged over the years. However, Gonnect blends the best elements of both of these games to produce some interesting features that distinguish it from the pack, as we shall soon see.



**Figure 1.** A game won by Black on the standard 13x13 board.

Figure 1 illustrates a game of Gonnect won by Black. An unbroken chain of adjacent black stones spans the board from A7 on the left side to N3 on the right side. The run of black stones towards the top of the board is not a winning connection as the pieces at D10 and E9 are diagonal to each other, not adjacent, and therefore not connected.

### Rules of Gonnect

#### Rules in common with Go

- Players take turns placing a stone of their color on an empty point on the board.
- Stones of the same color that are adjacent along a line of the board (not diagonally) are *connected*. A *chain* (known as a *group* in Go) consists of one or more stones of the same color such that any stone in the group can be reached from any other through a series of connected pairs of stones in the chain.
- A stone has a *liberty* if it is adjacent to an empty point. A chain has a liberty provided one of its members does. Chains of stones with no liberties are captured and removed from the board.
- A stone cannot be played such that it creates a chain of friendly stones without liberties, unless that move performs a capture that

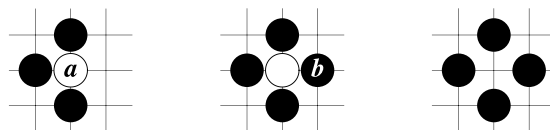
creates a liberty. In other words, suicide is forbidden.

- A player cannot make a move that would recreate the same board position as after his previous move. (This is the *ko* rule.)

#### Rules specific to Gonnect

- Players may not pass.
- The swap option (also known as the pie rule) is in use: the second player may elect to swap colors in lieu of his first move.
- A player wins if he connects either the top and bottom or the left and right edges of the board with a chain of stones of his color; also, a player wins if his opponent has no valid move.

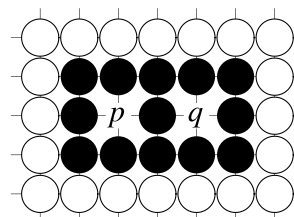
Figure 2 demonstrates the concept of *liberty* with respect to capturing. White stone *a* has one remaining liberty. Black's *b* removes this last remaining liberty. The white stone is captured and removed from the board. Unlike Go the number of captured pieces has no bearing on the game's result. It is sometimes advantageous to offer sacrificial stones for capture.



**Figure 2.** Black stone *b* captures White stone *a* by removing its last remaining liberty.

Figure 3 illustrates a consequence of the "no suicide" rule. The black chain has two *eyes*, at *p* and *q*. Even though the group is surrounded, it is safe as it stands and is called *alive*. White is not allowed to play in either eye due to the "no suicide" rule since stones played at *p* or *q* would have no liberties. White cannot play both *p* and *q* simultaneously, so the Black chain cannot be captured.

Black can legally play at *p* or *q*, but this would be a bad move as it would reduce his safe two-eye formation to a vulnerable single eye, which White could then capture next turn. However, Black may be forced to make such a move in the later stages of the game, as we shall soon see, because passing is not an option.



**Figure 3.** "No suicide" rule. White cannot play at *p* or *q*.

As in Go, there are no diagonal mirror tactics to achieve draws. Unlike Hex it is possible to construct contrived board situations in which both players have winning connections. This cannot occur during actual play as it is not possible for either player to achieve one



of the winning conditions with a move that also gives his opponent a win. One player must win!

One of the attractive features of Gonnect is that it actually simplifies Go to produce what we think is a very intuitive and interesting game. Go is simplified by:

1. Removing the rule that players may pass;
2. Replacing Go's winning condition with a much simpler one that does not involve scoring; and
3. Using the swap option, which is simpler than the *komi* handicapping system used in Go.

### The Invention of Gonnect

Gonnect was invented on July 18, 2000 by João Neto, a 30-year-old professor of Computer Science at Sao Paulo, Brazil, who is currently finishing his Ph.D. on Artificial Neural Nets. His main hobby is designing and playing abstract games.

Gonnect occurred to João in a flash. He was working on his "Variations on Go" website, pondering the many ways the rules of Go could be remodeled, when the intriguing idea occurred to him to change the objective of Go to connection of opposite sides of the board. Sample games revealed that the game suffered from deadlocks caused by live groups with two-eye structures. A rule was developed specifically to combat this problem, but was soon abandoned as being too artificial and not in keeping with the feel of the game.

After some discussion with other gamers, João realized that the "no pass" rule solved the deadlock problem beautifully. Gonnect had been discovered: João sees himself as the discoverer, not the inventor, of the simple combination of rules that make up the game.

The only other modifications to the existing Go rules were discarding the *komi* handicapping system and reducing the size of the standard board from 19x19 to 13x13. This reflects the fact that a game of Gonnect involves several phases of play and will usually take considerably longer than a game of Go on an equivalently sized board. Boards smaller than 13x13 are somewhat claustrophobic and unduly emphasize the connection aspect of the game, whereas larger boards lead to marathon games with elusive conclusions in which the territorial feature dominates. To put this board size into perspective, the 13x13 board contains 644 connections while the standard 11x11 Hex board contains 640 connections.

### Deadlock Resolution

Local battles on the Gonnect board may deadlock where four stones of alternating colors meet at a vertex, as shown in Figure 4. Deadlocks cannot occur on the hexagonal grid where at most three cells meet at each vertex, but the possibility of deadlock severely limits the playability of Hex-like connection games on the square grid.

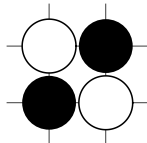


Figure 4. Deadlock condition on the square grid.

However, Gonnect has a very elegant mechanism for resolving deadlocks: due to the "no pass" rule, at least one of the deadlocked chains will be captured at a later stage of the game, freeing up space for the battle to continue. This deadlock resolution is central to Gonnect's unique character and is demonstrated in Figure 5, where Black must lose no matter

whose turn it is.

If it is Black's turn to play, there are no legal moves due to the "no suicide" rule. Black must therefore forfeit the game.

If it is White's turn, then he should play in one of Black's eyes at B5 or E2 to capture the chain and establish an unbeatable position. Even though the capture opens up space on the board, Black cannot stop White from eventually connecting. Proof of this is left as an exercise for the reader.

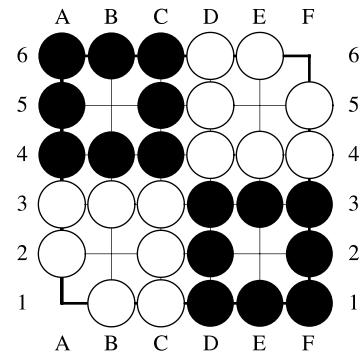


Figure 5. Deadlock resolution.

The "no pass" rule results in a typical game of Gonnect consisting of three distinct phases:

1. The race stage,
2. The eye-making stage, and
3. The eye-filling stage.

During the initial *race* stage players vie for connection across the open board and try to establish safe groups while blocking their opponent. A typical game between two careful players will eventually result in a temporarily deadlocked board, unless either player is overly aggressive and allows his more patient opponent an opening and a premature connection for victory.

Once a global deadlock is reached the game enters the *eye-making* stage. By this point the board is divided into vaguely defined regions belonging to each player. Players now attempt to push their boundaries and squeeze their opponent's territory until safe groups with at least two eyes are formed and the areas belonging to each player are clearly defined.

In the final stage of the game, the *eye-filling* stage, each player is forced to fill in one of his eye points with each move. The number of eye points belonging to each player now becomes critical, as the first player forced to reduce one of his group's eye spaces to a single point then loses that group, and the game returns briefly to the eye-making stage. A close game will usually fill the board then turn into a contest to see who can keep their deadlock groups alive the longest.

Figure 6 shows a game that has already reached a temporary global deadlock. This can be demonstrated by observing the local deadlock at J8-K7, J7-K8. Black's deadlocked stones at J8 and K7 are connected to safe chains that occupy the top left and bottom right areas of the board, and White's deadlocked stones J7 and K8 are connected to safe chains that occupy the bottom left and top right areas of the board. Neither player can make a direct connection as things stand. They should each now endeavor to enclose as much territory and make as many eyes as possible, in preparation for the upcoming eye-filling stage.

Some players may find the eye-filling stage in Gonnect to be more interesting than the endgame in Go. One thing that would appear to decrease Gonnect's depth is that the players often know who is ahead in the game earlier than would be possible in a game of Go. However, this is precisely the feature that may give the game more tension than the early game in Go.

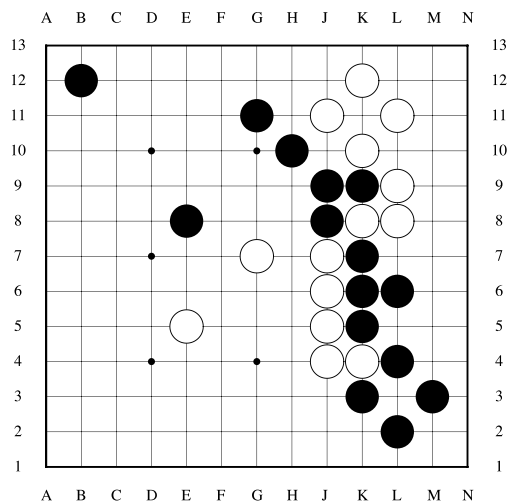


Figure 6. A temporarily deadlocked 13x13 game.

### Opening and Swapping

Gonnect is more like Hex than Go in the opening stages. The first player in Gonnect has a huge (winning) advantage if allowed an unconstrained first move, and clearly defined lines of local attack develop right from the start. Go tends to unfold more subtly in the opening stages, with players pushing to establish global territory.

The swap option is a technique widely used in Hex and other games of this nature to neutralize the advantage of playing first. It ensures that the first player does not make an overly strong opening move.

Let's assume that Black starts. As in Hex, the strongest opening move is the central point G7. This strong opening should obviously be swapped by the second player. In our experience, C11 (or any of its reflections C3, L3 or L11) is the optimal opening as it is the strongest opening that the opponent will have doubts about swapping. It is always an advantage to keep the first move, as race to connection is an important aspect of Gonnect.

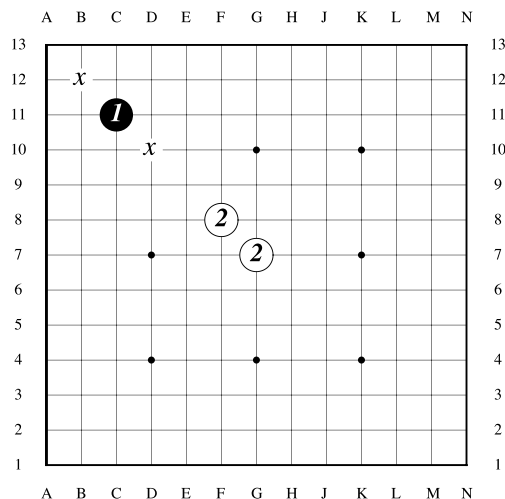


Figure 7. Safe opening moves.

Notice that the opening plays shown in Figure 7 all lie along the diagonal. The diagonals take on extra importance because connection to all sides is equally important. C11 appears to be the balance point along the diagonal; B12 is too close to the edge and in danger of being trapped and captured (with White playing 2 C11 himself), while D10 is a bit too far in and gives White some latitude to connect to either edge.

White's best reply to 1 C11 is also along the diagonal. Moves F8 or G7 both establish a base in the center and put pressure on 1 C11. They appear to be equally good. E9 is a little too close to the opening piece and also a bit too far away from the center to be safe.

### Gonnect and Go

Gonnect and Go, being played on the same grid and with similar rules, must necessarily share some basic strategies. In this section we present a few of the more relevant fundamental Go strategies. Obviously we do not have space to explore Go in any depth, but the reader may consult any Go reference book.

The leftmost diagram of Figure 8 shows a basic blocking technique. If White wishes to block the black stone from connecting to the right, move *x* is too close and will not impede it for long. Moves *b* are suitable for blocking progress along the upper and lower right diagonals, while moves labeled *c* are suitable for blocking horizontally to the right.

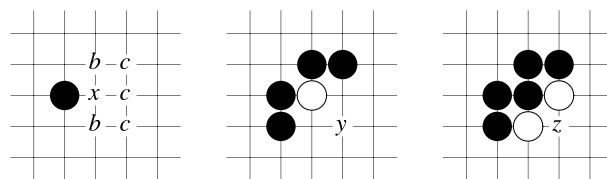


Figure 8. Blocking, trapped piece and a fork.

The middle diagram of Figure 8 shows a white stone trapped by two phalanxes of Black stones. If Black plays *y* then the white stone is as good as lost. White can play at *y* to keep this stone alive.

The rightmost diagram of Figure 8 shows a *fork* situation. If Black plays at *z*, then both white stones are reduced to a single liberty, and at least one white stone must die.

Ladders are another case where Go and Gonnect strategy complement each other. For instance, Figure 9 shows a black stone *x* with only one liberty left. Black is forced to play move 1 to keep the stone alive. However, White is able to play a series of forcing moves 2, 4, 6, 8 etc. that maintain this structure until Black's chain (1) is driven into an edge and captured, (2) encounters a previously placed white stone and is captured, or (3) encounters a previously placed black stone (the *ladder breaker*) and escapes.

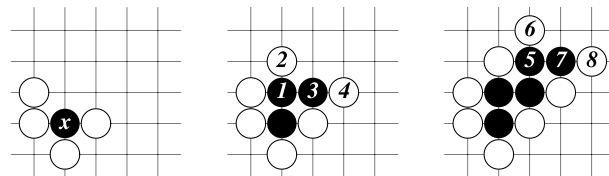
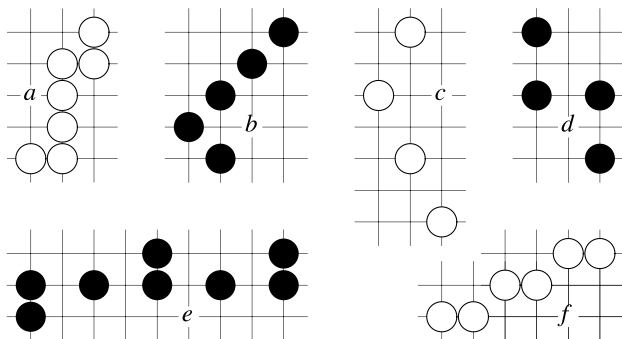


Figure 9. Black piece *x* caught in a ladder.

Ladders and ladder breakers play a large part in Gonnect as they define lines of connection and lines of defense.

Figure 10 shows the relative strengths of various connective formations on the square grid. This aspect is highly relevant to Gonnect, where connection and connective potential is of the utmost importance. Connection *a* is unbreakable (except for capture) but slow to develop. Connection *b* is almost as safe as *a* and provides greater diagonal or sideways coverage but no end-to-end advantage in distance. Connection *c* is weaker but offers the greatest distance advantage, while connection *d* is strong and fast. Connection *e* is strong and good for movement along an axis. Connection *f* is reasonably strong but slow to develop. In general, *the more distance a connection has to cover, the weaker it is.*





**Figure 10.** Connective potential.

Loose diagonal connections such as *c*, which Go players may know as *keima*, or knight's extensions, will delay the final orthogonal connections. Orthogonal connections might be even more valuable than they are in Go.

### Connect and Hex

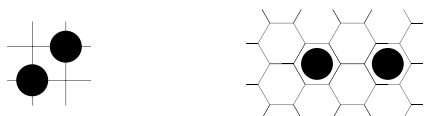
Apart from the Hex-like winning condition that dramatically biases the nature of the game towards connectivity, Hex and Gonnect do not otherwise have a great deal in common. This is largely due to the dynamic piece activity arising from capture and the nature of the square grid itself.



**Figure 11.** Freedom on the square and hexagonal grids.

Consider the situation shown in Figure 11. Black requires three moves to reduce the white stone to a single liberty on the square grid. The diagram on the right shows an analogous case on the hexagonal grid. Although the white stone still has two remaining liberties and is not in danger of capture next turn, it has effectively been removed from the game -- Black would waste two moves attempting to capture it.

Go's elimination of liberties is therefore not a suitable criterion for capture on the hexagonal grid. Even stones surrounded by three enemy stones are rendered relatively useless on the hexagonal grid and require three extra moves for capture. This problem could be addressed by devising more complicated and less intuitive capturing rules (for instance, pieces with less than three liberties are captured), but the elegance of the final game is compromised.



**Figure 12.** Bridge formations on the square and hexagonal grids.

Another point where Hex and Gonnect differ substantially is in the formation of *bridges*, or pairs of disjoint stones that share two common adjacent empty points, as shown in Figure 12. The square bridge, although equally secure as the hexagonal bridge, does not actually gain more space than an adjacent move except in the diagonal direction and is in general less aggressive. A more detailed comparison of play between the square and hexagonal

grids is given in *Hex Strategy: Making the Right Connections*.

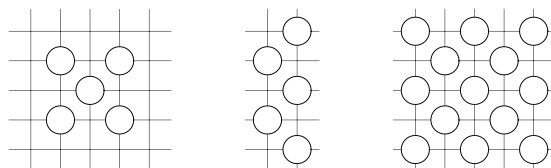
Hex players will be comfortable with the concept of connecting opposite edges, and should be intrigued by the freedom allowed in connecting either top-bottom or left-right. Even though globally deadlocked games are not possible in Hex, players will also be familiar with the concept of blocking dangerous connections by means of local deadlocks.

### Basic Strategy Specific To Gonnect

Gonnect looks similar to Go on a superficial level, but there are substantial differences between the two games:

1. The emphasis is on connecting, not surrounding.
2. Capturing is not always advantageous.
3. The size of territory owned by each player is irrelevant, except for the number of eyes it allows.

Go tends to be "outwards in" in nature, as it is more important to build a strong periphery around a region. In contrast, Gonnect tends to be "inwards out" in nature, as players attempt to build strong bases from which to extend connections. For example, the pattern on the left in Figure 13 is a strong connective formation. The central stone is unassailable as it stands, and to break this connection, Black must surround at least two of the outer stones.



**Figure 13.** Good connective frameworks for Gonnect.

There are three basic ways to win a game of Gonnect:

1. Race to connect,
2. Capture to achieve connection, and
3. Deadlock resolution.

We have found that the best recipe for success is to play initially for a deadlock, while accumulating as much territory as possible in preparation for the eye-filling battle ahead. This allows the player to form a solid base from which to develop his position without fear of premature defeat. A game won in the pre-deadlock race stage usually means that the losing player has been overly aggressive or careless.

The middle formation in Figure 13 shows a strong way to develop a connection. Although it is formed from indirectly connected diagonal moves, this set of stones defends itself nicely on both sides. Black cannot easily attack it directly and will have difficulty stopping White from filling it in for a solid connection later in the game.

Once the board has been deadlocked, players should attempt to intrude into their opponent's territory as much as possible to reduce the opponent's capacity to generate eyes. It is essential to cram as many eyes into the available space as possible in preparation for the eye filling stage. The rightmost formation in Figure 13 shows an optimal packing of eyes in a given area. The question of how to fill very large territories remains unanswered as it is not a natural part of Go. There are many general principles waiting to be discovered! A good move is one that:

1. Improves the player's connection,
2. Interferes with the opponent's connection, and
3. Gains territory for creating eyes.

This is really the aspect of the game in which Go and Hex strategies combine nicely to produce unique new strategies. The connection aspect is generally uppermost, with the territory-

grabbing component more a contingency plan for later.

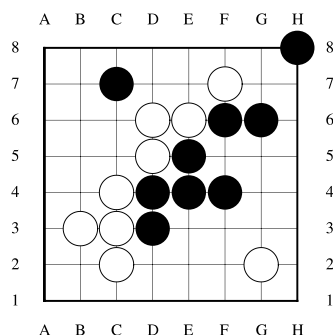


Figure 14. Black to play and win.

Although experienced Go players will have a head start in Gonnect due to the basic tactical similarities between the two games, there are also traps they must beware of. A common mistake made by Go players is to waste moves capturing an army of pieces that gains (possibly substantial) territory but does not improve their connection, allowing the opponent to play around the periphery of the battle to achieve a superior result from the conflict. Conversely, if a player may connect through an unresolved region to win, then any capture of his stones in that region is bad, much worse than a capture in Go. Not only is a potential connection removed, but the opponent consolidates his blocking connection.

Suicidal moves are often acceptable as defensive blocking moves. For instance, Figure 14 shows a case where Black must insert a stone into White's structure in order to delay the connection if Black is to win. White is four moves from a winning connection, while Black is five moves from a winning connection, so Black looks likely to lose the race even though it is his turn to play.

However, delaying move C5 is a killer move that wins the game for Black. White can easily capture C5, but in doing so will waste valuable moves, while Black completes a connection up the right side of the board. In fact, White *must* remove C5 to complete a White connection, so White will lose. *If a player knows that his connection is slower than his opponent's, he must create delays by placing defensive blocking stones.*

One of the joys of Gonnect is that pieces may be happily sacrificed in some circumstances. If the sacrificed pieces are irrelevant to the central connection, then the opponent will waste at least one move performing the capture.

### Conclusion

Gonnect simplifies the Go rules and winning condition to achieve a game with more tangible goals, great scope for attack, and a progression of distinct phases of play. It enhances the style of Hex-like connection games with the dynamic element of capturing, and the freedom to connect either top-bottom or left-right. We cannot assert that Gonnect is superior to either of these great games, but it does combine some of the best elements from both to produce a rich game with unique and deep strategies that is most enjoyable to play and has great scope for further study. ■

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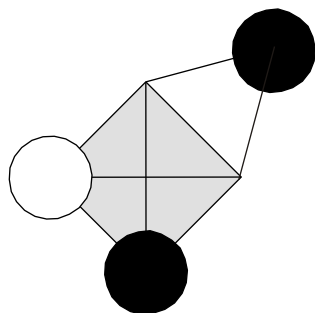
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# ONYX

## Strategy and Tactics

by Larry Back

With the debut of Onyx in *AG4* it is now time to discuss strategy and tactics. As I am the inventor, and I have had the game virtually to myself for five years, it would seem I am the one most qualified to present such a discussion. However, I hope one day that someone will be able to teach me a thing or two about the strategy and tactics of Onyx. In the meantime, my wisdom on the game will have to suffice.

Despite Onyx having a capturing rule and a unique board comprised of a grid of two different interlocking triangles, it is quite a bit like Hex in that the board is four sided and players try to connect two opposing sides with a chain of their pieces. Therefore, although Onyx tactics are quite different, I do not think the strategy differs much from that of Hex. As a result, I recommend getting acquainted with the rudiments of Hex strategy before tackling Onyx.

To add a twist to the strategy, I stipulated in the official rules that each player should start the game with two pieces along each of the two sides of the board belonging to the opponent. This rule has the effect of giving more strategic prominence to the side and corner regions of the board than would be the case if the board started out empty of pieces. In Hex early moves tend to be played around the middle of the board, but in Onyx one needs to think about securing corner connections early in the game as well. The position in Diagram 1 shows a game in which Black has secured corner connections early, while White has concentrated on playing to the middle. After six moves Black cannot be stopped from forming an unbroken chain connecting the top and bottom of the board along the West side.

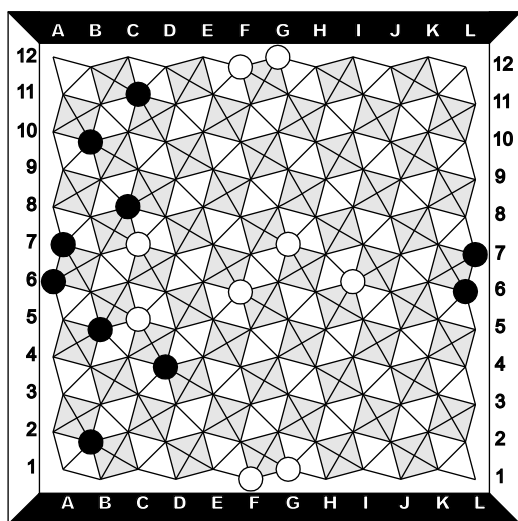


Diagram 1

To say that it is important to form corner connections early in the game does not mean that the middle of the board should be

ignored. Early moves to the middle of the board can be important, too. In the previous example if White had made one key move in either the North-West corner or the South-West corner and thereby stopped Black from linking the North and South sides of the board, then, with White's dominance of the middle, White would have been in a very good position. Therefore, early in the game players need to consider moves to both the middle and the corners of the board. Which area of the board is a priority will depend on the position.

To begin a discussion of tactics, I think it is important to identify and label the various potential connection formations that can occur. Diagram 2 shows five such formations.

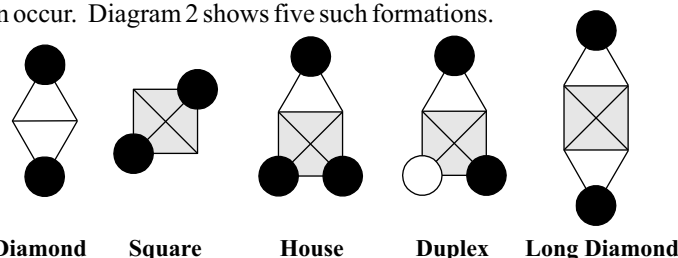


Diagram 2

### Diamond

This is equivalent to the two-way stretch in Hex. The two black pieces can be connected in two ways. It is a very secure connection for Black. Only a move by White to one of the two unoccupied points that forces Black to respond elsewhere can break it.

### Square

This is similar to the diamond connection, although it is a little more precarious. A move by White to one of the two unoccupied corner points of the square threatens not only to break the connection, but also to capture the two black pieces on that square. If Black is forced to respond elsewhere, then the two black pieces can be captured. To illustrate how such a threat could be utilized, Diagram 3 shows a move by White to 'I' which threatens to break Black's square connection with a move that would capture the two black pieces on that square and also threatens to break Black's diamond connection. Black can only stop one of these threats.

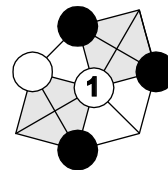


Diagram 3

### House

This connection is similar to the diamond, but it involves three pieces. Since no capture is threatened by a White move to one of the two unoccupied corner points of the square, this is a secure

connection. Only a move by White to one of those corner points that forces Black to respond elsewhere can break it.

### Duplex

A duplex (2-family house) is similar to the house, but differs in that it involves one of the opponent's pieces. It may seem strange that a connection depends on the presence of an opponent's piece, but that is the nature of Onyx. Without the white piece White could play to the corner point between the two black pieces and break Black's connection. With the presence of the white piece such a move would prompt Black to make a capture by playing to the remaining unoccupied corner point of the square resulting in a square connection for Black. However, the duplex is not unbreakable. A move to either corner point by White that forces Black to play elsewhere can break it. Even a capture by Black doesn't necessarily prevent White from breaking the duplex connection because White can replace the captured piece and threaten to recapture. In fact, one of the interesting aspects of the Onyx capturing rule is that when a captured piece is replaced it always threatens a recapture. If such a move forces Black to respond elsewhere, then White can make a recapture on the square and break Black's connection. For example, in Diagram 4 on the left Black has two duplex connections and yet White can break one of them by playing to 'B' or 'C'. A White move to 'C' threatens to connect at 'B'. If Black responds by playing to 'B', then White can make a capture at 'A'. The figure on the right shows what happens after a White move to 'B'. Black can capture by playing to 'C' with '2' and White can replace the captured piece at 'B' with '3'. This move threatens both to recapture at 'D' and to connect at 'A'. Black will only be able to stop one of these threats. If it is Black's turn in the position on the left, then Black can play to 'A' to ensure the connection of all the black pieces.

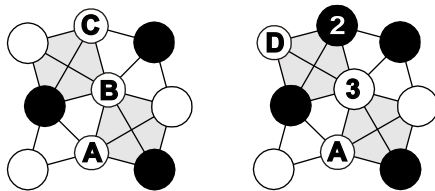


Diagram 4

### Long Diamond

I believe there is an expression in Go to the effect that if you don't know the ladder then you don't know Go. Well, I also believe a similar expression could apply to Onyx. If you don't know the long diamond, then you don't know Onyx. Even though the two black pieces appear to be far apart, it is a very powerful connection. This is because in order for White to stop the two black pieces from connecting, White has to play to the midpoint of the square. Since the midpoint of a square is only adjacent to four other points this is generally a weak move. However, in certain situations such a move is called for and this is one of those situations. The sequence in Diagram 5 on the left shows what can happen when White plays to one of the corner points of the square. The sequence on the right shows a possible continuation after White plays to the midpoint of the square.

Even though a move to the midpoint of the square by White will stop Black from connecting the two black pieces, it will leave Black with two forcing moves and two choices for each of those forcing moves. For example, in Diagram 5 on the right '2' forces White to play '3', and '4' forces White to play '5'. Depending on the location of both black and white pieces in the

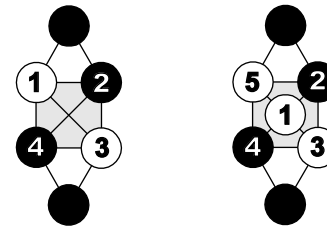


Diagram 5

surrounding area, these forcing moves can be very powerful.

To cut down on Black's forcing options, it helps if White has at least one piece nearby. For example, in the positions in Diagram 6 White has a piece near Black's long diamond connection. In the example on the left the white piece is well placed since there are two ways to connect it to '1'. In the example on the right the white piece is less well placed since there is only one way to connect it to '1'. Nonetheless, it helps White to have this piece nearby since the threat of connection to '1' reduces Black's forcing options.

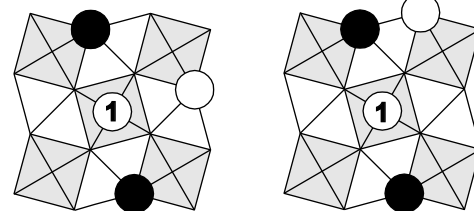


Diagram 6

### Opposition Long Diamonds

Long diamonds are not only significant for offensive purposes but they are also useful for defensive purposes. Quite often, in order to stop your opponent's progress, the best move is one that forms a long diamond with your opponent's piece. Diagram 7 shows an opposition long diamond.



Diagram 7

In order to illustrate the effectiveness of an opposition long diamond it is helpful to examine each of White's moves to the 'A', 'B', 'C', 'D', 'X' and 'Y' points in Diagram 8. In an attempt to stop Black from building a chain from the black piece to the South, the move to the 'X' point, forming an opposition long diamond, is best. A move to the 'Y' point could also be effective, but a move to any of the other points fails to stop Black from breaking through to the South.

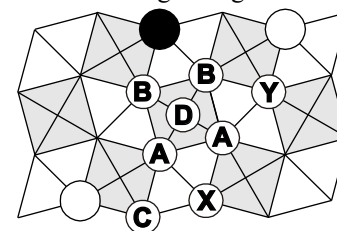


Diagram 8

The positions in Diagram 9 show what happens when White plays to either of the two 'A' points to stop Black from breaking through to the South. In each case White tries '1' to impede Black's progress, but Black easily answers with '2' forming a duplex. After '2' White can respond with '3', but Black still breaks through to the South.

Similarly, a move by White to one of the 'B' points produces the



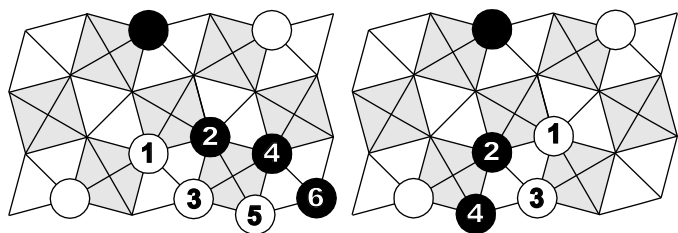


Diagram 9

same result, as shown in Diagram 10. Again, after '2' White can respond with '3', but Black breaks through to the South regardless. In the example on the right this is accomplished with a duplex connection at '4'. If White had played to '4' instead of '3' then Black could have formed a duplex by placing a piece at '3'.

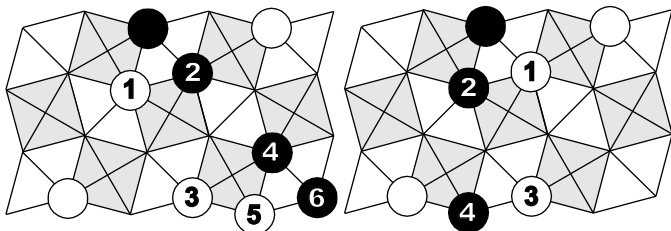


Diagram 10

The next continuation shows a White move to the 'C' point. If, in the Diagram 11, White tries '1', then Black can create a duplex connection by playing '2'. After White plays '3' Black can play '4' to create a long diamond connection with the original black piece. This move compels White to play '5' to the midpoint of the square to break the long diamond connection, but then Black plays '6' to create a North-South chain.

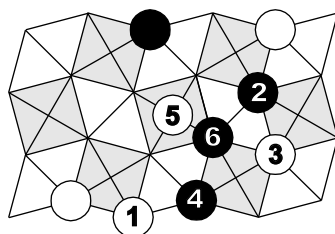


Diagram 11

Also, White can try moving to the midpoint of the square below the black piece by playing '1' to 'D', as shown in Diagram 12. Black can then create a duplex connection by playing '2'. After '2' White has no way to stop the black piece at '2' from connecting to the South. A White move to '3' is answered by '4' and if White responds with '5' then Black makes a capture with '6'.

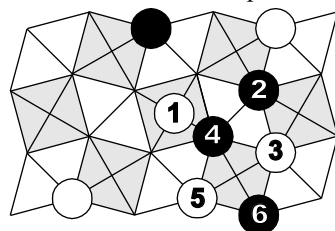


Diagram 12

The positions in Diagram 13 show what might happen after White plays to 'X' to form an opposition long diamond. Now Black's attempts to break through to the South are not successful. In the example on the right, Black makes a capture with '8' but White can replace '7' with '9' and threaten a recapture. After Black defends

against the recapture threat White can play '11' to 'E' to stop Black from building a North-South chain.

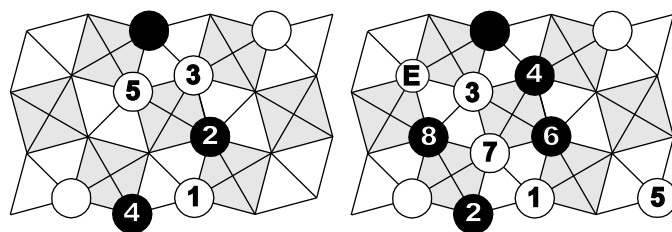


Diagram 13

Finally, in Diagram 14, White can play '1' at 'Y'. Black can reply with '2' to the midpoint of a square. This leads to a continuation where Black captures with '6', and White makes a capture with '9'. However, after '9' Black can replace '8' with '10' to threaten both a recapture and a move to 'E'. White can only respond to one of these threats, so Black is able to build a North-South chain. This chain, however, does not involve the original black piece.

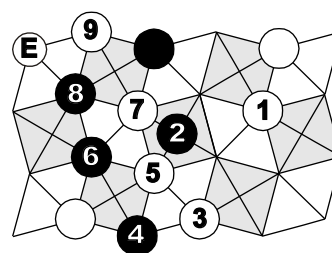


Diagram 14

The result of this analysis has shown that a move to the 'X' point to form an opposition long diamond is best for White as it completely stops Black from creating a North-South chain. A move to 'Y' is second best in that Black still forms a North-South chain, but one that does not include the original black piece. Other moves are ineffective in preventing the black piece from connecting to the South. Of course, this analysis has been done in isolation from the rest of the board. In an actual game the entire position must be taken into consideration when deciding which move is best. However, moves that create opposition long diamonds should always be considered in any situation, and this analysis helps to demonstrate the effectiveness of such a move.

### Moving to the Midpoint of a Square

With the exception of points on the edge of the board, corner points of squares are adjacent to seven other points including five other corner points. In contrast, midpoints of squares are only adjacent to four other points. As a result, square-midpoint moves are generally weak and should only be used in specific situations. We have already looked at one such situation where a player is trying to break an opponent's long diamond connection. There is one other situation where midpoint moves are effective, which I call a stand off. Diagram 15 shows a stand off.

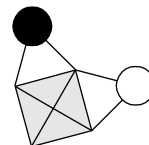


Diagram 15 -- Stand Off

In this situation neither player wants to be the first to move to one of the corner points of the square. If it is Black's turn, and Black is trying to build a chain to the South, and White is trying to build a

chain to the West, then the four sequences in Diagram 16 show what happens when Black moves first to one of the four corner points.

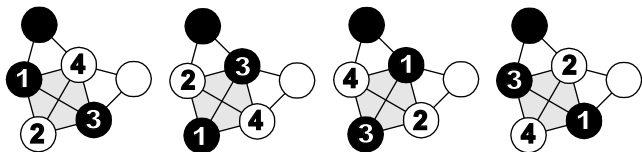


Diagram 16

In each situation White answers '1' with '2'. If Black plays '3' then White plays '4' and captures the two black pieces on the square and breaks through to the West. If Black does not play '3' then White breaks through to the West regardless. So, either way, by playing first to one of the corner points of the square Black ensures that White breaks through to the West. Similarly, if White were to move first to one of the corner points of the square then Black would end up breaking through to the South.

As a result, neither Black nor White wants to be the first to move to one of the corner points of the square. If he has the next move, Black typically has three options, as shown in Diagram 17.

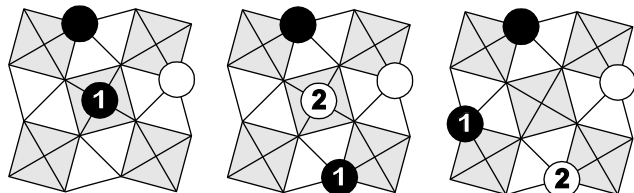


Diagram 17 *Compass Formation*

Black can either play to the midpoint of the square or Black can form a long diamond and entice White to move to the midpoint of the square. Another option is to form an opposition long diamond to the white piece. White, in turn, may set up an opposition long diamond to Black's piece, resulting in a compass formation. Which of these three choices is preferable depends completely on the position of both black and white pieces in the surrounding area.

### The Edge

The two positions in Diagram 18 show two different situations where Black has a piece on a point that is two lines from the bottom edge. In each situation if White does not have a piece on one of the points marked 'X', then, even with the next move, White cannot stop Black from connecting the black piece to the edge. Notice that in the example on the right, Black is threatening to play to B3 or D3. Each of these moves will create the situation on the left. Also notice that in each of the two diagrams, there is only one square midpoint that, if occupied by White, will help White stop the black piece from connecting to the edge. This demonstrates the general weakness of square midpoint moves.

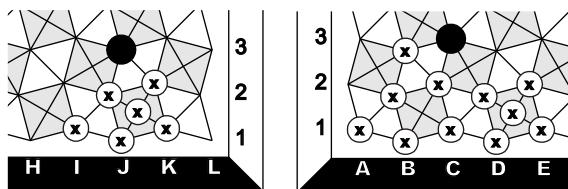


Diagram 18

### Snakes

Onyx has its own version of the ladder, which I call a snake. Diagram 19 shows a snake. White is trying to move East from '1'

while Black is trying to move South from '2'. Whether White is ultimately successful in connecting to the East side or Black is ultimately successful in connecting to the South side will depend on the position of the pieces with respect to the board's main diagonal.

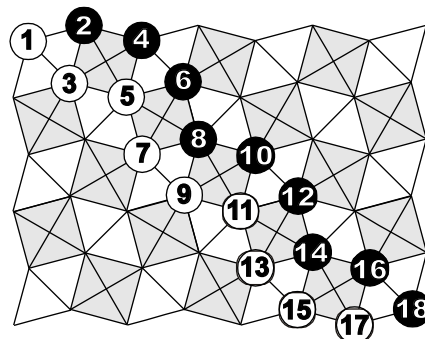


Diagram 19

A sequence of moves that may be played instead is shown in Diagram 20. Black creates duplex connections while White creates diamond connections. The result is the same.

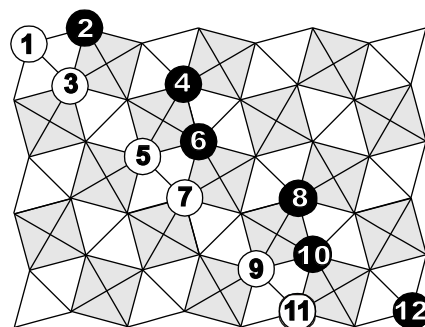


Diagram 20

### Main Diagonals

Because of the snake, it is often advantageous to play to a point on either of the board's main diagonals. The main diagonals are represented by the 'A' and 'B' points in Diagram 21.

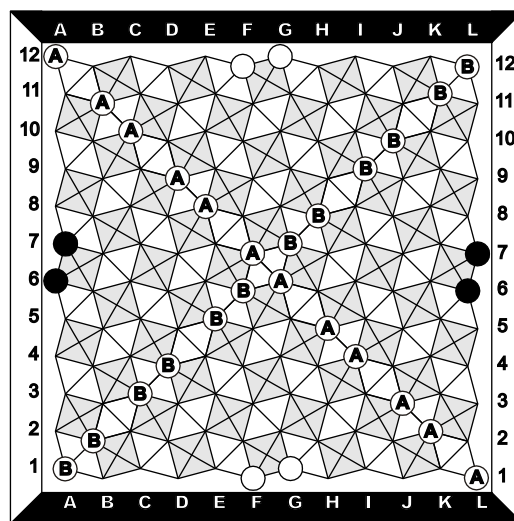


Diagram 21

Diagram 22 shows two attempts by Black to connect to the South in the lower left corner of the board. In the first example Black

plays '1' to C4, a point above the main diagonal, allowing White to respond with '2' to C3, a point on the main diagonal; Black is prevented from connecting to the South as White ends up connected to the West. In the second example Black plays '1' to D4 on the main diagonal, and ends up connected to the South.

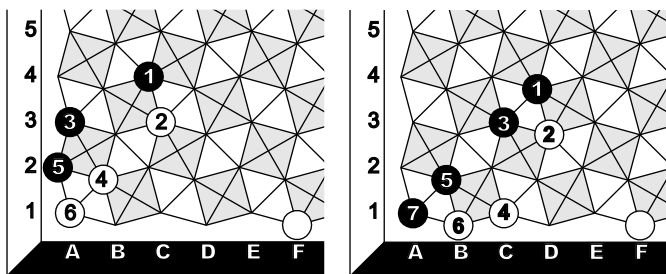


Diagram 22

After Black plays 1.D4 White would be better off playing 2.C1 in order to form an opposition long diamond, as shown in the two examples in Diagram 23. After 2.C1 Black could respond with 3.B2, another main diagonal move. After 3.B2 White's only move to prevent the black piece on D4 from connecting to the South is 4.C2. The example on the left shows what happens if White plays 4.C3. In that case Black can connect to the South side. After 4.C2 Black can start a chain up the left side as shown in the position on the right, although it does not link to the black piece at D4.

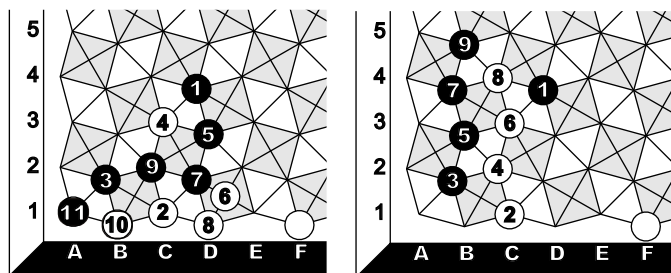


Diagram 23

In the third example Black plays to D3, a point below the main diagonal. White cannot stop the black piece on D3 from connecting to the South. However, White can play to D4, a point on the main diagonal, in order to stop Black from building a chain to the North from the piece on D3. Now a good move for Black would be to form an opposition long diamond by playing 3.A3 to try to stop the white piece on D4 from connecting to the West. After Black plays 3.A3 White can play 4.B2, another main diagonal move. The top-left figure of Diagram 24 shows a failed attempt by Black with 5.C2 to stop White from connecting to the West. In the top right, Black plays 5.B3 instead, which leads to the continuation in the two lower figures, where 10.D2\* and 13.D3\* result in captures. In this continuation Black fails to connect 1.D3 to the South after all, and White fails to connect 2.D4 to the West. White does build a chain that is connected to the West side, although the white chain has little influence over the rest of the board. The entire board needs to be considered in order to discern which player benefitted most from this continuation. Other continuations are possible after 5.B3 where, once again, neither player ends up with a clear advantage. Nonetheless, this continuation should demonstrate that Black is generally better off with a main diagonal move like D4 rather than a move above or below the main diagonal such as C4 or D3.

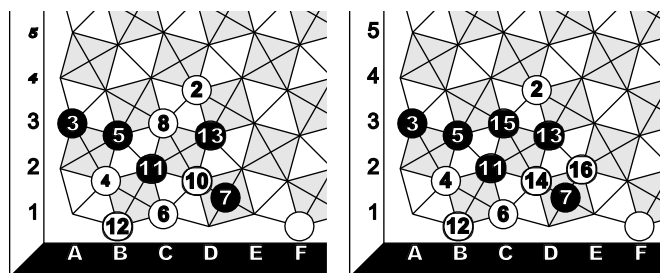
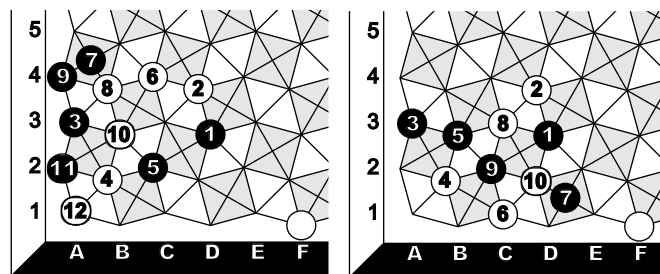
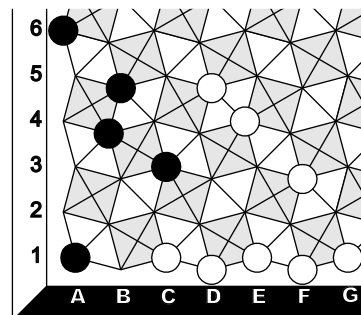


Diagram 24

### Poison-Piece Maneuver

One of the interesting aspects of Onyx is that it can actually hurt you to have a piece on a certain point of the board. A corollary is that it can actually help you when your opponent has a piece on a certain point. The duplex connection is an example of this. This property of Onyx gives rise to a tactic not found in other connection games: the poison-piece maneuver. The idea of the poison-piece maneuver is to force your opponent to place a piece on a point where that piece hurts your opponent's position.

For example, in Diagram 25 White is trying to break through to the West side in the lower left corner of the board. Black has a long diamond connection between the pieces at A1 and B4. Only a move to AB23 can break that connection, but Black can answer that move with 2.C2. If White then plays 3.B2, Black can play 4.B1\*, which captures and stops White from connecting to the West. A White move to B2 is answered by Black with 2.A2 forming a duplex connection. However, if Black already had a piece on B3, then White could play 1.B2 and a Black reply of 2.A2 would be followed by White making a capture with 3.A3\*. So Black does not want a piece on B3 in this position. Such a piece would be a poison piece. Therefore, the key to White breaking through to the West is to force Black to place a poison piece at B3. White can accomplish this with an attacking move to C4. A White move of 1.C4 threatens to capture at B3. If Black defends by playing 2.B3, then White can play 3.B2, and Black's piece at B3 prevents Black from stopping White connecting to the West since 4.A2 would be followed by 5.A3\*, a capturing move for White.





If Black decides not to defend against the capture, then White connects to the West regardless. For example, after White plays 1.C4, if Black tries 2.A2 then White can play 3.A3. If Black responds with 4.B3, then White plays 5.B2\* and connects to the West. Another attempt for Black could be 2.A3, but then White has 3.A2, where 4.B2 would be followed by 5.B3\*\*, a double capture for White, and 4.B3 would be followed by 5.B2. Either way, White connects to the West.

Finally, Black can try 2.AB23, but then White makes a capture with 3.B3\* and threatens to connect at A3. If Black plays 4.A3, then White can play 5.B4 and after Black plays 6.A4 White plays 7.A5\* making a capture and ensuring a connection to the West. Or, Black can play 4.B4, threatening a recapture. If White defends with 5.C3, then Black plays 6.A3 and stops White from connecting to the West. So instead, White ignores the recapture threat and plays 5.A3. If Black makes a recapture with 6.C3\*, then White can play 7.B2, which threatens to connect at A2 and B3. Black cannot stop both of these threats so White would connect to the West.

The result of this analysis shows that, in this position, only a White move to C4 forcing Black to place a poison piece on B3 can ensure that White connects to the West.

### Actual Game

To conclude this article, I present a position from an actual game of Onyx played by email. In this position Black played the wrong move and lost. However, it turned out that Black had one winning move.

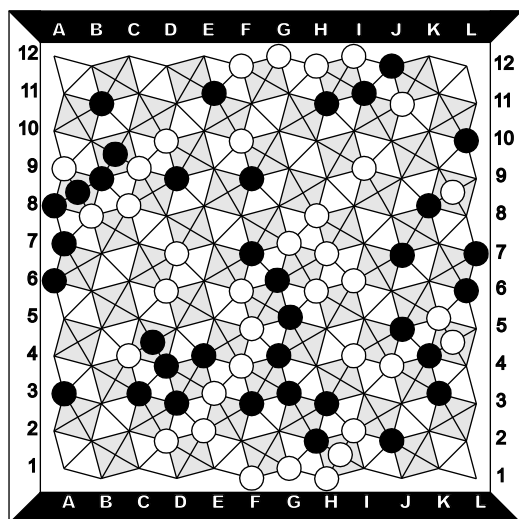


Diagram 26

Your mission, should you decide to accept it, is to find Black's winning move. The solution is given on page 29. ■

### Board Game Studies

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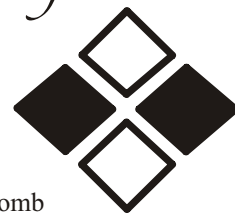
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# 8x8 Game Design Competition.

## Initial Feedback

by Kerry Handscomb



There were 56 entries to the 8x8 game design competition, a response that far exceeded expectations. In addition, the standard of the games was generally very high, so judging the competition proved to be challenging. Fortunately, the voting system allowed the judges to nominate ten games each rather than a single game, which made the selection process much easier.

As of writing, individual judges are finishing submission of their preferred games, and the votes have yet to be tallied. Rather than wait for the next issue, I decided to include in this issue three of the games that I found particularly interesting. It should be borne in mind that these are not necessarily the winning games. Two games are included below; the third game, Chivalry, was inspired by Jetan and is included alongside the Jetan article on page 9.

Certainly the 8x8 board has the potential for games of great depth. Chess alone, for example, would provide material for lifetimes of study. Nevertheless, 64 squares may prove to be limiting for certain types of games, and I believe there are few games played on less than 64 spaces that are strategically interesting -- unless a mechanism is used to increase the efficiency of space utilization. One way of doing this is simply to pile pieces up on the squares to create a kind of pseudo-three-dimensionality. Successful implementations of this approach include Lasca, Bashne, Focus, and Plateau. The latter game, reviewed in *AG3*, is played on a board with as few as 16 spaces! Tumbling Down also uses the column principle. I found it to be particularly engaging because of the tactics resulting from its application of a Chess-like objective to a column game.

The first game presented below, Cross, allows play on the intersections where four squares meet as well as on the squares themselves, thereby increasing the playing area to 113 spaces from 64. I do not know of any other games in which this is the case. It produces a bizarre but likeable game, although I have no idea what constitutes good play.

### Cross

Cross, invented by Justin Love, is a game for two players that allows play on the points where four squares meet, known as "corners," as well as on the squares themselves. For this reason the pieces should be somewhat smaller in proportion to the size of the squares than are regular checkers.

The two players, known as Black and White, have sixteen pieces each, which are initially arranged as shown in Figure 1. Black moves first, and thereafter the players move alternately. Each turn a player moves one of his pieces and then removes any captured pieces from the board. The term "capture" may be a misnomer, as captured pieces may consist of some, or even a majority, of the player's own pieces. A piece on a corner is said to "guard" the four squares meeting at that corner.

*A piece starting the player's turn on a square may move in one of the following ways:*

*(continued overleaf)*

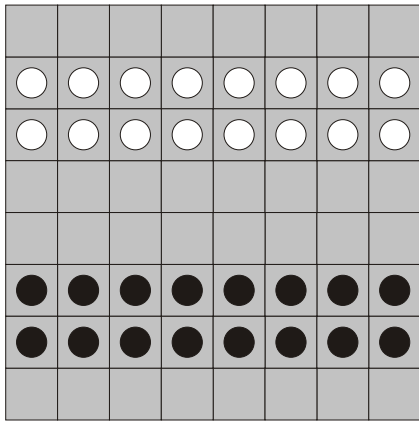


Figure 1 -- Cross opening position

- Move one square orthogonally to an empty square.
- Move in a straight line in an orthogonal direction, passing over any number of the player's own pieces or empty squares guarded by the player's own pieces. The piece must stop in the first empty square the player does not have guarded, and may not pass over any opponent's pieces. The piece does not have to move the maximum number of squares possible and may stop in any empty square that it would be eligible to pass over. In the top diagram of Figure 2 the black piece on the far right may move seven spaces to the left, resulting in the position in the bottom diagram. The black piece may halt at any of the other four empty squares on the way.

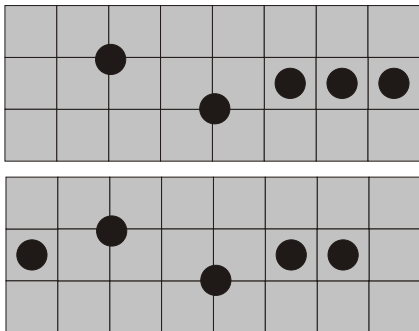


Figure 2 -- Example of Cross movement

- Move to an unoccupied corner of the square it starts on. However, a piece may not move to a corner if it would cause opposing players' guarded squares to overlap. Note also that eligible corners consist of points where *four* squares meet, disqualifying corners at the edge of the board.

*A piece starting the player's turn on a corner may move in one of the following ways:*

- Move to one of its empty guarded squares.
- "Divide," in which case each of the empty squares the piece is guarding is filled with a friendly piece that was previously removed from the board. A player must fill as many of the guarded spaces as he can, but if he has insufficient pieces off the board for all the vacant guarded squares, he may choose which of these guarded squares to fill. Once the guarded squares have been filled, the dividing piece is removed from the board.

*Whenever the following configurations of pieces are formed, all pieces involved are captured and removed from play:*

- A piece is on a square that has at least two of its corners occupied by enemy pieces.
- A piece is on a corner that has at least two of its guarded squares

occupied by enemy pieces.

- A cross is formed with a piece on a square having all four of its orthogonally adjacent squares occupied. It does not matter who controls the pieces involved. This is called a "cross capture" and always involves five pieces. (A cross capture cannot happen with the central piece on the edge.)

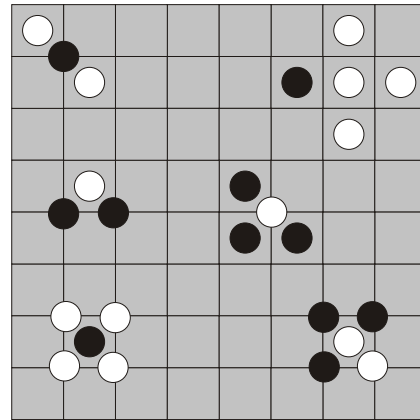


Figure 3 -- Examples of Cross capture.

In Figure 3 all pieces would be removed except for the white piece in the example in the bottom right. Although this piece is on a corner, is it not part of the capturing formation involving a white piece on a square and enemy black pieces on the corners. It may sometimes happen that a single move creates more than one capturing formation simultaneously, most commonly two overlapping crosses. In such cases the player moving decides on the order of the captures -- this may make a difference if capturing one formation breaks up another. Note that a move that would result in one's guarded squares overlapping the opponent's guarded squares is still disallowed even if it would result in pieces being captured that would remove the overlap.

A player wins when one of his pieces enters a square on the furthest row (the one nearest to his opponent) and is not captured as a result. It is possible that experienced players may encounter repeating or deadlocked positions. Rules have yet to be formulated to cover these eventualities, so players should use their best judgment for resolving such situations.

### Tumbling Down

Tumbling Down, created by Michael Shuck, is another two-player game. The two players, Black and White, each have 29 pieces arranged initially as shown in Figure 4. Black moves first and thereafter the players take turns to move either one of their own pieces or a whole column headed by one of their pieces.

A single piece in a square or a piece uncovered on top of a column of pieces may be moved one square in any direction, orthogonally or diagonally. If the destination square is occupied, the moving piece becomes the new top piece of the column in that square.

The second type of movement is called "tumbling." Instead of moving a single piece, a player may choose to tumble a column of pieces provided it has one of his own pieces on top. Start by moving the whole column one square in any direction, orthogonally or diagonally. Leave the bottom piece of the column in this square, on top of any piece or column of pieces that may already be there, and continue by moving the column another square in the same direction. Leave the bottom piece of the remainder of the column in this second square as before, and continue by moving the column to a third square in the same direction. This process continues until

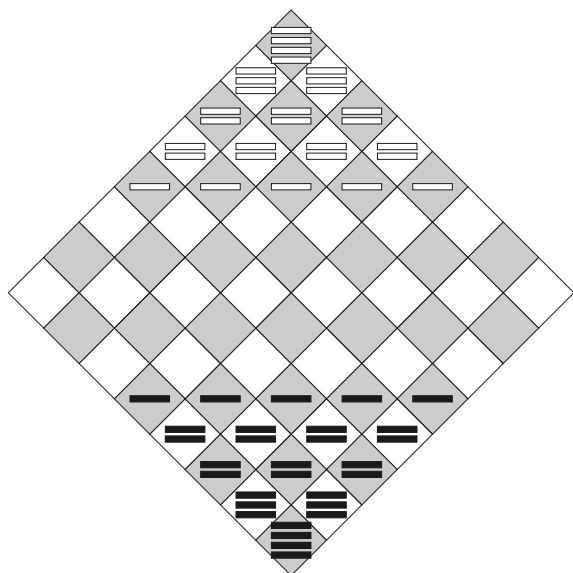


Figure 4 -- Tumbling Down opening position

finally the last (formerly top) piece of a column is deposited in a square or until the column cannot move any further because it has reached the edge of the board. In either case, the tumble is complete. One can imagine a tumble to be like pushing over the stack of pieces so that the top pieces land furthest from the starting square. Note that a tumbling column of pieces cannot change directions in mid-tumble.

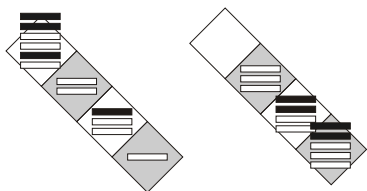


Figure 5 -- Example of Tumbling

Figure 5 shows an example of tumbling. The six-piece black column on the left can tumble to the South East to the edge of the board, resulting in the position to the right.

The tallest column a player has that consists entirely of his own pieces is called a "king." A player may have several kings of equal height. A column that has pieces of both colors cannot be a king. The objective of the game is to "capture" an opposing king. This is accomplished by making a move that deposits a friendly piece on top of an enemy king.

As with Chess, a player threatening to capture an opposing king should warn his opponent by declaring, "Check!" An imminent victory may be announced with "Checkmate!" ■

✕

#### Solution to Onyx puzzle

The battle comes down to the lower left corner of the board. Black must connect the black piece at A6 to the South side either through the black piece at A3 or through the clump of five black pieces centered around D4. The only move that will accomplish this is C5.

Here are eight winning continuations for Black:

1.c5 2.b6 3.a5 4.a1 5.bc12 6.c2 7.b2 8.b4 9.b3 10.a4 11.b5; 1.c5 2.c2 3.a2 4.a5 5.c6 6.b3 7.b4\* 8.a1 9.b2 10.b1 11.c1\*; 1.c5 2.b4 3.b3 4.b6 5.a5 6.a4 7.b5 8.a1 9.bc12; 1.c5 2.a1 3.bc12 4.b6 5.a5 6.c2 7.b2 8.b3 9.b4\* 10.b3 11.a2; 1.c5 2.a1 3.bc12 4.b6 5.a5 6.c2 7.b2 8.a4 9.b3 10.b5 11.b4\*; 1.c5 2.a1 3.bc12 4.c2 5.b2 6.b3 7.b4\* 8.b3 9.a2 10.b5 11.c6 12.c4\* 13.a5 14.a4 15.b4\*; 1.c5 2.a1 3.bc12 4.c2 5.b2 6.b3 7.b4\* 8.b3 9.a2 10.c4\* 11.c6 12.a5 13.b5 14.b4 15.a4\*; 1.c5 2.a1 3.bc12 4.c2 5.b2 6.b3 7.b4\* 8.b3 9.a2 10.c4\* 11.c6 12.ab45 13.b4 14.b5 15.c3\*

Here are six losing continuations for Black:

1.b5 2.b4 3.c5 4.a1 5.bc12 6.c2 7.b2 8.b3 9.a2 10.a4; 1.a5 2.a1 3.bc12 4.a4 5.c5 6.c2 7.b2 8.b3 9.b4\* 10.b3 11.a2 12.c4\* 13.b4 14.b5\* 15.b4 16.a5 17.c3\* 18.b6 19.c6 20.b7; 1.a4 2.a5 3.bc56 4.b6 5.c6 6.b7; 1.b6 2.c5 3.ab45 4.b4 5.a4 6.a1 7.bc12 8.b3 9.b2 10.a2\*; 1.b2 2.a5 3.bc56 4.b6 5.c6 6.b7; 1.c6 2.c5 3.ab45 4.a5 5.b5 6.b6\*

## I was a Shogi widow

by Connie Handscomb

Or so it seemed whenever he became involved in the game -- or any game, for that matter. It still happens. I see his mortal mind temporarily vacate this dimension every now and again. The lapses are characterized predominantly by a prevailing display of vagueness to his surroundings and inattention to things at hand. He doesn't actually levitate, but you know he's not with you any more. He becomes oblivious to life around him as he traverses other planes not of this realm. I see it when it happens. I see him sit next to a telephone and not hear its persistent ringing. I see him face a candle straight on to light it, so I don't understand how the *back* of the new robe gets burned. (Actually, I don't understand how it flamed in the first place!) I know he remembered to keep his doctor's appointment, but I also know that once there he cannot recall the reason for it. And I do know that most people close the lid during a wash cycle. This is a complex mystery to me. I am a different personality, and my mind, albeit simpler, does absorb these details. We are merely unique individuals that way. During his absences I manage. I do. But whenever he leaves this physical domain and transports his mind to other spheres entirely disconnected from this mundane world, I wonder: Where does he go? Will he be away long? Is he visiting friends of like mind and similar circumstance, communicating, perhaps telepathically, in a mystical, abstract Kingdom of Games? And I will continue to wonder, because none of this is going to go away. ■

#### Index by Issue Number of Games Covered in AG

Anchor 5*	Grand Chess 3*, 4, 5, 6	Pentagonia 2
Bao 4*, 5*	Head Start Hex 5*	Phutball 3*
Bashne 1*, 3	Hex 2*, 3, 4	Plateau 3
Bosworth 2	Hex Kyoto Shogi 5*	Poppy Shogi 4*
Camelot 1	HexGo 6*	Renge Shogi 5*
Cathedral 3	Hijara 5	Renju 5, 6
Chebach 3	Hostage Chess 4*, 5	Ricochet Robot 5
Chivalry 6*	Jetan 6*	Square Anchor 6*
Chu Shogi 4, 6	Kimbo 5, 6	Square Hex 5*
Colors 3*	Kyoto Shogi 1*, 2, 3, 4	Strat 4*
Congklak 2*	Lightning 5*	Tamsk 4
Cross 6*	LOA 1*, 2, 3, 5, 6	Trax 1
Dao 6	Mem 2*	Tumbling Down 6*
Deflection 6	Mentalis 1*	Twixt 2*, 4
Eight Sided Hex 5*	Nana Shogi 5*	Zèrtz 4, 6*
Epaminondas 3*	Octi 2	
Gipf 1	Onyx 4*, 6	
Gonnect 6*	Patricia 5*	

\* = complete rules

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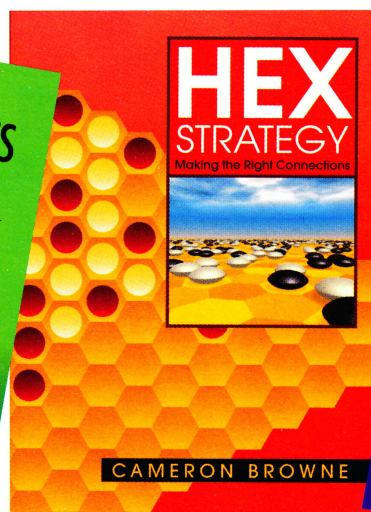
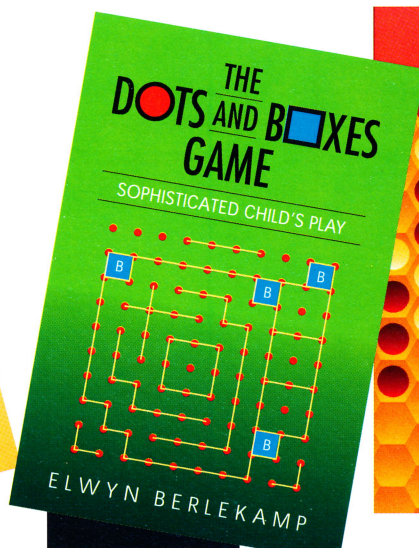
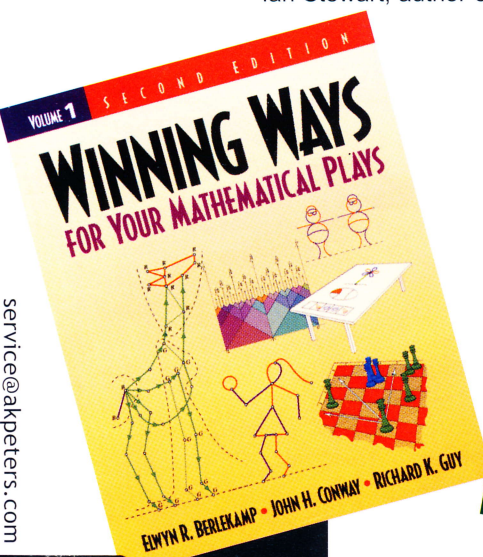
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