Issue 9 Spring 2002
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Abstract Games

... for the competitive thinker

~ Croda:
Checkers variant
with fewest draws

~ Miller's Thumb:
Baroque rules and
evocative terminology

~ Forgotten classics:
Take the Brain
Realm
Chase

Front Cover

The front cover shows a Halma board set up for play by four players. Most readers will be familiar with Halma, so it is not necessary to go into detail concerning the method of play. Suffice it to say that the objective is to move your pieces across the 16x16 board into the spaces initially occupied by the opposing player in the corner opposite. On a turn a single piece can be moved, either one square in any direction or by a series of jumps, as in Checkers, but over both friendly and enemy pieces and without capturing. With the four-player version, each player has 13 pieces. The game can also be played by two, in which case they have 19 pieces each and start off in opposite corners.

Halma was invented in England in 1883 by surgeon George Howard Monks. The name "halma" is Greek for "jump." Apart from the jumping mechanism, which was probably copied from Checkers, I believe the game was original, without predecessors.

A great many new games were introduced during the late Victorian period. Almost all have disappeared and are now known only to historians and game enthusiasts. Halma and Reversi are the only two to have passed into the popular consciousness as enduring classics, although the latter is better known as Othello.

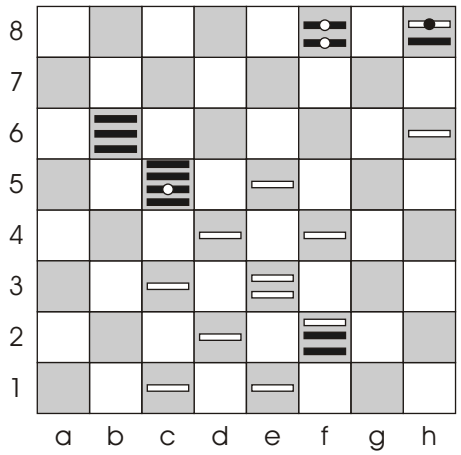
The Halma family of games is very small. The most popular is Chinese Checkers, which is simply Halma played on a star-shaped board with a hexagonal tessellation of spaces, allowing the game to be played by two, three, four or six players. Chinese Checkers was originally known as Stern-Halma (i.e., *Star*-Halma) and was published by the German company Ravensburger in 1892. It acquired the name Chinese Checkers only as late as 1928, when it was released by the Pressman company in the USA. These historical facts tend to belie the suggestion that Chinese Checkers, after all, really does have an Oriental origin.

Salta may be regarded as another development of Halma. The objective is still to occupy the initial starting position of the opponent's pieces. However, the requirement that particular pieces must go to particular spaces, together with the compulsory forward, single jumps over enemy pieces, makes it a much more sophisticated game strategically. – KH

BASHNE PROBLEM

by Anatholy Zbarj

White is to play and win by blocking the black pieces. The solution is on page 29.



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

Editorial

The *8x8 Game Design Competition* comes to a close this issue with Royal Carpet. It is the last of these games we will be describing for the time being. In total, we covered 11 of the more than 50 competition entries. There are still some interesting competition games that we have not written about yet, and maybe we will be able to return to these at a later date. The wealth of original ideas was astounding. In retrospect, my personal favorites are Three Crowns, Freeze, Cross, and Mozaic.

It turned out that limiting the games to an 8x8 board was very restrictive—a number of competition entries, I think, may have been better if the inventors had been free to select a different board size. In a few cases, I know, a game that originally had been designed for a different board size was squeezed into the 8x8 format.

As of writing, entries are still coming in steadily for the *Unequal Forces Game Design Competition*. The restriction in this case is to a particular type of game, those with some kind of built-in imbalance. This possibility has been given scant consideration by game inventors in the past, so it is going to be fascinating to review the entries. Although it is not a competition entry, Miller's Thumb, described in this issue, is technically a game of this type.

Of the many new abstract games that are published many very good games, sadly, disappear quite quickly from the market. We have given coverage to some of these "forgotten classics" in the past, notably Mentalis and Epaminondas, and this issue describes three more, Take the Brain, Realm, and Chase. Take the Brain was given a little attention when it first came out, with articles by Leonard Barden in *Games & Puzzles,* numbers 3, 4 and 5. The piece in this issue was written before I had access to these older articles, so there is little overlap.

The article on Othello marks the third in the "A Beautiful Move..." series. It seems to be a good idea to continue this train of thought through some other games, but I am uncertain which direction to take now. Perhaps Pente would be the right choice. We are open to suggestions!

This issue contains an article on Croda by Christian Freeling, and we have decided to run a tournament as a small way of encouraging this game. R. Wayne Schmittberger's Chu Shogi column should be back with the next issue. Also, this issue is a little light on reviews—we'll catch up next time.

Aside from the reviews, most of the games we describe were either never commercially available or were once but are now out of print. I think it is good, however, to give some in-depth coverage now and then to games that our readers can still go out and actually buy. Zèrtz has filled this role for the last several issues, but Trax will be moving into the limelight in the next issue. We have a series of articles planned on Trax.

Now and then readers comment that all of our game reviews and book reviews are very positive. That is true. Of course more games and books come our way than are actually reviewed—we select the best ones to write about. Early on in this venture I decided not to write bad reviews: I far prefer to project a positive, upbeat, excited message about new games.

Turning to the letters page, readers may notice that for several issues most of the letters have come from readers in the USA. Of course, a significant proportion of our readership is American. But this is truly an international magazine, and we have readers from many other countries. I heartily encourage our readers everywhere to contribute! Write to tell us what you like or (maybe even more importantly) what you don't like about the magazine. Tell us about your favorite games and what you think we should be covering.

Kerry

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 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 Shogi.

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.*

Enclosed is a check for a one-year renewal of my subscription to *Abstract Games*. I have learned that I can't live without it.

Just one note: I am a games collector and amateur historian, and I have acquired a copy of the original American version of Salta. At first the use of sticks to move the pieces seemed superfluous to me. Now I wonder if they might not be employed to emphasize the two-dimensionality of the game, perhaps in order to distinguish it from those games in which "jumping" requires the removal of pieces.

Wayne Saunders, USA

"Unequal forces" is a great choice for the next game design competition. It is perhaps not usually realized that the well-known and enduring example—Fox and Geese, classified as a "Hunt Game" by Murray—refers in fact to MOBBING, the counter-offensive of prey, usually against a nocturnal predator caught sight of by day.

In reality, when geese mob a fox, the fox will not try to catch one of his tormentors: "With ears laid back and a disgusted expression on his face, he glances back over his shoulder at the trumpeting flock and trots slowly—so as not to lose face—away from them" (Lorenz: *On Aggression*, Ch. III).

The scenario in the game differs significantly: on the one hand the fox can kill the geese; on the other hand the geese—in nearly all variants of the game—are clearly able, with correct play, to hem in the fox, thus winning the game.

The sympathy of players would presumably have been for the geese, and this may even explain, in part, the endurance of Fox and Geese as a folk game. Rustic players would perhaps have preferred a "tilted" game, even if the search for a balanced variation had succeeded.

European "hunt games" have accrued a variety of themes—even hunting!—and often these reflect an imbalance. Thus the idea that these games are bound to be unbalanced has persisted. This may be a wrong assumption.

Right at this moment, when a lot of cultural baggage previously used in the classification of games is being thrown aside, there may well be greater opportunities to discover the rich potential of games of "unequal forces" and, as you imply, this may go beyond traditional chase games and be applied to other kinds of games also.

Andrew B. Perkis, England

Yes, you discovered the second layer to Mozaic—it's all in the percentages. As there are less blue and yellow toward the end of the game, the red, green and white stones may be drawn more often. I prefer the 8x8 board as it lulls players into a certain type of strategic thinking—until they realize they're running out of stones and have to switch tactics, looking for different openings.

I am considering adding a fourth, black "onyx" exception to Mozaic, which allows a player to draw two more stones, one at a time, and play them in the order drawn, before the onyx is returned to the bag.

Here are a few Mozaic tips: start in the middle of the board, place opponent's stones on the edges of the board; if you draw the diamond, it is all right to remove an opponent's stone in the first half of the game, but not too smart in the latter half; line up three stones in a row, then place your fourth on either side adjacent to the middle one—if one possible square becomes blocked, you still have another.

Martin Samuel, USA

Others wrote to indicate that Mozaic on the original 8x8 board is better than the 6x6 board I suggested in the AG8 *article. A fourth exception would definitely increase the excitement early in the game. – Ed.*

We had a Breakthrough tournament. The opening is too long and too inconsequential. There are many sequences of moves any one of which could produce the same configuration prior to actual contact with opposing forces. I found that a little dull.

Magneton I found frustrating. It seemed quite easy for a player to form winning configurations for the opponent, but difficult to do so for oneself. The rules are vague. Where it says a line of four formed by moving or dropping a piece is "not valid," does that mean that the move cannot be made or that it can be made but does not win?

I only observed Freeze being played, but saw a circumstance which was not clear from the rules: the rules, as written, demand adjacency after a capture, but not before—that should be stipulated.

Paul Yearout, USA

And I thought I was getting good at writing game rules! Magneton – It is allowed to form a line of four pieces without using the magnetic effect, but a winning line must *use the magnetic effect. Freeze – A piece needs to be adjacent to the enemy piece before* and *after capture. – Ed.*

The *AG7* article on Chu was a breakthrough for me. I never really thought much about step movers and how they could be put to better use. Believe it or not, the idea that capturing a far-advanced step mover with a lesser-advanced step mover gains tempo was new to me. But now that I read the principle, it's like a bell ringing in my head. Great stuff! This principle can probably be applied to many other goal/advancement games.

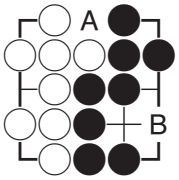
Clark D. Rodeffer, USA

In *AG6* Colin Adams states that Go, Chess and Hex can be considered as games in which the object is to make the last move. Unfortunately, the rules he gives for Go are incorrect, in two ways.

In the first place, the game that he is trying to define is NOT Go by Chinese rules (i.e., stones on the board and surrounded territory are points), which are hardly different from Japanese rules (i.e., surrounded empty territory and captured stones are points). In fact, except for some *seki* positions, the result will either be the same or one point different, depending on who made the last move, provided there is no handicap and no player played a move after his opponent passed. What Colin is trying to define are the so-called 'old Chinese rules,' in which there is a 'group tax' of two points for each group, which is equivalent to counting only the stones on the board.

But this is also not what his rules give. His rules, known as no-pass Go among Go rules fanatics, are quite different from normal Go. See for example the position in this diagram. In Japanese rules Black either passes or plays at 'A,' winning by 2 points. In Chinese rules Black plays at 'A' and wins by 3 points. In no-pass rules, however, if Black plays at 'A,' White answers at 'B,' and White wins by one move. Black 'B,' which costs points under the other rules, is the winning move in no-pass Go—Black wins by one move.

Andre Engels, Netherlands



Game Review

Proteus

Designed by Francis K. Lalumière

Proteus was the Roman sea god able to assume different shapes. It is also the name of this Chess-like game played with dice. The battlefield is the standard 8x8 checkered board. Each player has eight dice, each of which has a pawn, bishop, knight, rook and queen on its faces. The sixth face is a pyramid.

A player sets up his pieces on the eight dark squares on the first two ranks. Each piece starts as a pawn. On a turn, a player moves one of his pieces, according to the standard Chess movement rules, and then rotates another of his dice, either up or down. The order of rotation is pyramid-pawn-bishop-knight-rook-queen. Queens may not rotate up, and neither may pyramids rotate down. The pyramid may neither move nor be captured—it is essentially a defensive, blocking piece.

There is no single royal piece whose capture ends the game, as in Chess. Instead, the game ends either when one player cannot move on his turn or when one player is reduced by capture to only one piece. At this point the players total the values of the pieces they have captured—a pawn is worth 2 points, bishop 3 points, knight 4 points, rook 5 points, and queen 6 points. The player with the higher score wins.

One may imagine that it is best to rotate one's pieces to achieve queens as quickly as possible. Certainly the queen is powerful, but queens have an extra weakness in Proteus: a queen may also be captured by *backstabbing*—in other words, by moving a piece to a position directly behind the enemy queen. Because of this weakness, players need to think twice before creating queens, especially since a player with a queen is likely to lose points on an exchange. Since pieces mutate, forks are easier to obtain than in Chess, and it would probably be particularly unwise therefore to have two or more queens on the board at the same time. Nevertheless, a piece may always be rotated down to a lower value. If two queens were attacked simultaneously, for example, a player could move one out of danger and rotate the other down to a rook for a loss of only 5 points.

Although this is the basic game, the rules come with many suggested variants. Players may even like to design their own variants. In fact, one of the additional benefits of having a set of pieces like those of Proteus is that they may be used in the design of completely different games.

Proteus is an appealing tactical game—it is certainly recommended. The pieces are packaged with the rules in a very compact plastic case, making it easily transportable. One minor complaint I have is that no board is supplied. Surely it would have been possible to copy the practice with Chinese Chess sets and include a folded paper board. Almost everyone, of course, has a Chess board, but few people have boards which are as compact and easily portable as the Proteus set. Nevertheless, it would be quite easy for players to draw their own board on a piece of paper or card for inclusion along with the set. – KH

Steve Jackson Games, PO Box 18957, Austin, TX 78760, USA
Website: http://www.sjgames.com/; Rec. retail price: US$9.95

Book Reviews

Jeux de pions pour aujourd'hui

Michel Boutin (Ceméa, Paris, 2001)

Every now and then something new comes along that demands inclusion in every gamer's collection. This is one of those items. I am cheating slightly by including it under "Book Reviews," because it consists of a 42-page rule book, together with 12 game boards and some sheets of stickers with which playing pieces can be made (out of checkers or poker chips, for example).

The 12 games represented are mostly from around the end of the nineteenth century—*la Belle Époque*, as the period is known in French. They are Agon, *Le canard marseillais* [The Duck from Marseille], *Jeu de la chasse au loup* [Wolf Hunt, i.e., Fox and Geese], *Jeu des chasseurs* [The Hunters], *Jeu du cirque* [The Circus Game], *Jeu du Congo* [Congo—see *AG8*], *Foot-ball lil-i-put* [Lilliput Football], *Jeu des grenouilles* [Frogs], *Jeu des quatrarmes* [Quatrarmes], Salta [see *AG8*], *Le tacticien* [The Tactician], and *Voyage à Pékin* [Trip to Peking]. A few of these games are simple, dice-based race games, but the majority are interesting and challenging abstract strategy games. Some of these will already be familiar to players, either from these pages or elsewhere, but a number will probably be completely new.

The game boards are beautiful, glossy, card reproductions of the original game boards. The boards are quite large, and are folded in half to fit inside the clear plastic packaging along with the magazine-sized rule book. The print quality of the game boards is very high, and the rule book, too, is beautifully printed and organized. In addition to the rules themselves, the rule book contains suggestions on how to use the games in various settings, such as the classroom, and a discussion of the history and classification of the games. The language throughout is French, but the actual rules for the games are also given in English.

As for the individual games, at last I have boards to play Agon and Congo, and an easy way to make some nice Salta pieces! However, *Foot-ball lil-i-put*, *Jeu des quatrarmes*, and *Le tacticien* are three abstract games that I have never seen before and which seem to me to be worthy of a close investigation. *Le tacticien* belongs to that small class of games, along with Halma and Salta, in which the objective is to move across the board to occupy the opponent's position. It is played with cards (made from stickers included in the package)—the colors on the cards drawn by the players determine the colors to which their pieces may move on the board. It is an interesting idea, although I think the mix of cards does not quite restrict choices sufficiently. Players may enjoy tinkering with the rules to make a more challenging version. *Foot-ball lil-i-put*, of course, is a football simulation, but a good one, it seems. *Jeu des quatrarmes* is a kind of checkers variant with pieces of varying power.

All in all, this is a lovely package. There is a good selection of games, and the presentation is superb. Let us hope that Michel Boutin and Ceméa decide to produce a second volume! – KH.

Ceméa Publications, 24 rue Marc Seguin - 75018 Paris, France. Website: http://www.cemea.asso.fr; FF125

Teach Yourself Mahjong

David Pritchard (Hodder & Stoughton, 2001)

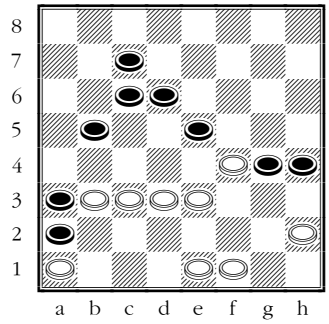
David Pritchard will be well known to readers of this magazine as the writer and editor of numerous books on games. With this latest offering he turns his eagle gaze to the subject of Mahjong.

Mahjong is not really my preferred type of game, but what I do like about Mahjong are the beautiful tiles and the busy mechanisms of play that offer such great tactile and visual pleasure. It is also interesting to read about the history of the game. I was surprised to find, for example, that Mahjong only dates back to early years of the twentieth century. The game quickly transferred to Japan, Britain and the USA from its homeland of China, and rapidly acquired immense popularity for a time. The advent of Contract Bridge and the confusing proliferation of variants brought about the decline of Mahjong in the West. Nevertheless, the game continued to develop unabated in Japan—arguably the Japanese have developed Mahjong to its highest level, as they did before with another Chinese game, Go.

The version of the game to which David gives most space is the original Chinese game, rather than its descendants in the USA, Britain and Japan. Despite what David refers to as the "inner harmony of the Chinese game" the Japanese version seems to me to be the most skillful and logically conceived variant.

All major variants are thoroughly described and put into historical context. In addition, David has chapters on elementary strategy and advanced strategy, both of which make for very interesting reading. This book fills a much needed gap in the Mahjong literature. It is an essential book for anyone interested in Mahjong and the history and diffusion of games generally. – KH

"Modern Alice and Red Queen" by Daniel Bauer



International Checkers Versus Croda

Croda Problem
White to play and win.

by Christian Freeling

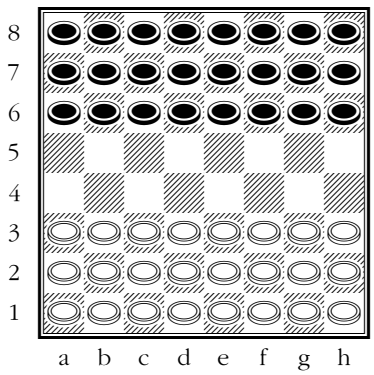
At the age of six I had mastered Fox and Geese. My geese were invincible, and I was far from reluctant to prove it. In sheer desperation my father taught me to play Draughts. (In Holland, and throughout this article, "Draughts" means 10x10 International Checkers.) It was my entrance to the world of abstract games. Now I must betray Draughts and explain *why a good game has become a bad sport.*

This is not, as some would have it, a matter of opinion. I do nevertheless have an opinion for those Draughts players who would like to dismiss these findings as irrelevant. If by some twist of fate Croda had been the dominant checkers form for the last century, you would have naturally accepted that game when you were a child. You might even have become a professional player. If someone had come up with Draughts as it is played now, you might well have dismissed the very game you are defending now, as being irrelevant. You might even have been right.

So do not kid yourself. Draughts players may shut their eyes to it, but Draughts may well vanish—not so much as an educational game but as an international sport—within one or two decades. A grandmaster nowadays stands a good chance of outliving his game. The program Buddy will become invincible and thus have the honor of putting out the lights and closing the door for good, much the same as Chinook did for Anglo-American Checkers. I fear nothing will replace it either, despite the fact that there are far better games now, including Croda.

The idea of checkers is so globally recognized that there is hardly any culture that has not accommodated it in one form or another. It is all about a simple two-men-and-three-squares scenario—you put a white man on the first square, a black man on the second square; you leap with the white man to the third square, and remove the black man. That is the bare essence.

All cultures implement the idea by putting two opposing armies on a square board. There are literally dozens of variants. The rules of the international game can be found in Fred Kok's article "A Beautiful Move in International Checkers" in *AG7*. The capturing conventions in Croda are in part the same, so I will cite Fred on occasion.



Croda opening position

Croda is played on the 64 squares of a regular chess board. Each side initially has 24 men, occupying the bottom three rows. White moves first. The object, as in Draughts, is to leave your opponent without a valid move, either by capturing all his pieces, or by blocking them completely. A draw may occur by mutual impotence or three-fold repetition.

Movement

A man moves one square forward, either orthogonally or diagonally. A man ending its move on the opponent's back rank is promoted to a king. Kings move like Chess rooks, any number of unobstructed squares horizontally or vertically. Since a man is only crowned upon *completing* its turn on the last rank, and since multiple captures must be completed, it may have to jump on and off the last rank without promoting, in order to continue capturing.

Capture

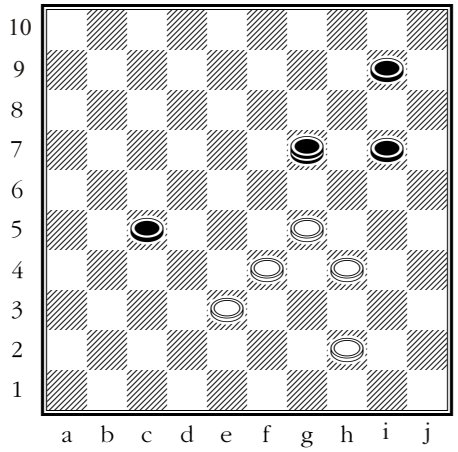
In Draughts all moves follow diagonal lines. In Croda, with the exception of a man's option to move diagonally forwards, all moves follow horizontal and vertical (i.e., orthogonal) lines only. Men may capture forwards, backwards and sideways by the short leap; kings capture by the long leap. (Men may not *capture* diagonally, despite being allowed to *move* diagonally forwards.) There is no fundamental difference in the nature of capture whether play takes place along orthogonal lines or along diagonal lines. The diagonal plane is just like riding a bicycle on a football field and being forced to steer at oblique angles.

The following is taken fairly literally from Fred Kok's article on Draughts, and it holds for Croda: Capturing, whether by men or kings, is compulsory. If a piece makes a capture and is now in a position to effect another one, it must do so. Thus multiple captures may be made in the same turn. When a multiple capture is being made, the captured pieces are only removed at the end of the turn, and it is not permitted to jump over the same piece twice in that turn, although empty squares may be passed over more than once.

Majority capture takes precedence: If a player has a choice of capturing options, he must choose the option that results in the greatest number of pieces being captured (kings and unpromoted men counting equally). When a capturing king has an option of destination squares, it must choose its route so that it maximizes the capturing sequence. If there is more than one way to capture the maximum number of pieces, the player is free to choose.

Croda may be regarded as a smart, modern form of traditional Turkish Checkers. Ljuban, the Croatian inventor of Croda, *replaced* the sideways move of a man in the latter game, by a diagonal forwards move, honoring the game's spirit by making progress forced rather than optional. He also filled the back rank. This is vacant in Turkish Checkers, presumably to prevent defenders from patrolling it indefinitely. In Croda forced progress makes this impossible. Finally, he adopted the conventions of the

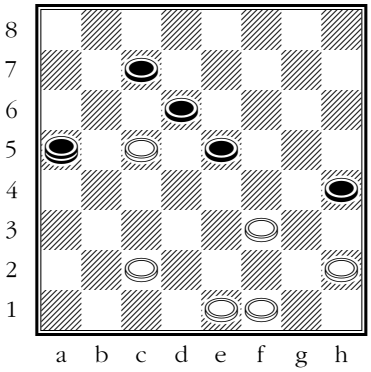
international game regarding capture. In Turkish Checkers multiple capture follows the spirit of a vacuum cleaner, in that every piece is removed immediately after being leapt over. In Croda and Draughts the capturing sequence must be completed before the pieces are taken of the board. This rule, in combination with the rule that no piece may be jumped twice, allows for a unique and bedazzling type of combination in these games, called "Coup Turc" or "Turkish Capture," which is, ironically, a combination that is not possible in Turkish Checkers. I will give a bare bones example in both games to illustrate these important rules. First Draughts—White to play and win.



The "Coup Turc" in Draughts (International Checkers)

White moves 1.g5f6. Note that there is now only one way to capture four men, and since majority capture takes precedence, Black is obliged to capture these four. The king moves 1....g7:d4:g1:i3:g5. There it stops—the man on f6 has already been captured and may not be leaped over twice, while the man on f4 is still covered by the already-captured man on e3. After the captured men are removed, White captures 2.f4:h6:j8:h10+.

Now Croda—White to play and win.



The "Coup Turc" in Croda

White moves 1.f1e2, and Black must capture 1....a5:d5. Now White moves 2.c2d3, and the same pattern emerges, only now in the 'orthogonal plane' instead of the 'diagonal plane.' Black must capture 2....d5:d1:h1:h3:e3 and stop. Now White jumps 3.e2:e4:e6:c6:c8+.

Why Croda is the better game

Traditional Turkish Checkers and Draughts take different starting points—Turkish Checkers is played in the 'orthogonal plane' (Figure 1), while Draughts is played in the 'diagonal plane' (Figure 2).

Figure 1

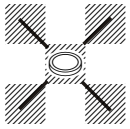


Figure 2

The latter would appear to be more in the game's spirit—progress being forced rather than optional—and most variants indeed use only the light or the dark squares. Yet that choice sacrifices three distinct advantages of the orthogonal plane:

1. The board aligns with the direction of capture, giving combinations more scope.

2. Only two instead of four long-range kings are needed to trap a lone king.

3. On a checkered board with orthogonal capture, a man's capturing move remains 'on color,' making the men that may be drawn into a combination instantly identifiable.

The Turks do not care about the last point—they play on an uncheckered board. But the first two points are so basic that it is hard to imagine any serious player could ignore them. The endgame with multiple kings against a lone king is directly related to the game's margin of draws.

For the sake of argument let us use an unusual but average board size, 9x9, and let capture be in four directions.

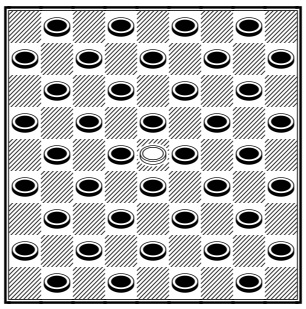


Figure 3

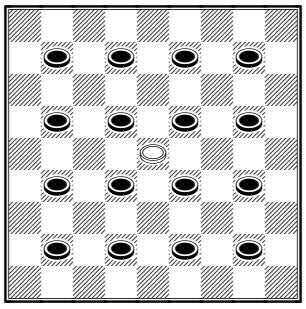


Figure 4

Figure 3 shows a playing area of 81 squares, 40 of which allow a capture by the white man. Figure 4 shows a playing area of 41 squares, 16 of which allow a capture by the white man.

● *Here is the first ratio difference: orthogonal scores 50%, diagonal 40%.*

During a multiple capture in Checkers, a man may visit a square more than once, but may not leap a piece more than once, and the move must be completed before the captured men are taken off the board. Under these conditions Figure 3 allows the capture of 33 of the 40 men, while Figure 4 allows a capture of 10 out of 16.

● *Here is the second ratio difference: orthogonal scores 82%, diagonal 62%.*

The differences are the consequence of alignment—in the orthogonal plane a man can capture along a side and through a corner, in the diagonal plane a man bounces off the side and gets stuck in a corner.

Multiplying each plane's percentages gives an indication of the overall difference in terms of scope for combinations.

● *Orthogonal scores 50x82=4100; diagonal scores 40x62=2480.*

Conclusion

The orthogonal plane provides about 65% more scope for combinations. Since tactics provide the spice and beauty of checkers games, one might reasonably argue that more is better. Of course, alignment is not the only factor, or there would be little

difference between Anglo-American Checkers and Draughts. The tactical scope of the latter is based on backward capture and a long-range king and gives no reason for complaints. Anglo-American Checkers' tactical scope pales in comparison.

However, the consequences of the *combination* of a long-range king and the diagonal plane are very dramatic for the endgame with multiple kings versus a lone king. Draughts needs no less than four kings to trap a lone king and is currently dying from the consequences. Try to trap a lone king with three kings, and die of frustration. In fact, only about 10,000 of some 2,500,000 three-against-one positions are a win, less than half a percent. Of course, the four-against-one endgame looks like overkill and is therefore less than aesthetic.

In contrast, the two-against-one endgame in Turkish Checkers, which happens to be the same as in Croda, is a win, and has been for a thousand years. The method, moreover, is far from trivial, and I was sent spinning into repetition of moves time and again, before finally figuring out how to do it. Of course, seeing that two kings are *precisely enough* to do the job is much more aesthetically rewarding than the awkward situation in Draughts. It makes Turkish Checkers a better game because it is a better *weapon*. In Draughts at its highest level, draws have become the rule, and this can never be the purpose of a sport. (Anglo-American Checkers, ironically, does not suffer the same disadvantage arising from its diagonal orientation because short-range kings are not affected in the same way. This game died of exhaustion, not of an intrinsic flaw.)

Croda offers the best of both worlds. It utilizes the diagonal plane in a minimal way to maximum effect, eliminating the one less-than-confrontational feature of the orthogonal plane—sideways movement. I predict that, due to its larger scope, its tactics will prove even to surpass those of Draughts. Its strategy will prove to be as deep and challenging, but a solid advantage will, for a change, indeed translate into a win, instead of the usual "narrow escape" in Draughts, however thrilling these draws are said to be. Croda is a weapon that, unlike Draughts, will *not* display a crucial bluntness at the precise moment you have mastered it. ■

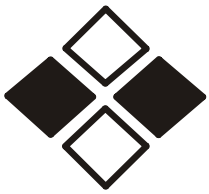
Christian Freeling is a Dutch game inventor whose games include Grand Chess, Havannah, Hexdame and Dameo, among many others. Christian's games often embody a desire to get to the heart of the concepts used in abstract games. This is most clearly displayed by his minimalist chess variant, Chad, and his version of column checkers, Emergo.

This is an excerpt of "Draughts Dissected," a comparitive investigation that will be published at the renovated Mindsports site at http://www.mindsports.net. Christian adapted this article specifically to put the focus on International Checkers versus Croda. Croda was invented by Ljuban Dedic of Croatia, Associate Professor of Mathematics at the University of Split and the 1989 International Checkers champion of the former Yugoslavia. He invented Croda in 1995, searching for the checkers variant with the smallest percentage of draws.

There will be a small prize for a correct solution to the Croda problem given at the top left of page 5. The winner will be selected randomly from among any correct solutions received before the end of February 2002. In addition, we have decided to initiate a Croda tournament. The details are given on page 29.

I have no doubt that humans will always play checkers variants. Nevertheless, Christian may be correct in his negative assessment of the future of Checkers as an international competitive game—unless Croda gets a foothold! – Ed.

8x8 Game Design Competition: One last game

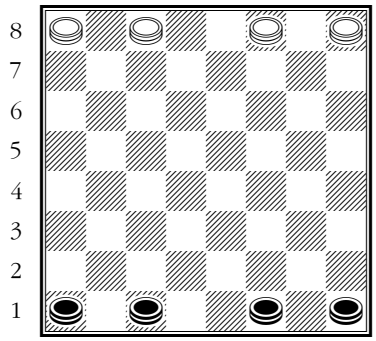


by Kerry Handsomb

The *Unequal Forces Game Design Competition* is well under way. Royal Carpet, devised by Professor John Leslie, inventor of Octi, is the last game we will be describing for the time being from the 8x8 competition. We have given 11 in all since *AG6*, and there are *still* good games we have not had space to cover. Many thanks to all those creative individuals for such a wonderful set of entries!

Royal Carpet is a game for two players, Black and White, played on an 8x8 checkered board. The players have eight pieces each of their own color. Each set of eight pieces consists of four Kings and four Checkers. A regular checker set may be used, with the Kings represented by doubled-up checkers.

The Checkers start the game off the board. The Kings are initially placed on the board as shown in the diagram.



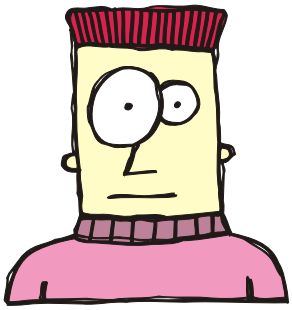
Royal Carpet opening position

The players take turns to move. Players may only move pieces of their own color. Black moves first. Each turn a player may either move a piece already on the board or place a Checker from off the board onto any vacant square.

A Checker on the board may be moved to any adjacent empty square, either orthogonally or diagonally. Alternatively, a player may move one of his Kings by *jumping*. To jump, a King moves over an adjacent friendly Checker or friendly King into an empty square immediately beyond in a straight line. The jumped piece is immediately captured and removed from the board. This is like a jump in Checkers, except that it takes place over friendly pieces and in any direction, orthogonally or diagonally. Jumping is compulsory, and having completed one jump a King must continue with any other jumps if possible, capturing as he goes. (It is not necessary to choose a series of jumps that maximizes the number of captures.) A King may only move by jumping. Captured Checkers may be reintroduced to the board in a subsequent turn, but captured Kings do not return to the game.

Kings may jump off the far edge of the board into the *end-zone*. For example, a white King on c2 may jump over a white Checker on d1, landing in its end-zone. Once in the end-zone Kings take no further part in play. The first person to jump two Kings into the end-zone wins the game.

According to Professor Leslie, *"Royal Carpet is an attempt to create a game of tempo in which friendly pieces have both positive and negative synergies. Crafty players will block jumps and then unblock them later, forcing an enemy King to jump his royal brethren."* ■



Take the Brain

A Silly Game with Serious Strategy

by Kerry Handscomb

Take the Brain, invented by Reuben Klamer, was published in Britain by Parker Brothers in 1970. At the same time it was released in the USA under the name Smess: The Ninny's Chess. Each player controls a ragtag army consisting of Ninnies, Numskulls and the Brain, which are maneuvered around the board according to directional arrows on the squares. The objective is to capture your opponent's Brain. Take the Brain appears to have been designed as a kind of Chess for children since it is not necessary to remember the powers of movement of a number of different pieces—the directions of movement are clearly marked on the board—and the Chess rules of check and checkmate have no equivalents as it is simply necessary to capture the Brain.

The simplified rules and whimsical nomenclature mask the fact that it is a game of significant strategic interest. Somebody in Parker Brothers must have recognized this and decided to retarget the game for the adult market. Consequently, it was repackaged with Knights, Archers and a King and released in 1979 as All the King's Men. The rules are identical. My personal preference is for the earlier, sillier version, as it can provide a light-hearted break from the more serious games while still affording a good contest.

Equipment

The board consists of an array of 7x8 squares. Each square has one or more arrows marked on it, as shown in Diagram 1.

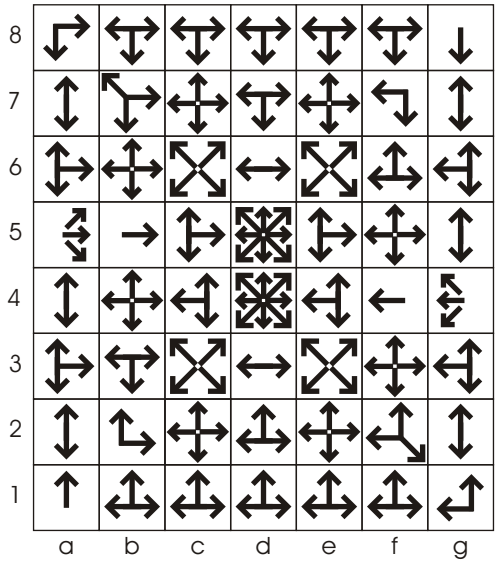


Diagram 1 – Board for Take the Brain

There are two sets of pieces, red and blue, each consisting of seven Ninnies, four Numskulls and one Brain. The manufactured sets had silly-looking plastic figurines for the pieces. Our diagrams will use triangles, squares and stars, respectively.

Rules

Take the Brain is a game for two players. The board is placed between the player with the short sides nearest to them. One player controls the blue pieces; the other player controls the red pieces. Each player arranges his pieces on the two ranks nearest to him as shown in Diagram 2.

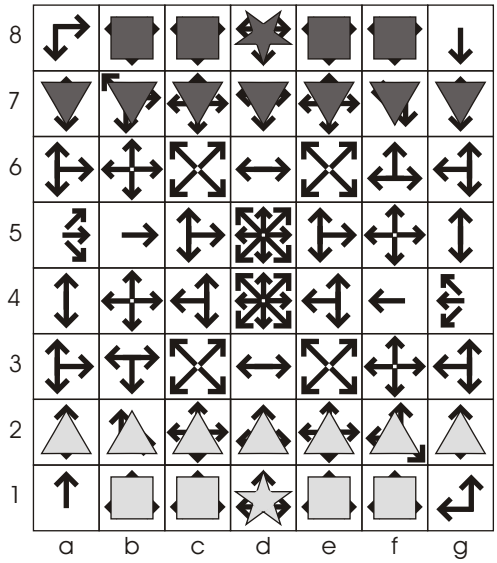


Diagram 2 – Opening position
Ninnies–Triangles, Numskulls–Squares, Brain–Star

One player is chosen to move first. In our diagrams, the first player to move plays up the board. Play alternates between the two players, each moving one piece on his turn. The piece chosen to be moved can only move in the direction of one of the arrows in the square upon which it stands at the beginning of its move.

Ninnies and the Brain may move only one square in the direction of one of the arrows. The Numskulls may move any number of vacant squares in a straight line in the direction of one of the arrows. Numskulls are not permitted to jump over other pieces, friendly or enemy, in the course of their move.

No piece may move off the board or finish its move on a square occupied by a friendly piece. A piece may finish its move on a square occupied by an enemy piece, which is then captured, taking no further part in the game. The objective is simply to capture the opposing Brain.

The published rules say nothing about repeating positions or situations where the players endlessly chase each other around the board with neither able to force a win. In the former case it seems reasonable to adopt the rule that if a player makes a move resulting in the third repetition of a position, then he loses the game. In the latter case we can adopt the Chess rule that if 50 moves go by without a capture, then the game is drawn.

Some Notes on Strategy

The first thing that should be mentioned about Take the Brain strategy is that in the endgame Brain versus Brain plus Ninny, the Brain and Ninny will always defeat the lone Brain (barring trivial positions where the lone Brain can make an immediate capture). Therefore, the Chess strategy of playing for a small material advantage and then exchanging off to a won endgame will work.

An obvious consequence of the board design is that pieces are more powerful on some squares than others, so it makes good sense to place your forces on squares with a lot of arrows and avoid squares with only one or two exits. The squares d4 and d5 are particularly advantageous because of their having eight arrows each and a central location.

The opening seems to revolve around a battle to control d4 and d5 with Ninnies. Once a few Ninnies have been exchanged, and lines have been opened for the Numskulls, the game takes on a different character as it shifts to a free-ranging battle of the Numskulls. The Chess strategy of doubling up rooks on the first two ranks can be used to good effect with the Numskulls. It is well to watch the mobility of your Brain, as a it is all too easy for the Brain to be trapped by a rampaging Numskull.

The question of how many Ninnies is a Numskull worth is difficult to answer. I would guess three. Perhaps an interested reader could help resolve this point by looking at endgames with Brain plus Numskull versus Brain plus any number of Ninnies.

Here is a simple opening trap: 1.g2g3 c7c6, 2.g3f3 e7e6?, 3.f1g1 *(threatening the g7 Ninny)* f8g8 (Diagram 3). The Numskull on g8 will struggle to achieve mobility as there is only one exit arrow on that square, whereas the Numskull on f1 can shift at any time to another square along the first rank.

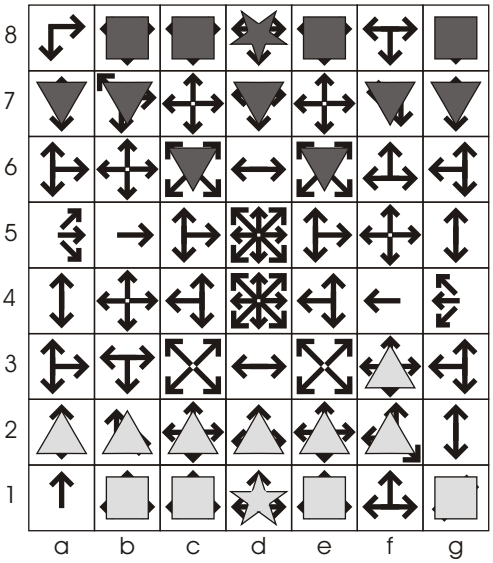


Diagram 3 – Position after 3....f8g8 – an opening trap

Sample Game

The following game should by no means be taken as an example of good play. It does, however, give some idea of the general flow of the game.

Rob Favel vs. Kerry Handscomb: 1.e2e3 a7a6, 2.b2b3 *(avoids the trap mentioned above)* a6b6, 3.c2c3 c7c6, 4.e3d4 e7e6, 5.d2d3 c6d5, 6.d3e3 g7g6, 7.f2f3 g6f6, 8.c1c2 d7c7, 9.e1e2 c7c6 *(both sides have symmetrical positions)* 10.e2d2 e8e7, 11.d4:d5 c6:d5, 12.e3d4 b6c6, 13.d4:d5 e6:d5, 14.c3d4 f6e6, 15.f1e1 c8c7, 16.b1c1 *(the doubled Numskulls)* c7d7, 17.d4:d5 c6:d5 *(lines are opening for the Numskulls)* 18.b3c3 b7c7, 19.f3e3 c7c6, 20.g2g3 f8g8, 21.c3d4 g8:g3, 22.d4:d5 g3g4+, 23.e1e2 e6:d5, 24.e3d4 e7:e2, 25.d2:e2 d5:d4, 26.d1e1 d7d5, 27.c2:c6 b8c8, 28.c6:d5 d4:d5, 29.c1:c8 d8:c8 *(now the dust has cleared, Kerry should win with his Ninny material advantage)* 30.e2e8+ c8c7, 31.a2a3 g4f3, 32.a3a4 d5d4, 33.e8d8 d4c3 *(why not d4e3, which looks better?)* 34.a4a5 f7f6, 35.a5b6 f6e6, 36.d8e8 e6d5, 37.e8e7+ c7c8, 38.b6b7 f3f8, 39.e7d7 d5d4, 40.b7c7+ c8b8, 41.d7d6 f8e8+, 42.e1f1 d4e3, 43.d6b6+ b8a8, 44.b6c6+ a8b8, 45.c6:e8 Resign. *(Kerry's Brain cannot be saved.)*

Puzzle

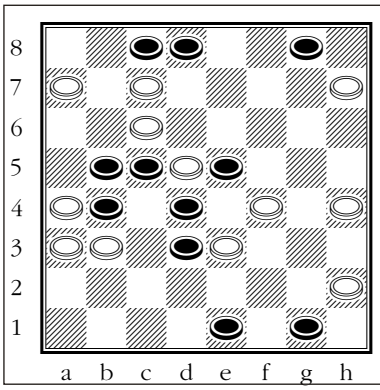
As mentioned above, Brain versus Brain plus Ninny is always a win for Brain and Ninny. One would think that Brain versus Brain was always a draw, but there are actually a number of non-trivial positions (i.e., without an immediate capture) leading to a decisive result. Some of these positions are quite surprising. Here is the puzzle:

Discounting symmetries, how many distinct, non-trivial Brain versus Brain positions are there in which the player to move can win? (Solution on page 29.) ■

Take the Brain and the two games that follow, Realm and Chase, may be regarded as forgotten classics. Very few abstract games achieve sufficient vogue that they enter the public consciousness—Teeko, Kensington, and Pente come to mind—but then, like shooting stars, they quickly fade. Almost vanishingly few abstract games succeed to enduring popularity. The only such game of the last hundred years that I can think of is Othello, and even Othello itself was an update of an earlier, Nineteenth Century game. Othello's initial, spectacular success was probably due to very effective marketing. In this issue Larry Back gives us a taste of why Othello has endured.

Sets for Take the Brain and Chase may sometimes be found on the on-line auction sites. I expect it would be very difficult to track down an original Realm set, but I think it is well worth making a set. I have found Realm to be a particularly attractive game to play for a number of reasons:

- *Players almost always have the choice between creating friendly units or destroying enemy units, and which course of action is best is often by no means clear—there is a very fine balance between creation and destruction.*
- *It is usually easy to find a move that is fun to play and in which there is a lot happening—again, the best of these options is more difficult to determine.*
- *A game of Realm is often over within 20 moves, making it a relatively short game and suitable for playing via e-mail.*
- *There is a curious atmosphere to the game. It is completely abstract, of the same order as Hex or Go, yet it is clearly still a wargame—almost all wargames, Chess included, otherwise find some kind of inspiration from the real world. – Ed.*



Lines of Action Puzzle

The White pieces are separated by the Black formation on the center left. White does not have time to move his pieces on a3, a4 and b3 around the Black blockade. What is the only move that affords White any chance of success? (Solution on page 29.)

Realm

by William L. Mikulas

The dilemma: Creation or Destruction

Realm is a wonderful and unique two-person abstract strategy game. It involves capturing territory and blocking and immobilizing the other player's pieces. New pieces are generated and added to the game as the game progresses, and strategy and objectives dramatically change through the course of the game. A few rules generate a game of great complexity and depth. People new to the game play a decent game fairly soon; mastery will take a long time, as the depth of the game is gradually revealed.

Individual games are quite different from each other, with different patterns requiring different strategies. Also, a small change in the number of starting pieces often results in dramatic changes in optimal playing strategy. Realm is little known or analyzed. Hence, there is great opportunity for people who like to discover game strategies; and, currently, people can not have an advantage because they have memorized some standard moves and defenses (as in Chess and Go).

In this article I give a brief history of Realm, the complete rules, and a number of significant variations. Then I will discuss general playing strategy and provide the moves of a complete game.

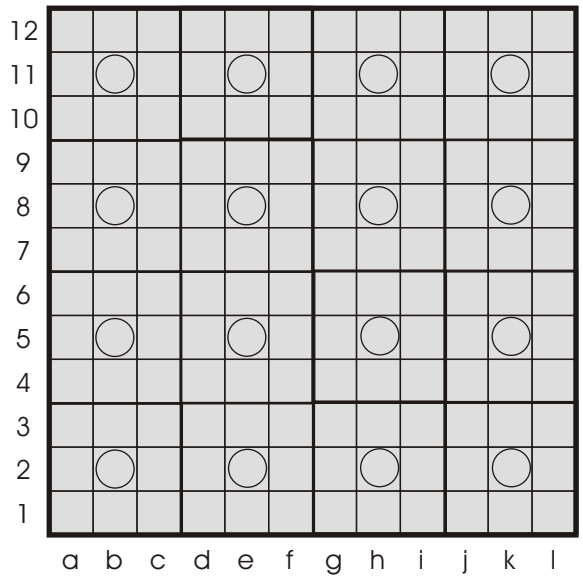


Figure 1 – Realm board

History and Development

Realm was created by Phil Orbanes, with input from Sid Sackson. They, and others, had a small game company in the1970's called Gamut of Games, which released Realm. Another game of theirs was Cartel, a fun family game for four. (Cartel was later rereleased under the name "Dallas.") Gamut of Games went out of business, and Orbanes went to work for Parker Brothers. Orbanes did not pursue development of Realm due to a conflict of interests. My friend Stanley Levin and I love Realm, so we acquired the rights to Realm from Orbanes, to see if we could get it back on the market.

We had a number of copies of Realm made up, which we sold locally and through the mail. These are now gone. The primary reason for having this version made was to have a model to try to sell the game to a company to mass-produce. Although several companies showed initial interest, we were overall unsuccessful because of a general perception of a lack of an adequate market for new abstract strategy games. We did come close to success a few times. For example, Ravensburger considered Realm for a year before declining. They did put a copy of our Realm in their game museum. And a small game company, that was off to a strong start with one of their games, took a prototype of Realm to the New York Toy Fair. They unfortunately overextended themselves and went out of business. So Realm is currently in limbo.

Equipment

Figure 1 shoes the Realm board, which has 144 squares divided into 16 *Realms* of nine squares each. The *Center* of each Realm is the middle square marked with a circle. The other eight squares of each Realm are called *Border Spaces*.

Realm is a game for two players, White and Black, who take turns, each to move his own pieces. For each player there are three different types of pieces: three Powers, eight Enforcers, and 12 Bases. Additional pieces are needed for some of the variations. (See Variation 1 below.) The pieces can be many different shapes, but here we will assume the Powers are circular, the Bases square, and the Enforcers triangular. The only critical features concern the Enforcers. They must be clearly pointed in some direction—e.g., isosceles triangles with fairly acute third angles. Also there must be an easy way to show when an Enforcer has been immobilized, such as turning it over to display an additional mark that distinguishes the bottom from the top.

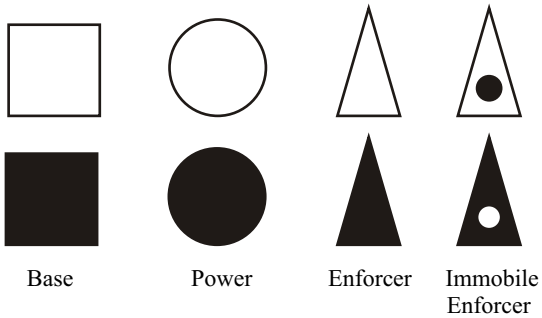


Figure 2 – Realm pieces

Setting Up and Movement

Going first is determined be any convenient and/or appropriate means, such as flipping a coin or allowing the loser of the previous game to choose. In the examples we will assume that White

moved first. Beginning with an empty board, the first player places one of his bases on the Center of any Realm. His opponent then places a Base on the Center of a vacant Realm of his choice. Players continue placing Bases on vacant Realms in turn until they have each placed three Bases. During this phase a player cannot place a Base on any Center that lies in the same row or column of Realms as another Base he has previously placed. The setting up of the board then continues with each player alternately placing Powers, one at a time, on any Border Space of a Realm where a friendly Base was previously put. Only one Power can be placed in each such Realm during this phase. A player is said to *control* a Realm if he has a Base on its Center. Thus each player will begin the game controlling three Realms, and each controlled Realm will have one of his own Powers within it. Figure 3 shows the board after one possible sequence of setting up moves.

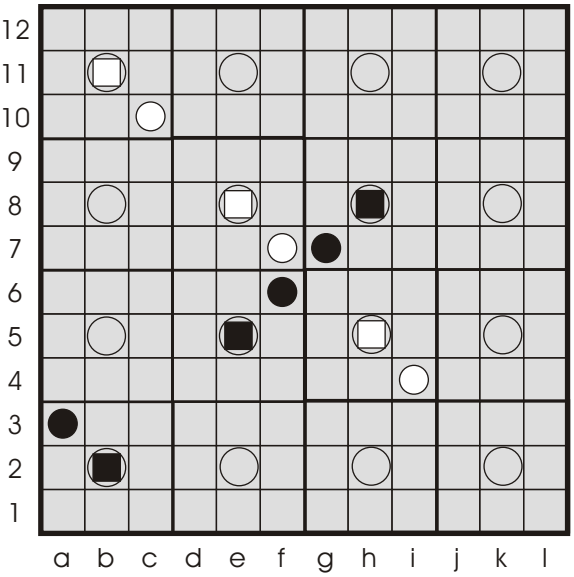


Figure 3 – Example of Set-Up

■ *Bases* are immobile. Once placed on a Center, a Base cannot move.

● *Powers* move any number of spaces in a straight horizontal or vertical line. They may stop wherever, as long as they move into a new Realm. However, a Power must end its movement when the next space is blocked by any piece. A Power may move through a vacant Center, but may not end its move on a Center.

▲ *Enforcers* move in the same manner as Powers, except that they may only move in the direction in which they are pointing when they move. Prior to moving an Enforcer a player may turn its point a quarter-turn (90°) in either direction. Thus, an Enforcer can usually move in one of three directions on a given turn, but never directly opposite from the direction in which it begins pointing. After an Enforcer ends its movement in a new Realm it remains pointed in the same direction as it moved. Immobile Enforcers cannot move. (See below.)

Special Events

After each piece completes its movement it may cause a Special Event to occur according to the following:

●■ *A Power creates a Base*. When a Power ends its movement in a Realm with a vacant Center, and there are no enemy Powers within the Realm, a friendly Base is created and is immediately placed on the Realm's Center.

●▲ *A Power creates an Enforcer*. When a Power ends its movement in a friendly-controlled Realm (i.e, a friendly Base exists therein), and no mobile Enforcer of either side exists within that Realm, then a friendly Enforcer is created. This piece is immediately placed in any vacant space within that Realm and is positioned in any desired direction. An Enforcer cannot be created if no vacant space within the Realm exists for its placement.

▲△ *An Enforcer immobilizes an enemy Enforcer*. When an Enforcer stops in a Realm where one or more mobile enemy Enforcers exist, one such enemy Enforcer is immobilized and immediately turned over. If there is more than one enemy Enforcer, the attacker chooses which is immobilized. The moving Enforcer is also immobilized in the same way, unless there are more friendly than enemy Powers existing within the Realm.

▲□ *An Enforcer captures an enemy Base*. When an Enforcer stops in a Realm containing (1) an enemy Base, (2) no mobile enemy Enforcers, and (3) more friendly Powers than enemy Powers, the enemy Base is captured. The captured Base is removed from the board and retained by the capturing player for the duration of the game. If only one more friendly Power exists within the Realm than enemy Powers, the Enforcer is now immobilized. However, if at least two more friendly Powers exist than enemy Powers, the Enforcer remains mobile.

Play

So long as a player follows the normal rules of movement, at his turn he moves one or more of his pieces in accordance with his choice of one of three movement options: Dispersal, Concentration, or Rearrangement.

● *Dispersal*. A player is permitted to move any number of the mobile pieces he has within any one Realm to one or more other Realms.

● *Concentration*. A player is permitted to move two or more pieces on the board that all end their move in one common Realm. All pieces must have begun outside the final Realm.

In both Dispersal and Concentration each piece is moved and any Special Event caused by the piece is enacted before the next piece moves.

● *Rearrangement*. A player may pick up all the pieces he has within one Realm and replace them on different spaces within the same Realm, changing the orientation of any Enforcer as desired. Any immobile Enforcer he rearranges still remains immobile. A player may not rearrange any of his opponent's pieces within the Realm. Rearrangement of pieces does not cause any Special Events. A player may not rearrange in the same Realm three turns in a row.

Objective

The game ends as soon as one player has created all of his Bases or neither player, by agreement, can create another Base. The player controlling more Realms at that time wins the game. If a tie exists, it is broken by determining which player has a greater combined total of mobile Enforcers and uncreated Enforcers. The game is a draw if both players have an equal total of these pieces.

Example

The obvious algebraic notation is used. A Special Event is shown in parentheses after a piece's move. A letter for one of the four cardinal directions indicates the direction of a created Enforcer. Lastly, 'x' is used in addition to show capture of a Base or immobilization of an Enforcer.

Beginning with the placement shown in Figure 3, White makes a Concentration play into the h11 Realm (i.e., the Realm with h11 as its Center): Pc10g10(Bh11), Pi4i10(Eg12S). Black now makes a Concentration move into the h2 Realm: Pa3i3(Bh2),

Pg7g1(Eg3N). Figure 4 shows the board after these two moves.

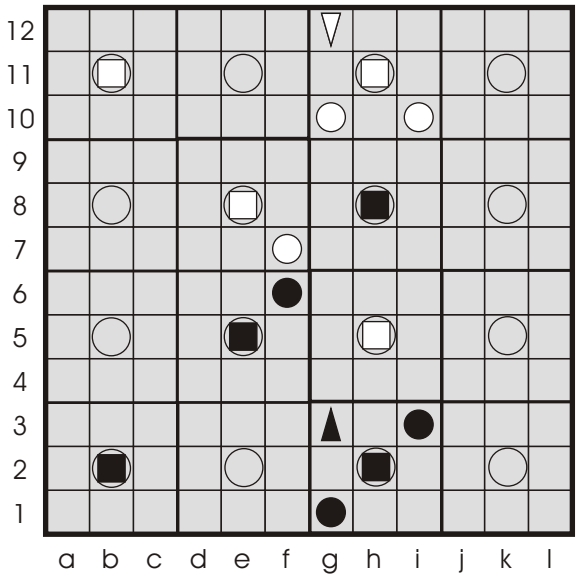


Figure 4

Black's initial set-up and move were not optimal. White now makes a strong Dispersal move from the h11 Realm: Pi10i4(Eg4S), Pg10a10(Ec12S), Eg12g6. This results in the position shown in Figure 5.

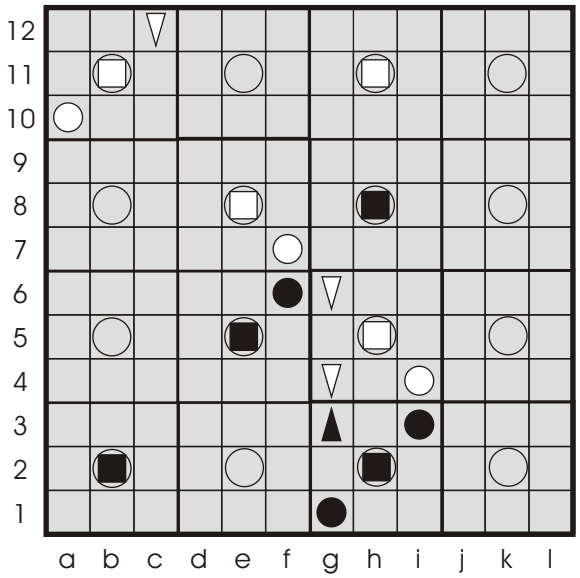


Figure 5

White now has a strong advantage. White has Black blocked in and can keep him blocked in to some extent. White will have a much easier time claiming empty Realms. And Black's h8 Realm is isolated and unprotected.

Variations

1. Start with 11 Bases for a shorter game or 13 Bases for a longer game. Try a game with seven or nine Enforcers and/or four Powers. Initial placement of four Bases and four Powers is an interesting game. When placing four Bases, follow the placement rule of not duplicating row or column for as long as possible.
2. Eliminate the restrictions about initial placement of Bases on the board, so that you may place a Base on the Center of any vacant Realm. This allows you to experiment with various starting positions.
3. Restrict the movement of Powers and Enforcers with the following rule: A Power or Enforcer must end its move when it enters a Realm controlled by an enemy Base, stopping on any space within that Realm along its line of movement.
4. Make it harder to create a Base by deciding that a Power can only create a Base when it stops in a Realm with a vacant Center and there are no other Powers, friendly or enemy, within the Realm.
5. Make it easier to capture a Base and replace it with one of your own by deciding that as soon as you capture an enemy Base you put one of your Bases in its place. This results in a much faster game.
6. After the initial placement of Bases and Powers the second player moves first.
7. During Rearrangement you may also move the opponent's pieces.
8. Change the rules for winning when the number of Realms is equal. The tie is broken by whoever has the greater combined total of (a) mobile Enforcers, (b) uncreated Enforcers, and (c) captured Bases.
9. Add the Power sacrifice option: A player is permitted to remove one of his Powers before the start of his turn in order to remobilize a friendly Enforcer. To do so, the Power, without moving, is removed from the board for the remainder of the game. An immobilized Enforcer in the same Realm is remobilized and pointed in any direction in the space it already occupies. The player must now make a Dispersal move from that Realm, and the newly mobilized Enforcer may move as part of that move.

Historical Note

The original rules by Orbanes did not include the limit on Rearrangement moves or ending the game by agreement. They did include what are called Variations 8 and 9. And the game used 13 Bases. We also qualified and clarified some of the rules.

Strategy

Realm begins with each player placing three Bases. Within the limitations of the rules there are 16 distinct ways a player can place his Bases, not counting similar rotations and mirror images. (Confirming this number is a nice puzzle.) For each of the 16 placements of one player there are up to 16 ways the other player's Bases may be placed in conjunction. Currently it is not known which starting positions are advantageous to which players, or how a player might force desirable starting positions. Generally, you do not want your Bases too separate from each other, and you want to control at least one of the four central Realms. Thus, b11-h2-k5 would probably not be good. Bases in b11-e8-h5 versus h8-e5-b2 is a reasonable and fair beginning (Figure 3). The Powers are placed to try to limit the opponent's options and give oneself the most choice.

In a review of Realm in *Games* magazine (Jan. 1984), R. Wayne Schmittberger suggested that whoever moves first has a strong advantage. This has not been our experience, and it may or may not still be Schmittberger's view. Such an advantage may depend on opening placement and/or style of play. Schmittberger suggests offsetting this advantage by means such as "allowing the first player to move only a single power on his first turn, or by giving the second player an extra base." If placing first and/or moving first are advantageous, one solution is Variation 6, where after the initial placement of Bases and Powers, the second player moves first. Or, one player could be given the choice of who

places first and/or moves first.

Once one begins play it will quickly become apparent that because of the order in which a player may move his pieces on a given turn, he can influence the order and outcome of Special Events. For example, it is usually wise to move Powers into a Realm to gain the advantage before moving in an Enforcer to capture a Base or immobilize an Enforcer. However, by moving in a Power after the Enforcer captures an enemy Base in the Realm, it is possible to create a friendly Base in that Realm on the same turn.

At the beginning of the game there is usually a rush to claim the empty Realms. Often at the end of this phase, each player will control, or have the likelihood to control, eight Realms. If one player can get nine Realms to the other player's seven, this is a strong advantage. Hence, getting nine Realms is the major goal of the initial placement and opening moves. The following are good first two moves. Concentration: Bring two Powers into a new Realm, claiming that Realm. Dispersal: Send these two Powers into two empty Realms, claiming them. Thus, after the second turn, one controls six Realms.

Games often end with players having the same number of Realms, with winning then based on the numbers of mobile and uncreated Enforcers. Thus, getting ahead in the Enforcer count is often important. And when one has such an advantage, one may readily want to trade Enforcer for Enforcer. The game value of Enforcers often depends on the particular variation of the game being played. For example, Enforcers are more valuable in a 13-Base game than an11-Base game. Or, if the winning criteria also include captured Bases (Variation 8), then one might aggressively capture Bases at the expense of Enforcers.

Overall strategy in the middle of the game includes creating multiple simultaneous threats, blocking and immobilizing the opponent's pieces, getting ahead in the Enforcer count, and occasionally giving up a Realm for a better position. Two general strategies are the Blockade and the Juggernaut.

In one form of Blockade you trap your opponent's Powers in a limited area, such as two or three Realms along a side. Enforcers, active and immobilized, possibly plus Powers, are used to maintain the Blockade. In another form of Blockade you split the opponent's pieces into two separate groups of Realms and block one or both groups.

The Juggernaut (devised and named by Stanley) consists of three Powers and at least one Enforcer all in the same Realm and moving together. In one Dispersal play with a Juggernaut a player can capture a Base of the other player and replace it with his own Base, without losing an Enforcer. Thus, the Juggernaut potentially can march along switching Bases, with a swing of two in the Realm count each time. Being forced to deal with the Juggernaut often causes the other player to lose tempo and/or abandon other strategies. Sometimes a Blockade is a good defense against the Juggernaut.

Another advantage of the Juggernaut is that it can be disbanded in a Dispersal play that can be very powerful. Three Powers head off in various directions, creating up to three new Enforcers. Sometimes this is the deciding play of a game. And sometimes the Juggernaut can disperse into one or more Blockades.

The above discussion is sufficient for one to be able to learn quickly to play a good game of Realm. Fortunately, there is considerable opportunity for others to further analyze Realm strategy, and perhaps find errors or qualifications regarding what I have said. Anything would delight me! ■

Sample Game

Following are the complete moves from an actual game. This game is shorter than most, and White is basically always in control.

Set-up: 1.Bh11 Bh2, 2.Be8 Be5, 3.Bb5 Bb8, 4.Pi10 Pg3, 5.Pf7 Pd6, 6.Pc4, Pc9

7.Pi10i6(Bh5),Pc4g4(Ei4W)/Pd6d1(Be2),Pg3d3(Ed2N)

8.Pi6j6(Bk5),Pg4g9(Bh8),Ei4d4/
Pd3a3(Bb2),Ed2c2,Pd1L1(Bk2)

9.Pg9l9(Bk8),Pj6j7(El7W)/ Pc9c10(Bb11),Pa3a12(Ec12S) (Figure 6)

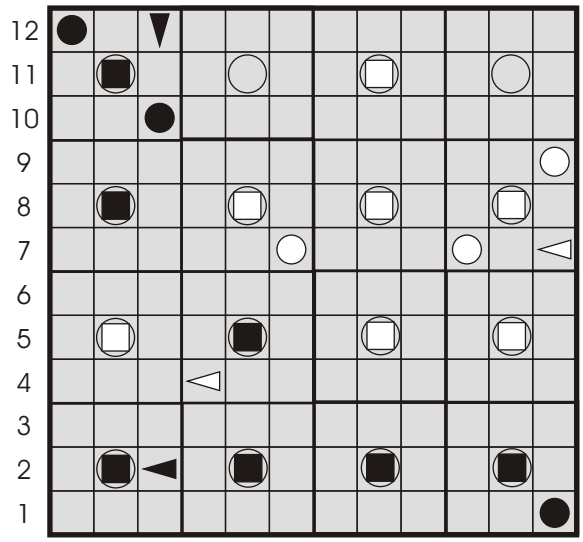


Figure 6

10.Pf7f12(Be11),Ed4d10/Pa12a6,Pc10c6,Ec2c4(xBb5)

11.Pj7j10(Bk11),Pl9c9,El7a7(xBb8,xEa7)/
PL1L6,Pc6j6,Ec4j4(xBk5)

12.Pf12f7(Ef9S),Pc9d9/
Pj6b6(Bb5),Pl6l7,Ej4j7(xBk8,xEj7) (Figure 7)

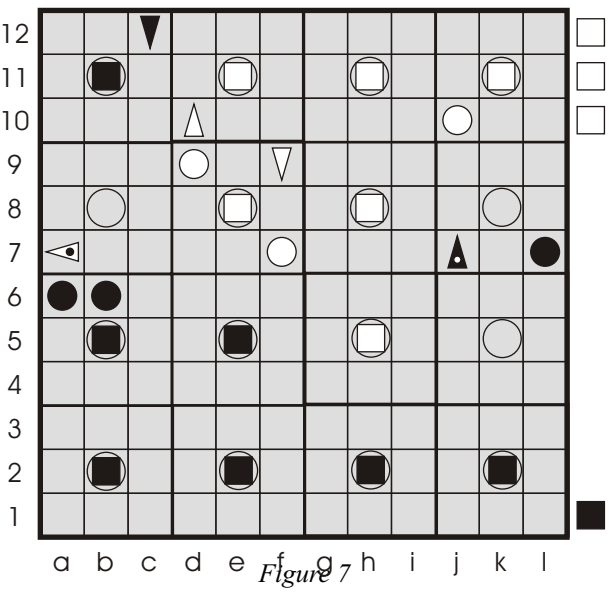
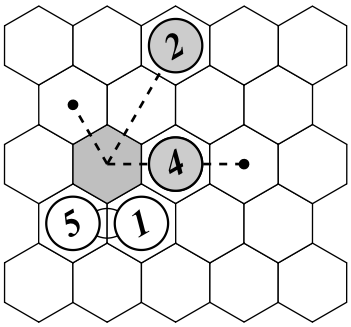


Figure 7

13.Pf7c7(Bb8),Pd9d6,Ef9f6(xBe5,xEf6)/Pl7l4(Bk5)

14.Pj10j9(Bk8)/ Pl4l10,Ec12j12(xBk11,xEj12)

15.Pc7e7(Ef7N)/Pl10l4(El6W), 16.Pe7e6(Be5) wins.



CHASE™

A 1980's Yard Sale Classic

by Clark D. Rodeffer and João Neto

In the 1980's TSR briefly added board games to their already popular roll-playing lineup. One of their more celebrated offerings was The Awful Green Things From Outer Space, by Tom Wham, recently republished by Steve Jackson Games. An undeservedly less popular title from the same series was a game designed by Tom Kruszewski. The name of his game was Chase. Following a brief run in the late 1980's, TSR stopped production, presumably in favor of more profitable titles. Thus was one of the most interesting abstract strategy games of the late Twentieth Century relegated to yard sales and on-line auction sites. While copies are seldom easy to find, most are reasonably priced, usually US$20 or less. However, the components are common enough, so it is easy to improvise a set.

Rules

The game comes packaged in a slim black plastic bifold case. Along with the Chase rules, the case contains a colorful double-folded game board and twenty standard six-sided dice, ten blue and ten red.

The board is an array of 9x9 hexagons. The central hexagon, called the *Chamber*, is specially marked. In our diagrams the nine rows of hexagons are labeled A-I. Each hexagon is referred to by its row number and the number of hexagons it is from the left of its row. The Chase board should be regarded as a cylinder. Thus, A1 is contiguous with A9, B1 is contiguous with B9, and so on.

Chase is a game for two players. One player plays the blue dice, the other player the red dice. To start, the players each roll a die. The player with the highest roll moves first. (If there is a tie, they roll again.) The dice are initially positioned as shown in the diagram. The player who moves first places his dice on the A-row. In our diagrams the person who moves first will be represented by white pieces, and the person who moves second by grey pieces. Each player has one extra die, which starts off the board.

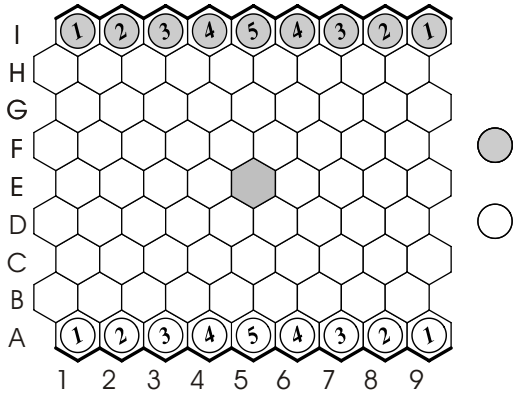


Diagram 1 – Opening setup

Our representation is slightly different from the actual game as the half hexes B1, D1, F1 and H1 have been moved to the left side of the board to make whole hexes for improved clarity. In addition, numbered circles have been used instead of dice icons. Captured or out-of-play pieces are indicated on the right side of the board—these circles are unnumbered since the value of these dice is indeterminate until they are placed back on the board.

The number uppermost on a die is known as its *speed*. The total speed of all the pieces a player has in play on the board must always equal 25. If this becomes impossible, because a player has four or fewer dice remaining in play (maximum total 4x6=24), then he loses.

The players take turns to move. Each turn a player chooses one of his dice and moves it in a straight line the exact number of hexagons corresponding to its speed. A piece exiting one side of the board reenters the other side of the board as if the board were cylindrical, as explained above. This is called a *wraparound* move. When a die runs into the top or bottom edge of the board before using up the full count of its speed, it *ricochets* off this edge. In other words, it bounces off the edge of the board and heads away from the edge, as if it were a billiard ball. It may not ricochet back along the path it took to reach the board, nor may it ricochet along the edge of the board.

A piece may never pass over another piece, of either color, nor may it pass over the Chamber. A move that would run a piece into another piece or into the Chamber before reaching the exact count of its speed is therefore not allowed. However, a piece may, by exact count of its speed, land on another die or in the Chamber.

When a piece finishes its move by exact count on an enemy piece, the enemy piece is *captured* and removed from the board. Captured pieces are kept by the side of the board until they can reenter play. In the meantime, the opponent now has a count of less than 25 remaining on the board. This must be remedied immediately, before he makes his own move. The count of the die on the board with the lowest speed is increased by the speed of the captured piece. If a player has more than one piece that qualifies as having the lowest speed, he may choose which one to increase. If the piece with the lowest speed is thereby increased to 6, and there are still captured points of speed outstanding, then the next lowest speed piece is chosen to be increased. This process continues until all points of captured speed have been absorbed by the player's dice in play, and their total speed is again 25. If a player is reduced to four or fewer dice, he can never have a speed count of 25, and so loses the game.

When a piece lands by exact count on a friendly piece, this friendly piece is *bumped*. In other words, the bumped piece is moved on into the hexagon that the moving piece would have entered next if it had one more point of speed. If the space entered by the bumped piece is occupied by another friendly piece, this piece is also bumped on one more hexagon in the same direction. This process may be repeated a number of times. If a piece is bumped into a hexagon occupied by an enemy piece, the enemy piece is captured and the turn ends. The opponent must then

increase the speeds of his remaining dice, as described above. A piece on the side of the board may be bumped across to the other side of the board with a wraparound move; a piece on the top or bottom edge of the board may be bumped off this edge in the ricochet direction. A piece may never be bumped into the Chamber—any move that would result in a piece being bumped into the Chamber is not allowed.

Pieces moving into the Chamber by exact count are split into two pieces that exit the Chamber onto the two hexagons adjacent to the original piece's point of entry. This is called a *Chamber move*. For example, if the piece enters the Chamber via E4, the two pieces will exit to F5 and D5; if the piece enters via F5, the two pieces will exit to E4 and F6; and so on. The net result is one new piece is allowed to enter play from off the board for each Chamber move; it is the only way that pieces off the board may renter play. The two pieces split the original piece's speed between themselves as evenly as possible. So 6 becomes 3+3, 5 becomes3+2, and so on. When an odd piece splits, the larger of the new pieces exits on the left. (Remember: *L*arge = *L*eft.) When a piece with speed 1 makes a Chamber move, it cannot split, so just one piece, also with speed 1, exits to the hexagon on the left. A player may only have a maximum of ten pieces in play. When a player makes a Chamber move and he already has ten pieces in play, then the piece moving simply exits to the hexagon on the left. The pieces exiting the Chamber in a Chamber move may land on friendly or enemy pieces. In such cases the pieces are bumped or captured, as appropriate.

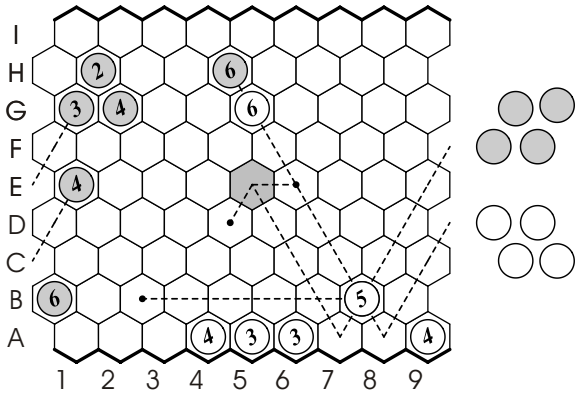


Diagram 2 – Examples of movement.

Lastly, two adjacent pieces of the same color may make an *exchange move*. This is accomplished by transferring points of speed from one piece to the other piece such that the total speed of the two pieces remains the same. For example, a 5 and a 2 may become a 3 and a 4. (Obviously a 1 is not able to donate any points, and neither is a 6 able to accept any points.) Even though both pieces remain in their original positions, this type of exchange still takes an entire turn.

Overall Strategies

Like many piece-capturing games, Chase features three general phases. Early in the game, opponents maneuver their pieces slowly, trying to gain a positional advantage, not unlike deploying an army and stockpiling weapons in preparation for war. At some point attack becomes imminent, there are casualties, and a heated middle game ensues. The endgame is reached when at least one player's forces have been reduced to a few strong survivors. Any pieces that can make Chamber moves during the endgame are very valuable, and are therefore prime targets. Most games end when small residual guerilla forces, backed by longer range defenders, chase down the few remaining opposing pieces and engage them in mêlée combat.

Having many small pieces is usually better than having fewer large pieces. While larger pieces have longer range, the smaller pieces have better movement flexibility that more than makes up for their shorter range. Late in the game larger pieces commonly have no safe move (including staying put), whereas small pieces, with their shorter turning radii, are harder to pin down. Middle-sized pieces such as 3's and 4's are strongest when grouped in clumps, where they may exchange pips freely.

As with many purely abstract games, Chase probably confers a first move advantage. But both players have several possibilities for strong openings that lead to varied games. The literature on Chase is limited, so there is plenty of opportunity for exploration.

Opening Tactics

Positional play is important in Chase, especially during the opening. When jockeying for position, there are several concepts to remember. Three of the most important positional tactics are:

- Attack or block the Chamber and the spaces immediately surrounding it, especially on your opponent's side of the board.
- When protecting exposed pieces, use pieces with speed high enough that they will not be promoted if the exposed piece is captured. This allows for immediate retaliation and also helps set up Chamber moves to regain the captured pieces.
- Keep a clump of two or three medium-sized pieces as a point exchange reservoir/special forces unit.

The initial set-up is a defensive position with regards to the Chamber. Even though neither player can immediately make a Chamber move, both players' 3's and 4's are attacking the six spaces surrounding the Chamber. So, all else being equal, the first player to move into the Chamber risks losing at least one of the newly split pieces on the subsequent move (an apparent tactical advantage for the second player).

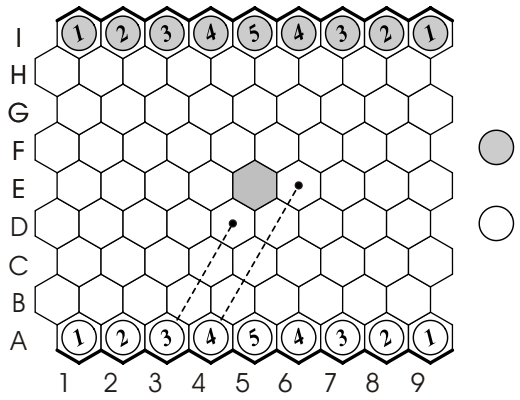


Diagram 3 – 3's and 4's protect spaces around the Chamber

What are the good opening moves, and why? From a defensive standpoint, there are several first moves that do not expose pieces to quick attack. Any move made by the 1's (either forward one space or a wraparound chain-reaction bump in either lateral direction), ducking a 3 behind the Chamber (e.g., A3D5), or an exchange move are considered safe. Opening toward the Chamber with a 2 (e.g., A8C7) is also defensive in that it doubles the attack on spaces surrounding the Chamber. Early in the game, improving position is more important than attacking small exposed pieces, so an undefended 2 is an unlikely target.

Among those mentioned so far, exchanges moves are generally more aggressive than other first moves. Consider 1A6A7 (meaning the 4 on A6 transfers 1 point to the 3 on A7, so the pieces become a 3

and 4, respectively). It prepares A7 for a Chamber move, complete with single defenses at both exit hexes E6 and D5 (guarded by A6 and A4, respectively). This move and the similar opening move 1A8A7 are probably the most aggressive openings possible. The latter is somewhat more defensive in that it does not give up the defense of E4 by A6. Exchanging a point from a 2 creates another 1 on the home row, a small piece far from the action. But this is not necessarily bad! In fact, small pieces in the corner become more useful as the middle game approaches.

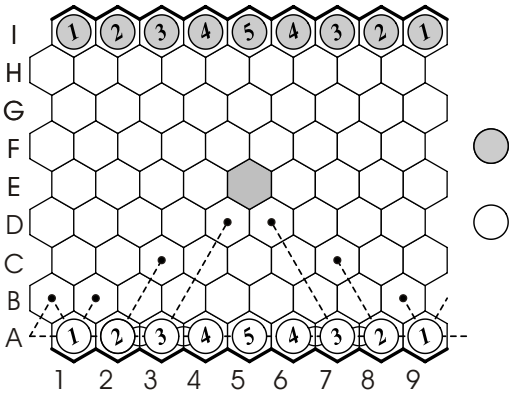


Diagram 4 – Reasonable opening moves

A wraparound chain-reaction bump on the first move is fairly aggressive and achieves many of the same positional goals as the exchanges described above. One disadvantage of the wraparound chain-reaction bump is that only one exit space around the Chamber remains defended. Ducking a couple of 3's behind the Chamber is a guerilla tactic that is somewhat balanced offensively and defensively because the 3's are like snipers hiding behind a tree, ready to pick off undefended passers-by while staying fairly safe. Either of the 1 forward moves are also moderately defensive, but being so far from the action, they do little more than delay positional development.

On the other hand, some first moves should never be made. For example, opening away from the Chamber with a 5 or 3 (e.g., A5F8) leaves a tempting target, especially considering that losing a 5 point piece usually means promoting two pieces instead of one. Faced with such a 5 or 3 opening, the best response is a wraparound chain-reaction bump, attacking with a 3 or 5, respectively. Opening with a 4 in any direction is reckless. The best response to a 4 opening is simply to capture with the available 4, which will then attack another piece (usually either a 1 or 2). These big-piece openings are roughly equivalent to bringing out the Queen too early in Chess, and the early material losses usually lead to defeat.

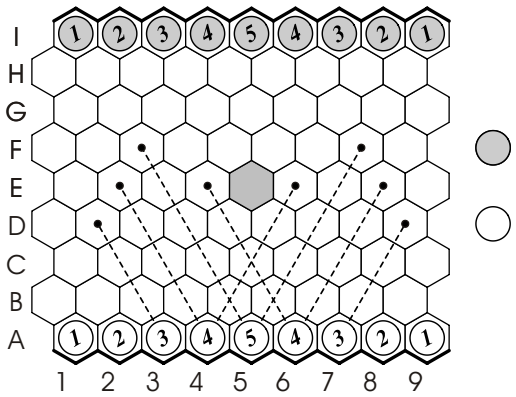


Diagram 5 – Poor opening moves

To summarize opening game tactics, move your pieces into defended positions from which they can capture opposing pieces and/or move into the Chamber.

Middle Game Mayhem

The hazy transition from opening to middle game begins when at least one player can no longer fend off opposing threats. At that point the players stop jockeying for position, and a sequence of attacks ensues. The middle game is all about gaining a material lead and a positional advantage for the endgame. Of those two strategic goals, material advantage is the easier to grasp and will be explored first. Material advantage is achieved by capturing more and larger opposing pieces than are captured by your opponent.

Attack your opponent's larger pieces with your smaller pieces. On a crowded middle-game board 6's, 5's or even 4's are sometimes unable to move, especially as smaller pieces close in around them. Remember that whenever any piece is captured, the points are transferred to the owner's other pieces, beginning with the smallest. Capturing a big piece always creates at least one more big piece. On the other hand, chasing down a small opposing piece is usually unwise, unless the small piece is a direct threat to your own large piece. The potential material cost of attacking a small piece can be more than the material gained by its capture. The diagram shows the result of a foolish move by Grey—trying to chase down a small piece. He has just exchanged 2I5I4. Sure, the move attacks C1 and sets up a follow-up attack against E4, but at what cost? A6 still defends E4, and A1B2 would both defend C1 and block the path for the continuation capture. Better still, White should immediately counter-attack I4 with E4G3, forcing Grey to waste at least one turn correcting the blunder.

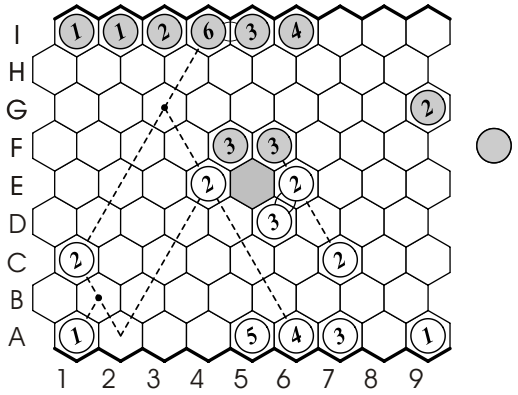


Diagram 6 – Middle game example

Remember the exchange reservoir/special forces unit created in the opening? Now is the time to use it. The basic sequence is exchange, capture, and return. Sometimes this sequence is interrupted by more urgent moves elsewhere, but prioritizing moves is what playing strategy games is all about. In the previous diagram White has a special forces unit near the Chamber. Besides the immediately available bump capture C7E6/E6:F6, a point exchange such as 1E6D6 would allow White to capture the 3 on F6 and to continue around the Chamber to take the 3 on F5. This example shows how easily a centrally located 1 can steamroller over opposing pieces and hints at the importance of breaking up your opponent's guerilla forces before they can act.

Moving into the Chamber increases the number of pieces available; the tactics involved to do so are about position. The dashed lines in the following diagram show approaches to the Chamber. Moving and defending your own pieces along these lines will enable you to make Chamber moves for a material gain.

Conversely, attacking opposing pieces along these lines will prevent your opponent from making Chamber moves to rescue previously-captured pieces. The dotted spaces show the most flexible places from which to attack the Chamber corridors.

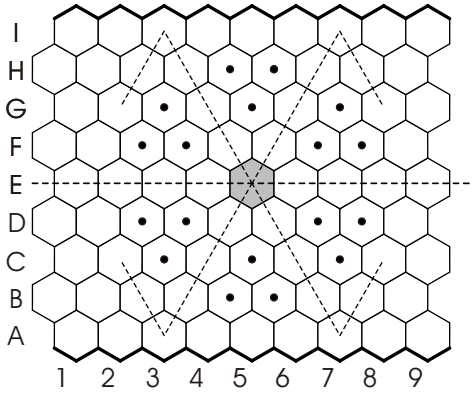


Diagram 7 – Corridors to the Chamber

The rhombus maneuver is an important middle-game positional tactic. If a piece at one obtuse corner of a rhombus attacks a space at the other obtuse corner, moving to either acute corner maintains the attack, as long as the path is not blocked. Rhombus maneuvers are doubly useful when they simultaneously attack and defend or when they are used to set up a fork.

Endgame Tactics

One of the most common complaints about abstract strategy games (although serious game players usually consider it a challenge) is that too many games end in draws because the end games are too hard to figure out. For example, who among us has not felt the frustration of facing a Chess opponent when we have only a Bishop and King remaining and wondered how we allowed ourselves to get into such a predicament? Fortunately, Chase endgames are more straightforward, and consequently, less drawish. The winning condition—to reduce your opponent to four pieces—is usually more easily achieved than capturing a particular opposing royal piece. After all, with the exception of bump moves, only one piece moves at a time. An opponent cannot indefinitely counter all simultaneous threats by moving only one piece per turn. Also, the mechanism of obligatory promotion upon capture actually helps the winning player throughout the endgame because bigger pieces are easier to pin down than smaller ones.

After the middle game skirmishes have run their courses, usually one player is left with only a few large pieces. This signals the endgame's arrival. The player with the few large pieces tries to move them into position to make further Chamber moves, and the player with more smaller pieces tries to prevent that from happening, isolating and picking off strays in the process.

Some endgame kinks Chase players need to be aware of have to do with the geometry of the board. A piece can get into position for a Chamber move by some combination of ricochets and wraparounds, but for this to work, the piece has to start on the correct rank. 6's must start on ranks A, C, E, G or I; 5's must start on ranks B, C, E, G or H; and 4's must start on ranks A, E or I. Note that, contrary to expectations, 5's are actually more flexible in the end game than 4's! Since 6's and 3's share a common factor with 9 (the board order), these pieces must also be in certain columns before any amount of wrapping around or ricocheting will bring them into a Chamber corridor at the correct distance. Mapping the various positions from which unobstructed 6's and 3's may enter the Chamber is left as an exercise for the reader.

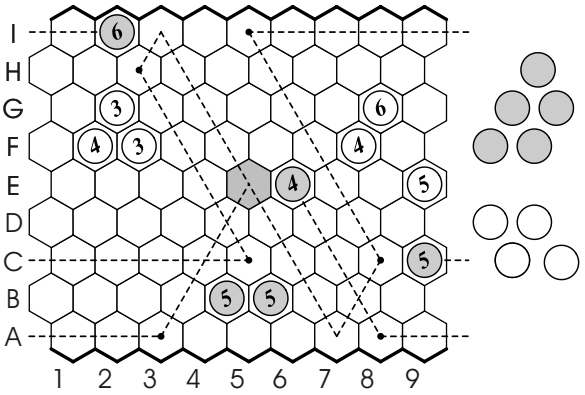
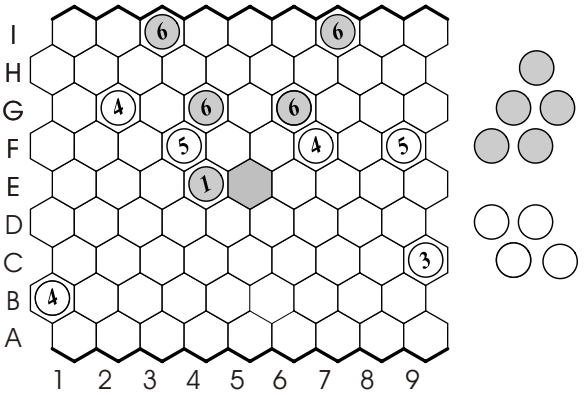


Diagram 8 – Routes to reach the Chamber

For the player entering the endgame with only a few large pieces, surviving amidst these limitations will be difficult indeed. At the very least, survival will require bumps and/or point exchanges. But even these steal precious moves and allow the more flexible opponent more time to attack. Obviously, a player entering the endgame with a special forces unit intact has a huge advantage and can prioritize targets based upon their likelihood of moving into position for Chamber moves. Sometimes unpinned and separated 6's, 4's and 3's may safely be ignored if their positions are benign.

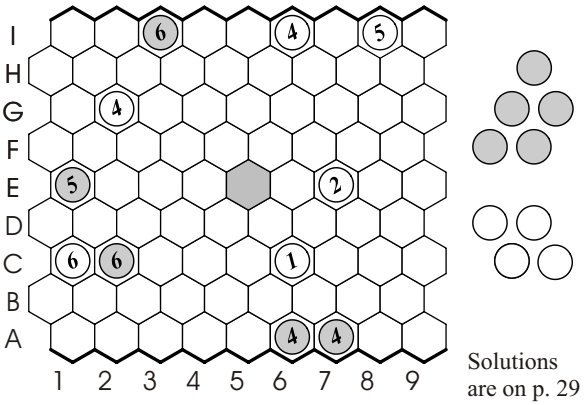
Problems

In the first problem White can force a win in three moves, no matter where Grey moves first.



Problem 1

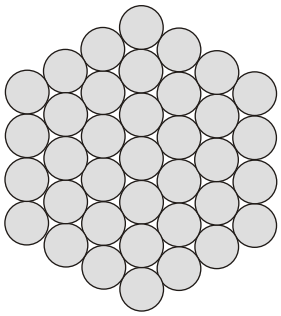
In the second problem White is to move and win as quickly as possible.



Problem 2

Solutions are on p. 29

(Continued on page 21.)



ZÈRTZ®

Strategy Guide Part 4

by Stephen Tavener

Isolating Balls

As the board shrinks, a new strategy becomes viable: isolation. Strictly speaking, it is possible to isolate one or more balls at any stage in the game, but at the start of the game it is generally much too expensive to be viable. As the number of discs in play falls, so do the number of discs you need to remove to isolate a ball.

Isolation is potentially more profitable than the exchanges I discussed before—with 3 balls on the board an exchange can get you at most 2 white balls; by isolating balls you can get 2 white balls starting with only 1 ball in play!

There are several ways of isolating a ball (or balls), each with its own benefits. I shall discuss them below.

Isolating a ball in play

Look at the following situation:

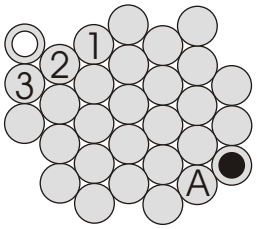


Diagram 1

Here, you can capture the white ball by isolating it. As with the exchanges, you have to pay your opponent some balls for the privilege.

Move 1: Play a ball at position A, and remove the disc marked 1.
Move 2: Play a ball at position A, and remove the disc marked 2
Move 3: Play a ball anywhere, and remove the disc marked 3.

The white ball is now yours, for the reasonable price of 2 balls. However, this is a *gote* move—you have given the initiative to your opponent. A better plan may be to play a ball at position A on the third move also. Now, you have exchanged 3 balls for 1 white ball in *sente*. This is a good thing.

Isolating an empty disc

This situation is very similar to the previous diagram, but this time there is no white ball:

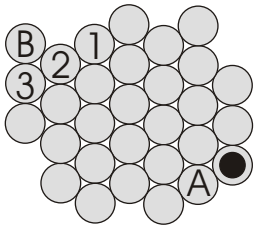


Diagram 2

Here, you can still capture a white ball by isolating it. Oddly, the cost is no higher than before.

Move 1: Play a ball at position A, and remove the disc marked 1.
Move 2: Play a ball at position A, and remove the disc marked 2.
Move 3: Play a white ball at position B, and remove the disc marked 3.

The white ball is now yours and costed the same as if it had already been in play. However, unlike the previous example, this can only be played as a *gote* move.

Multiple balls

Again, you will recognize this position. This time, though, we want to get two white balls:

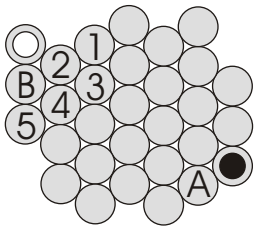


Diagram 3

Move 1: Play a ball at position A, and remove the disc marked 1.
Move 2: Play a ball at position A, and remove the disc marked 2.
Move 3: Play a ball at position A, and remove the disc marked 3.
Move 4: Play a ball at position A, and remove the disc marked 4.
Move 5: Play a white ball at position B, and remove the disc marked 5.

Two white balls for four balls of your choice—a bargain! (Again, this is always a *gote* move.)

Note: When isolating balls, you need to give your opponent one fewer ball than the number of discs you want to remove. (You may sometimes give your opponent an extra ball to keep *sente*.)

Two for the price of one

Imagine you are trailing—your opponent has just taken two white balls in the opening, and there is only one ball in play. The chances are, your opponent will be able to isolate a white ball on her next move for the win. You need a miracle. Well, here it is!

This is advanced material, but well worth the effort of mastering—the look on your opponent's face when you pull it off will be reward enough for your efforts. Look at the position at the top of Diagram 4. From this seemingly innocuous position we are going to isolate two white balls:

Move 1: Play a white ball at position 6, and remove disc marked 1. (See bottom left.)
Move 2: Play a ball at position A, and remove the disc marked 2.
Move 3: Play a ball at position A, and remove the disc marked 3.
Move 4: Play a ball at position A, and remove the disc marked 4.
Move 5: Play a ball at position A, and remove the disc marked 5.

(See bottom right.)
Move 6: Play a white ball on A, and remove disc marked 6.

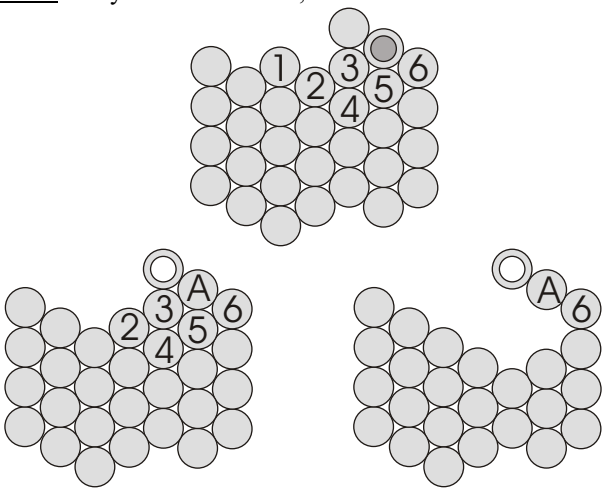
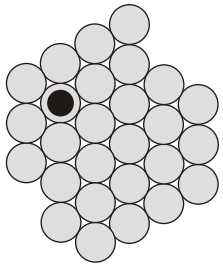


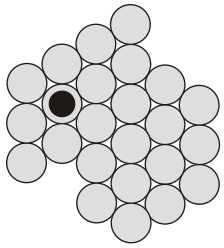
Diagram 4

The net result is that you spent five balls and captured two white balls. Of course, depending on what your opponent gave you to get her two white balls, you could just as easily have captured two grey or two black balls, which may have allowed you to win outright. If not, your position is still very good; the only thing your opponent can do on her next move is place a ball on the board, so although you have captured two balls in *gote*, your opponent must also make a *gote* move. This gives you the initiative again, and a good chance to win.

Puzzle 1: Isolate 1 white ball



Puzzle 2: Isolate 2 white balls



The Opening

The opening is the most difficult aspect of Zèrtz. After the first two moves most positions are safe; however, after three moves there is a good chance that the second player can capture 2 white balls quite cheaply. (See Three-Ball Combinations.)

This puts the onus on the first player to play defensively and make this first opportunity for profit as expensive as possible. Conversely, the second player should be looking to set himself up for a double capture as cheaply as possible.

The practical upshot of this is that the first player wants to restrict mobility of the balls as much as possible; some methods I use are as follows:

- Play the first ball in a corner, and remove an adjacent disc. For the third move play adjacent to this ball, and again remove an adjacent disc. This may result in the type of position shown in Diagram 5.

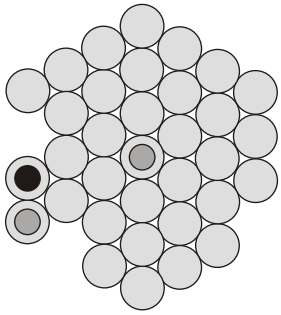
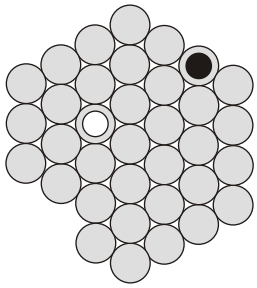


Diagram 5

This is a nice, safe position, where player two will be hard pressed to make a profit. With 4 balls on the board the advantage is passed back to player one.

- Play a white ball first in the central 7 discs, and play a white ball in the most inconvenient place you can find for your second ball. This is rather more dangerous than the first approach, but you are trying to set up a pattern where your opponent must leave you 2 balls away from winning, either by giving you at least 1 white ball in the forthcoming exchange, or 2 greys, or 3 blacks (i.e., any 4 balls). After the exchange you are looking to isolate the 2 balls you need for an instant win. Note that once your opponent succeeds in capturing 2 white balls you can only give him 1 grey and 4 black (= 5 balls) without losing, so this can be very dangerous indeed.

Puzzle 3: Player 1 started by playing near the center. His opponent made what I believe is the most aggressive response, looking for a double capture next move. What are the best places to play a third ball?



- Look for an early exchange—for example a black for a black. This keeps the position essentially the same, but the board has shrunk slightly. This increases your chances of isolating two balls after the first exchange.

Conversely, as the second player you should be playing aggressively. These are the things to bear in mind:

- You are looking to isolate 2 white balls for up to 5 others, so place a ball somewhere useful on the second move.
- If you are not lining up for an immediate capture, place a grey or black ball—you may need to capture it to get the right position, so a white ball would decrease your options.
- The discs you remove are important. Try to keep the board as close to a circle as possible. This reduces the possibility that your opponent will be able to isolate two balls after your exchange.

Next, have a look at Diagram 6. It is impossible to profit from this position!

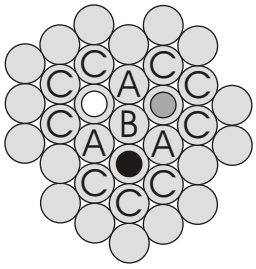


Diagram 6

Playing at any of the positions marked A will allow your opponent to capture all 3 balls. Position B is almost as bad, allowing your opponent to capture any 2 balls of his choice. The positions marked C are slightly better—they allow you to choose which 2 balls your opponent gets. Once more balls have been placed on the board this could be to your advantage. (See the example in the section on *sente*.) Note that this position is only possible with the cooperation of both players.

Isolation in the opening

Isolation is not usually cost effective in the opening, but it is very dangerous to place white balls at the edge of the board, as shown on the top left of Diagram 7.

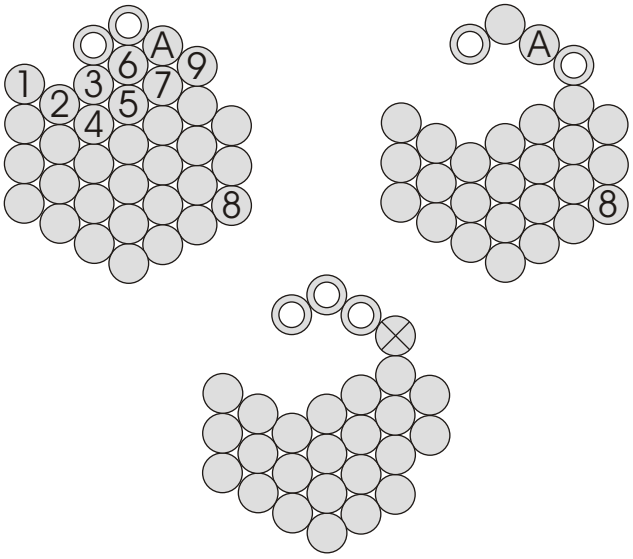


Diagram 7

Here, we can isolate 3 white balls for an instant win!

Move 1: Place a ball at position A, and remove the disc marked 1.

...

Move 7: Place a ball at position A, and remove the disc marked 7.

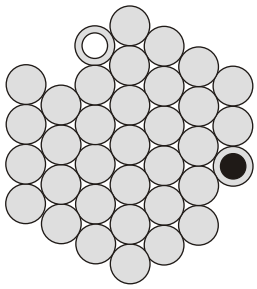
After our opponent captures the resulting position is shown on the top right of Diagram 7.

Move 8: Place a ball at position A, and remove a disc at random—8 will do nicely. This corrects a parity problem—we need the jump to put the white ball back in position, but we have already removed all the discs we need.

Move 9: Finally, place a white ball at A and remove the marked disc to isolate 3 white balls.

Note: we have to give our opponent 8 balls—the maximum possible—to achieve this coup.

Puzzle 4: Isolate 3 white balls!



The Tournament Game

In the tournament game the rules are unchanged apart from the following:

- There are now 10 black balls, 8 grey balls, and 6 white balls.
- To win, a player needs a majority of any color (4 white, 5 grey, or 6 black), or 3 of each color.

To a large extent, everything I have said about the basic game applies to the tournament game as well. So, the easiest way to win is by capturing 4 white balls (as opposed to 5, 6, or 9 balls), and you can give away 11 balls without losing the game. This makes 1 white ball worth about 2 balls, 2 white balls worth about 5 balls, and 3 white balls worth about 8 balls—much the same as in the basic game. The main differences between the basic and tournament games are during and after the opening.

The opening revisited

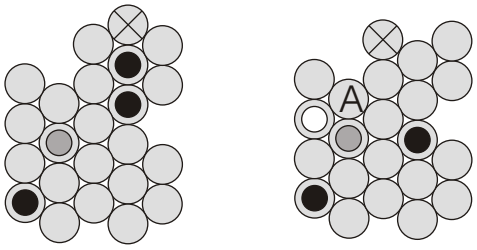
Unlike the basic game you need 4 white balls to win; with 3 balls on the board, the second player would still like to capture 2 white balls, but this is no longer the crushing advantage that it was.

Assuming player two has just captured 2 white balls, player one can still give away up to 9 balls without losing the game—more than enough to isolate a couple of balls and leave the playing area empty.

So, player two cannot afford to give away more than 3 black and 2 grey to get 2 white. Giving away 1 white ball is no longer potentially fatal, as it is in the basic game, but if player two does give away a white, player one has the chance to isolate 2 white balls. Now, player one has 3 white balls, and player two has captured 2 white balls, leaving 1 white ball remaining; player two can no longer win by capturing white balls, though the extra balls player one has just given him while isolating the white balls will give him other options. ■

Solutions to Puzzles

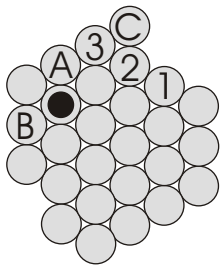
Solution to Sente *Puzzle from* AG8



Move 1: Line up the 2 black balls

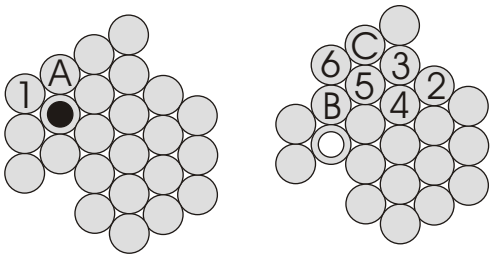
Move 2: Line up the white; either as shown, or at position A. This starts a sequence of captures, giving a black and a grey to your opponent for a white ball and *sente*.

Solution to Puzzle 1



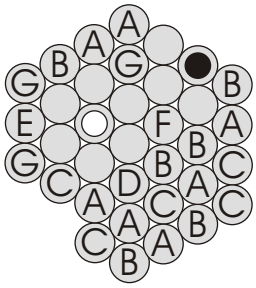
Move 1: Place a ball at A, and remove the disc marked 1.
Move 2: Place a ball at B, and remove the disc marked 2.
Move 3: Place a white ball at C, and remove the disc marked 3, isolating 1 white ball.

Solution to Puzzle 2



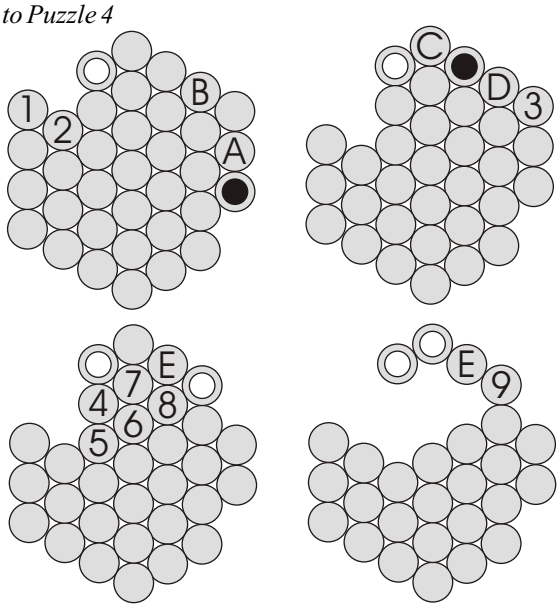
Move 1: Place a white ball at A, and remove the disc marked 1.
Move 2: Place a ball at B, and remove the disc marked 2.
Move 3: Place a ball at C, and remove the disc marked 3.
Move 4: Place a ball at C, and remove the disc marked 4.
Move 5: Place a ball at C, and remove the disc marked 5.
Move 6: Place a white ball at C, and remove the disc marked 6, isolating 2 white balls.

Solution to Puzzle 3



If you choose the color of the third ball and the disc to remove with care, here is what your opponent must give you to capture two white balls:
A – 3 balls; B – 3 balls, including 1 white; C – 4 balls; D – As B, or (worse for you) opponent can trade 2 balls for a white, leaving you in much the same predicament; E – 4 balls, including 1 white—or opponent can trade a white for a white, leaving much the same position; F – 4 balls, including 1 white; G – 5 balls.
Playing in positions marked B, C, E, F, or G gives you at least a chance to win when you regain *sente*, by isolating 2 balls; obviously, after a 5-ball sequence, the board will be smallest, maximizing your chances of an instant win. Playing a ball in the positions marked A or D should be fatal against an adept opponent.

Solution to Puzzle 4



Move 1: Place a ball at A, and remove the disc marked 1.
Move 2: Place a ball at B, and remove the disc marked 2.
Move 3: Place a white ball at C, and remove the disc marked 3.
Note: placing a white ball at D instead is fatal. Try it!
Move 4: Place a ball at E, and remove the disc marked 4.
Move 5: Place a ball at E, and remove the disc marked 5.
Move 6: Place a ball at E, and remove the disc marked 6.
Move 7: Place a ball at E, and remove the disc marked 7.
Move 8: Place a ball at E, and remove the disc marked 8.
Move 9: Place a white ball at E, and remove the disc marked 9.

(Continued from page 17.)

In conclusion, Chase is a delightful game for which Tom Kruszewski should be recognized. And even though its published life was short, Chase will live on in memory. ■

References and Acknowledgments

Tom Kruszewski, "Chase™ – The Challenging Game of Changing Strategies," published by TSR, Inc., 1030XXX1901, copyright © 1985, 1987.

Cameron Browne, personal communications, 2001. Cameron Browne's "FIG2.EXE" Hex diagram software, copyright © 2000, was used for the diagrams in this article.

Steffan O'Sullivan, "Chase," *SOS' Gameviews*, http://www.io.com/~sos/bc/chase.html, review copyright © 1997.

Stephen Bloch, "Math 472 Senior Project," http://www.adelphi.edu/~kp751f92/notes.html, Spring, 1996 Notes.

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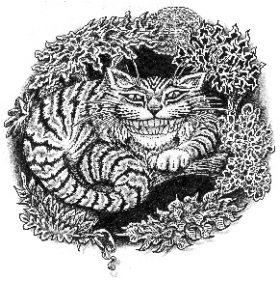
Alice Chess

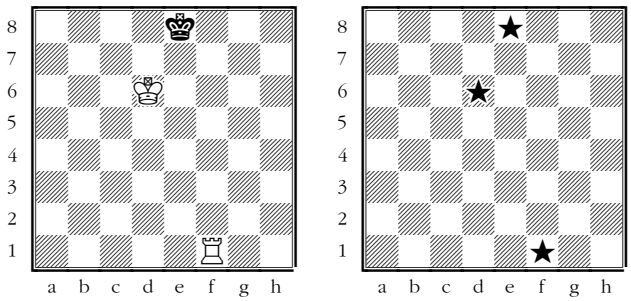
PART 2

by Peter Coast



My first article on Alice Chess was introductory; my aim in this one is to explore the tactics of the game in more detail. I will do this by presenting four positions as problems for the reader to solve. Each position will be followed by hints to its solution and, after these, the solution itself. *(Try not to read ahead! – Ed.)*

Position 1



White to play and mate in 3

This is a problem composed by John Beasley, who is well known in Chess problem circles and Secretary to the British Chess Variants Society.*

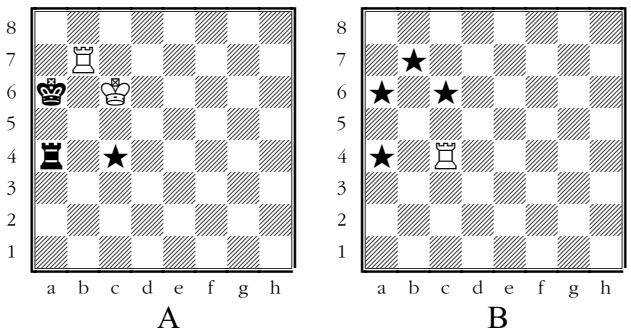
Hint

In normal Chess a simple waiting move such as 1.Rf2 suffices: there follows 1....Kd8 (forced), 2.Rf8 mate. Things are not so simple in Alice Chess: 1.Rf2 sends the Rook to Board B, and the Black King follows it. The Rook cannot then check: indeed, 1.Rf2 Kd8, 2.Rf8(A) is stalemate, as Black has no legal move and is not in check!

Solution

The idea is to start with the waiting move 1.Ke6. Now everything goes smoothly: 1....Kd8, 2.Rc1 Ke8(A) Rc8(A) mate. It is important in Alice Chess, when attacking the opponent's King, to have one's pieces on the right board!

Position 2



White to play and mate in 2

This problem is derived from another idea of John Beasley's.

Hint 1

If the Rook on Board B moves first, then all Black needs to do is move his own Rook: no mate is then possible because all White's pieces are on Board A, so he cannot check Black.

Hint 2

Moves of White's King are of no help.

Hint 3

If the White Rook on b7 moves first, then the Black King cannot be allowed to move, otherwise it will end up on Board B together with both White Rooks, and mate will be impossible.

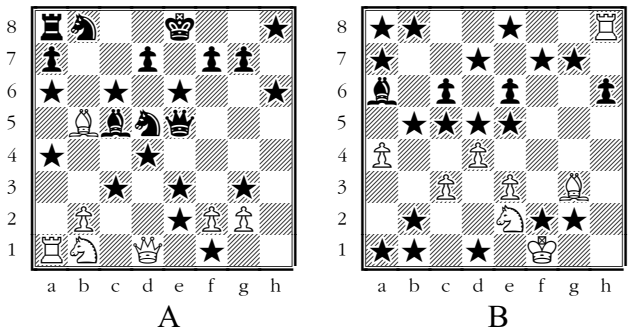
Solution

1.Ra7. This is the only move of this Rook that prevents Black's King moving. (a7 is blocked, and 1....Ka5 would result in check on Board B.) It has the additional advantage of threatening 2.Ra8(A) mate. Black can defend against this threat by moving his Rook along the a-file: it ends up on Board B, and Black can then play 2....Ra7(A) in response to the threat (effectively jumping his own King).

Suppose, therefore, that Black tries 1....Ra1. Neither 2.Ra8(A)+ or 2.Ra4(A)+ now works, but White can play 2.Rxa1(A) mate. A similar result follows if 1....Ra2 or Ra3.

So Black has only 1....Ra5 as a possible defense. 2.Rxa5(A)+ now fails to 2....Kxa5, and 2.Ra8(A)+ fails as before. White, however, now has 2.Ra4 mate. This works because Black's Rook is unable to interpose on a5 since it is already there (on Board B)!

Position 3



White to move and finish the game as quickly as possible.

This is from a game of mine. I have the white pieces, and it is my 13th. move. I am a Rook up. Six moves should be enough.

Hint

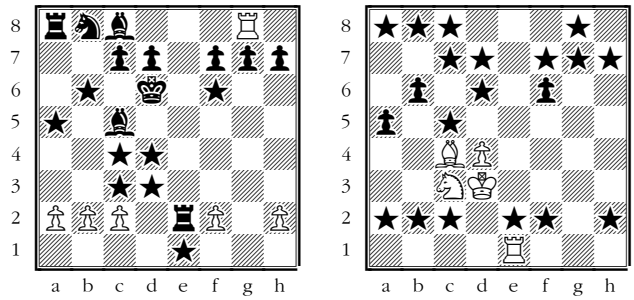
Keep on checking!

Solution

13.Rg8(A)+ Ke7, 14.Rxa7+ Kf6(A) (If, instead, 14....Nc7, 15.Bxc7(A)+ Kf6(A), 16.Bxe5 will win quickly.) 15.Bh4(A)+ Kg6 (If 15....Kf5, 16.Qh5+ Qg5 (or g5), 17.g4+ Ke4(A), 18.Qh1(A) mate.) 16.Qg4+ Qg5, 17.Rxg7 mate.)

"Chess is so inspiring that I do not believe a good player is capable of having an evil thought during the game."
Wilhelm Steinitz, interview with J. Moquette, 1896

Position 4



A B

White to move and mate in 6

This is from a game of David Pritchard's.** who is an authority on Chess variants. As White on his 16th move, he announced mate in 6. Can you find it?

Hint
Keep on checking!

Solution
16.Nb5(A)+ Kc6, 17.Rxc8+ Kb7(A), 18.Bd5(A)+ Ka6, 19.Nxc7+ Ka7(A), 20.Nb5(A)+ Ka6. At first sight is seems that nothing has been gained by the last two moves, but the square c7 is now free, and this allows a sacrificial conclusion to the game: 21.Bb7+ Kxb7(A), 22.Rc7(A)+ Ka6, 23.Ra7 mate.

In the final position the White Ra7 is protected by the Nb5, which in turn blocks the Black King! King hunts of this sort occur frequently in Alice games. I think there are two reasons for this. The first is that the increased space available for the pieces gives greater freedom for the attacking force and allows it to cover (on one board or another) more squares of the opposing King's field. The second reason is that in chess-like games attack is easier than defense. Alice games are still being played at a primitive strategic level, and this gives a natural advantage to the attacker. We only have to think of the prevalence of successful sacrificial attacks in expert Chess games of the Nineteenth Century to realize that we still have a lot to learn about effective defensive play. ■

*The British Chess Variants Society can be contacted via its Secretary: John Beasley, 7 St. James Road, Harpenden, Herts. AL5 4NX, UK.
**David Pritchard's book *The Encyclopedia of Chess Variants* (Games & Puzzles Publications, 1994) is indispensable for all chess variant enthusiasts.

"Luzhin, preparing an attack for which it was first necessary to explore a maze of variations, where his every step aroused a perilous echo, began a long meditation: he needed, it seemed, to make one last prodigious effort and he would find the secret move leading to victory. Suddenly, something occurred outside his being, a scorching pain—and he let out a loud cry, shaking his hand stung by the flame of a match, which he had lit and forgotten to apply to his cigarette. The pain immediately passed, but in the fiery gap he had seen something unbearably awesome, the full horror of the abysmal depths of chess. He glanced at the chessboard and his brain wilted from hitherto unprecedented weariness. But the chessmen were pitiless, they held and absorbed him. There was horror in this, but in this also was the sole harmony, for what else exists in the world besides chess?"

Vladimir Nabokov, *The Defence*

The Grand Chess Corner

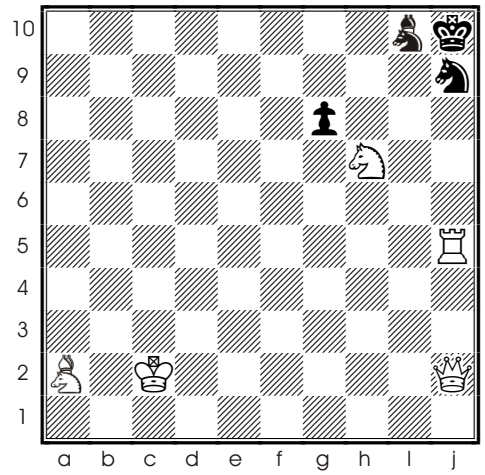
by Tony Gardner

CALLING ALL READERS to submit their completed games for analysis and publication, if they have any. I am in the midst of playing four barnstormers against Graham Allen, which should wrap up during the coming months. So, if nothing else is received, prepare for a big dose of that!

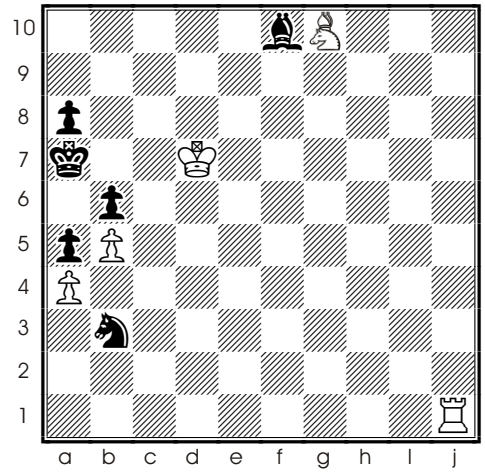
Also, please note that I now have a new e-mail address, which is orion451@juno.com. Henceforth, for all of you problem solvers, solutions will be printed in the issue immediately following their publication.

For mates in three submit the key and supporting lines (Black's possible first, then White's second in response).

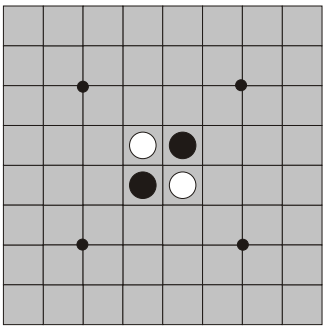
Solutions: #3 – 1.Cc4; #4 – 1.Re10 Bxe10, 2.Rxe10; #5 – 1.Ke4; #6 – 1.Mh7 Kj9, 2.Mh8



Problem 7 – White to play and mate in 2



Problem 8 – White to play and mate in 3



A Beautiful Move in Othello

by Larry Back

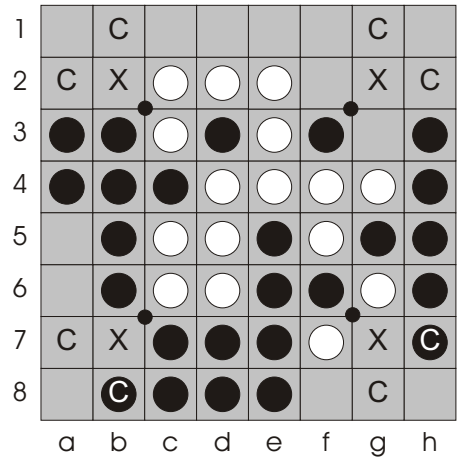
One of the first things new players learn about Othello, after taking a minute to learn the rules, of course, is the importance of moving to corner squares. Corner squares are valuable to occupy because a piece in a corner can never be flipped, and it can form the base for a whole group of pieces that can never be flipped. However, you can never take a corner square unless your opponent has a piece occupying one of the three squares that are adjacent to that corner square. Therefore, the second thing that new players learn about Othello is to avoid moving to those three squares so that the opponent is prevented from taking the corner. This is particularly true of the square that is diagonally adjacent to the corner. That square is known as the 'X' square. The two squares that are vertically and horizontally adjacent to each corner are known as 'C' squares, and they should be played to with caution. The 'X' and 'C' squares are illustrated in each corner of our diagrams.

The reason 'C' square moves are generally safer than 'X' square moves is that in order for the opponent to take a corner by capturing a 'C' square piece the opponent must first have one or more pieces along the same edge as the 'C' square. However, those pieces can usually be captured before any threat to take the corner is carried out. On the other hand, to take a corner by capturing an 'X' square piece the opponent needs only to have a piece on the same main diagonal as the 'X' square. To prevent that from happening, a player needs to maintain control of the main diagonal. But that is difficult since, unlike the edge, where pieces can be flipped only by other moves to the edge, pieces along the main diagonal can be flipped by moves made elsewhere. This is especially true early in the game. Therefore, an early move to an 'X' square usually guarantees that the opponent will occupy the adjacent corner.

The'X' and 'C' square terminology originates from *How to Win at Othello* by Goro Hasegawa, the man who, by slightly altering the rules of Reversi, 'perfected' Othello in the 1970's and made it the popular game it is today. *How to Win at Othello* was written before Othello strategy was well understood, and it is of little value to someone trying to gain an insight into the game. However, the 'X' and 'C' square terminology introduced in the book is still in use today.

While it is generally important to avoid moving to the 'X' squares, there are many exceptions to this rule. In fact, one of the reasons that Othello is a great game is that every strategy rule has exceptions, and each of those exceptions has its own exceptions, and so on. One exception to the avoid-the-'X'-square rule is when such a move would lead to a Stoner Trap. The Stoner Trap is so named because John Stoner, one of the first members of the U.S. Othello Association, discovered it and wrote about it in an early issue of the *U.S. Othello Quarterly*.

The following position is one where White can employ a Stoner Trap. *(Note that diagrams are labeled according to the Japanese system, with rows numbered from top to bottom. – Ed.)*



White has a Stoner Trap

Notice that Black occupies four edge squares along the South side, including the 'C' square at b8. This edge formation can lead to a Stoner Trap.

There are two moves that comprise a Stoner Trap. The first move is to the 'X' square that is adjacent to the same edge as that occupied by the four black pieces but not adjacent to the 'C' square occupied by the black piece along that edge. That 'X' square would be g7 in this case. However, this 'X' square move only works if Black cannot respond to it by moving immediately to the adjacent corner at h8. It is all right if Black can eventually move to that corner, but White needs to ensure that Black cannot move there on the next move. In this case, a White move to g7 flips f6 and e5 and gives White control of all the discs along the a1-h8 diagonal. Therefore, Black cannot immediately play to the h8 corner.

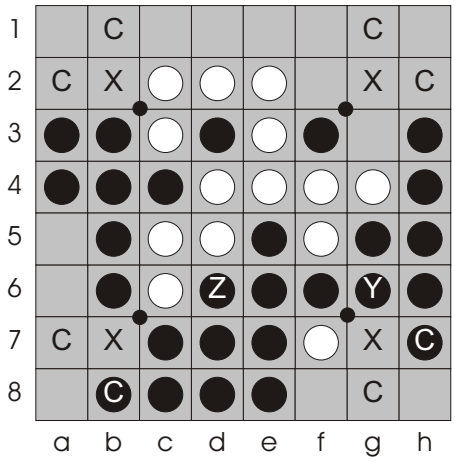
Once White has played to the 'X' square Black can make a move that flips a disc on the a1-h8 diagonal so as to threaten to take the corner on the next move. Black has four choices to accomplish this, namely c1, e1, f2, and g3. After Black has made one of these moves White must unleash move two of the Stoner Trap. The second move consists of moving to the key attack square f8, resulting in a threat to take the a8 corner. It is very important before attempting a Stoner Trap that White ensure that such a move will be possible. Once White has played f8 the only thing that Black can do to prevent White from taking the a8 corner is to move to g8. But look what happens to the disc at g7 (White's 'X' square move) in that case. That disc must be flipped to black, thereby allowing White to take the h8 corner, followed by the a8 corner. Therefore Black would not play g8. Instead, Black must be contented with moving to the h8 corner, allowing White to take the a8 corner. However, White has a better move than immediately taking the a8 corner. Rather than play a8 right away White should move to g8 first before Black does. With two white

pieces at f8 and g8 wedged between the black pieces along the South edge White is now free to move to the a8 corner on the next move or any subsequent move.

A drawback of the Stoner Trap is that in order to execute it White must give up a corner. However, White gets a corner in return plus all the other pieces along the South edge, which will remain White for the rest of the game. As well, gaining tempos is a key strategic concept in Othello, and the Stoner Trap allows White to gain three *tempos* (or '*tempi*') in this position. In order to understand the concept of a tempo, one must appreciate that Othello is often a battle to find 'safe' moves—that is, moves that do not hurt your position too much by giving your opponent access to the corner. A safe move would also avoid flipping too many discs adjacent to empty squares since doing so would tend to increase your opponent's options while decreasing your own. Any move that gives a player extra safe moves or takes away safe moves from the opponent is said to gain one or more tempos. In executing the Stoner Trap White gains safe moves at f8, g8, and a8. Even the 'X' square move to g7 is a safe move for White in this case. Black only gains a safe move at h8. Therefore, White has gained three tempos. If White chooses to play a8 before g8, then Black will be able to play g8, and White will have gained only one tempo. Therefore, it is important for White to play g8 before a8, and thereby deny Black the opportunity to play g8.

Incidentally, if the discs at g4 and g6 were both black instead of white, then White would not get a chance to make the g8 move after Black has played to the corner. In that case, White would have to settle for a gain of just one tempo. This would make the Stoner Trap a less attractive option for White, but it would still be a move that White should strongly consider.

As I mentioned earlier, every strategy rule in Othello has exceptions, and those exceptions have their own exceptions, and so on. The second position is the same as the first except for the two discs marked 'Y' and 'Z.'

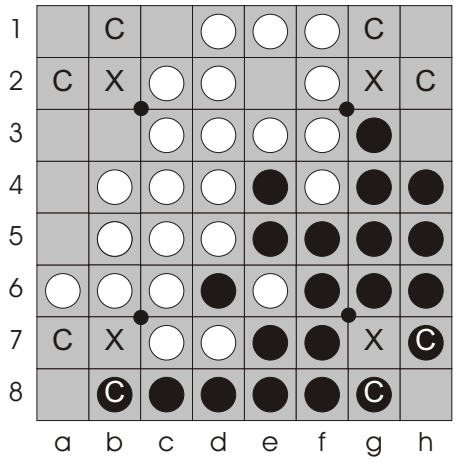


This time the Stoner Trap does not work

This is a position where a Stoner Trap will not work for two reasons. The first is that the 'Y' disc at g6 is now black rather than white. Because of this, a White move to the 'X' square at g7 flips g6 and g5, causing all the discs along the g-file to be white. This is a problem for White because Black can simply respond to White's f8 move by playing g8 without having to flip the 'X' square disc at g7 to black. We are assuming that Black does not foolishly play c1 or g3 before White's f8 move, thereby putting a black piece back on the g-file. If Black responds to g7 with some other move such as e1, then White will have sacrificed the h8 corner without winning the a8 corner.

The second reason White should not attempt a Stoner Trap in this position is that the 'Z' disc at d6 also is black rather than white. Therefore, after a White move to g7 Black can play f2, which both gives Black access to the h8 corner on the next move and denies White the opportunity to play to the key f8 square right away. Black's f2 move accomplishes this by flipping a disc along the a1-h8 diagonal at d4 while also flipping c5, thereby giving White no way to play f8 on the next move. In the first position White would still have had a disc on d6, allowing a move to f8, but this is not the case in the second position. Therefore, White would not be able to make move two of the Stoner Trap before Black takes the h8 corner. Hence, even if the 'Y' disc at g6 were white in the second position, the Stoner Trap would still not work. One needs to be aware of these pitfalls before attempting a Stoner Trap.

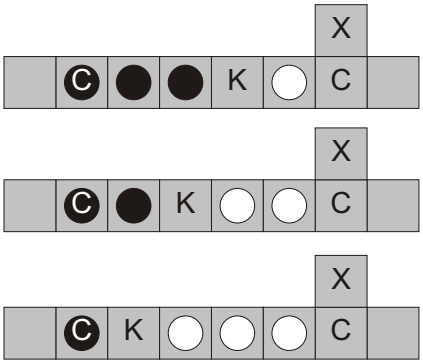
Sometimes even the threat of a Stoner Trap can be useful. The following position is from a game I played in the first round of the 1997 World Othello Championship.



Black, to move, must avoid a Stoner Trap

My opponent, playing Black, appears to have me on the ropes. Notice that Black has many more legal moves than I do. Having a lot of legal moves, especially safe ones, is referred to as *mobility*, and it is a very important concept in Othello strategy. Obviously Black has an advantage in mobility in this position. If it were my turn, I would be in a very grim position indeed. Fortunately for me, it is Black's turn. Black has many options to move in the West region of the board, but any move by Black in that area would open up new moves for me there, so my opponent wants to avoid the West region if possible. A very tempting move for Black is to the hole at e2, but I would respond with a Stoner Trap move to the 'X' square at g2. This move would be quite devastating since not only would I end up with the h8 corner, but also the a8 corner and a very nice move to g7, both of which I could take at my leisure. My opponent, aware of this threat, chose to move to the West with a4 in order to flip the c6 disc to black, and thereby deny me a Stoner Trap opportunity after a subsequent Black move to e2. However, Black's a4 move gave me three safe moves in the West, which decreased Black's mobility advantage. I answered a4 with a3. Black replied with a5, and I played b3. Then Black finally took the e2 move. However, by that time Black's mobility advantage had dissipated, and those 'C' squares that Black occupied began to work in my favor. The threat of a Stoner Trap kept me alive in this position and allowed me to go on to win 41-23.

There are three other edge formations that can lead to a Stoner Trap, as shown in the following diagram. In each case the 'K' marks the key attack square that White should play to after making the 'X' square move.



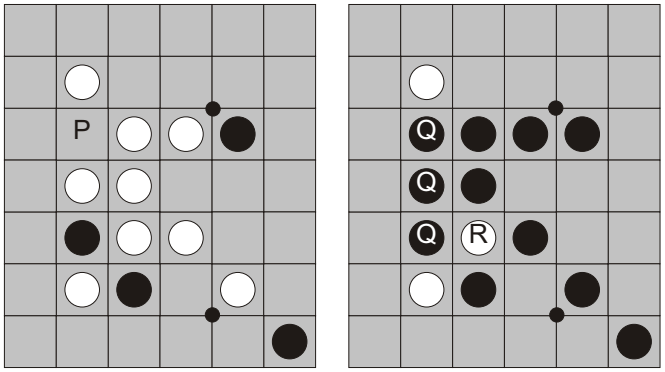
Other edge formations that can lead to Stoner Traps

The common feature of these edge positions is that, in each one, Black occupies a 'C' square. As I mentioned before, 'C' squares should be moved to with caution. But this is not to say a player should attempt to avoid 'C' squares altogether. Quite often, taking a 'C' square will gain a player a valuable tempo. The great thing about Othello is that there really are no hard and fast rules about which squares to avoid or which squares to take. Usually, corner square moves are good, but not always. Usually, 'X' square moves are bad, but not always. With 'C' square moves the word 'usually' does not apply—it depends entirely on the position. However, it is helpful, when considering a 'C' square move, to be aware of a potential Stoner Trap your opponent may have, either immediately or later in the game.

After looking at the other fifteen games from the first round of the 1997 World Othello Championship I found that two of them had either a Stoner Trap or at least the real threat of a Stoner Trap. So, while not all that common, Stoner Traps are not all that rare, either. ■

For more information about Stoner Traps, 'X' squares, 'C' squares, tempos, mobility, and a lot of other interesting aspects of Othello strategy, Larry highly recommends Othello: Brief and Basic*, which is published by the U.S. Othello Association. To order a copy, send US$6.00 for U.S. and Canadian orders, or US$8.00 for elsewhere, to Clarence Hewlett, 920 Northgate Avenue, Waynesboro, VA 22980-3425, USA. – Ed.*

Example of Othello Movement and Capture



If Black moves to 'P' in the position on the left, then a total of six white discs will be flipped, resulting in the position on the right. Note that the three black discs marked 'Q' will not be flipped, even though they are now trapped between two white discs. Neither will the white disc marked 'R' be flipped, even though it is now trapped between two black discs.

Rules of Othello and Reversi

Othello is a game for two players. It is played on an 8x8 board with 64 discs. Each disc is colored black on one side and white on the other. Initially, four discs are placed in the center of the board in the pattern shown at the top left of page 24. The four dots have no significance, and they merely mimic similar Japanese practices on Go, Shogi and Renju boards.

The players take turns to place discs onto empty squares of the board. One player, Black, must always place discs with black side face up; the other player, White, must always place discs with the white side face up. Black moves first. Once played, a disc may not be moved to another space, although it will be flipped over to the opposite color each time it is captured. A disc may alternate between colors face up many times during the course of a game.

On each turn a player must place a disc so as to capture one or more discs of the opposing color. If such a move is not possible, the player misses a turn, and his opponent moves again. It is only permitted to pass a turn if no capturing move is available.

A straight, unbroken orthogonal or diagonal line of pieces of the same color is captured if they become trapped between two pieces of the opposing color, *provided one of the two opposing pieces trapping them is the piece just placed on the board*. In this case, all the trapped pieces must immediately be flipped over to display the color of the pieces trapping them. A single move may trap several lines of opposing pieces simultaneously. Pieces which are captured and flipped over may trap yet other lines of opposing pieces, but these opposing pieces are not captured in turn. Similarly, a player may place a piece on the board creating a position in which a line of his own pieces becomes flanked by two opposing pieces, but once again, these trapped pieces are not captured and flipped over. To reiterate: the only captures ever made are those effected immediately by the piece actually placed onto the board. The capturing rules are illustrated on the left.

If neither player can move, the game ends. This may happen before all 64 discs have been played. At this point, the player with most discs with his color showing face up wins the game. If both players have an equal number of discs with their color showing the game is drawn.

The present rules of Othello were published by Japanese Goro Hasegawa in 1971, and since then the game has enjoyed considerable worldwide popularity. Othello in its current form is essentially the game of Reversi with some minor changes. Reversi appears to have originated in England with the publication of the game by Lewis Waterman in 1888. However, there remains some controversy since John W. Mollett claimed that Waterman's game was merely an adaptation of Mollett's game of Annexation, which had been published in 1870.

There are two differences between Othello and Reversi. Firstly, the board in Reversi begins empty, and the players take turns to fill the center four squares. Thus, there are two possible starting formations, depending on whether same-colored pieces are diagonally (as in Othello) or orthogonally adjacent. Secondly, rather than both players sharing a pool of 64 discs, in Reversi each player starts off with 32. When a player has used up all of his 32 discs, his opponent makes the remainder of the moves in the game.

My feeling is that the Othello system of a common pool of discs is aesthetically better, although surely Reversi allows for more variety in opening play. In any case, it is difficult to credit Othello with being unilaterally an improvement over the older game, as has sometimes been claimed. – KH

A game by Andrew B. Perkis:

MILLER'S THUMB

by Kerry Handscomb

Miller's Thumb is an unusual two-player alignment game of the three-in-a-row type. Perhaps we should rather describe it as an *anti-alignment* game as the main objective is to maneuver one's opponent into completing lines of his *own* pieces.

The game is played on a board consisting of nine 3x3 grids, themselves arranged into a large 3x3 square, the so-called *Tenth Square*. As the game progresses certain of the nine component 3x3 grids will be won by one player or the other—this pattern of results will eventually determine who wins the Tenth Square. A striking feature of the game is the fact that each turn consists of playing three pieces, rather than one, as determined by the numbering system of the playing spaces.

Perhaps the most unusual element of the game are the rules dealing with the pattern O-X-O, known as a *miller's thumb*. It should be noted that this pattern consists of *two* pieces of one player and only *one* piece of the other player, so there is a built-in imbalance to the game. The strategies for the two players are therefore subtly different. According to the game's inventor, Andrew Perkis from Weymouth in Dorset, England, it is by no means clear who has the advantage. Perhaps the game might be compared to Renju in this respect. Andrew describes the game's origin as follows:

"In a non-violent, cooperative society, would there be a role for competitive games? Miller's Thumb was first devised in connection with my interest in this problem.

"The first completed version of the game (1990) was so designed that all obvious strategies would be self thwarting. Sheer dogged vigilance was the only way to make a go of it—the alternative being to lay down one's arms and enjoy seeing the game take its course. This—according to my viewpoint anyway—was a board game designed for Utopia!

"After a while, however, recognizing the game's potential, my focus shifted significantly and I became interested in trying to make a straight competitive game out of it. And when I stumbled across the proverb 'Even an honest miller has a thumb of gold,' everything clicked into place.

"The proverb seems to mean that it is impossible not to be corrupted by being in a position to take advantage of others. In the Middle Ages millers collected tithes for the lord, and no-one else was allowed to mill. It was an arrangement in which embezzlement was inevitable. This is echoed in the game primarily by the sneaky way in which squares can be won (by switching to the opponent's color when an O-X-O line is possible). However, the game itself resembles such a miller because a player may be robbed of the gains a move brings through the consequences it might have elsewhere. It was a good name also because it links the game to traditional alignment games.

"Shortly after completing a version of the rules in line with this title, I put the game to one side, convinced that an abstract game with such complexity of rules would never attract enough players. Last year, however, I recalled the game, searched out the rules, dusted them off and—after making one key revision that I had previously been loath to do—sent them to Kerry."

Andrew would like to dedicate this game to Mike Comfort and everyone connected to the community of L'Arche, Bognor Regis, England where he lived and worked from 1986 to 1990.

Initially, the rules of Miller's Thumb seemed to me to be somewhat complex and inelegant. I suggested a number of changes to the inventor, all of which he successfully parried with good reasons for keeping the game as it is. Perhaps I am attracted to this game *because of* its baroque rules and evocative terminology. Andrew has indeed given the game considerable thought and testing and has developed some interesting theories about Miller's Thumb. Perhaps we will be able to investigate these in a future issue.

Equipment

The board consists of nine 3x3 grids of squares. These 3x3 grids are themselves arranged into a large 3x3 grid, which is called the *Tenth Square*. For clarity, each small square in the 3x3 grids is called a *cell*; each 3x3 grid itself is called a *square.*

In each row of three squares the cells are numbered from 1 to 27. Each row is numbered according to a different pattern. Each square is marked with a Roman numeral with a circle next to it. The Roman numeral is used just for identification; the circle is used to indicate *draw squares*, which are explained below.

I ○			II ○			III ○		
1	2	3	10	11	12	19	20	21
4	5	6	13	14	15	22	23	24
7	8	9	16	17	18	25	26	27
IV ○			**V ○**			**VI ○**		
1	10	19	2	11	20	3	12	21
4	13	22	5	14	23	6	15	24
7	16	25	8	17	26	9	18	27
VII ○			**VIII ○**			**IX ○**		
1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27

The pieces consist of about 60 each of white pieces called *millstones* (or O's) and black pieces called *millsails* (or X's). These pieces should fit comfortably into the cells. Also required

are a smaller number of larger pieces in three colors— black , white and a neutral color—called *result pieces*. Andrew recommends marking a white X on the black pieces to relate the white and black pieces to O's and X's.

Play

The board starts off empty. One player represents millstones, and will usually play only those pieces; the other player represents millsails, and will usually play only those pieces. The players take turns to make a move. The millstone player moves first. It is not permitted to pass a turn.

On a usual move a player plays three of his pieces to the board. These pieces must be placed in three cells containing the same number. Thus one piece will be placed in each row of three squares.

As play progresses the players will form different patterns of pieces within the squares. A *row* of pieces is a straight line of three pieces of the same color within a square. A *miller's thumb* is a straight line of three pieces in the pattern O-X-O. Both rows and miller's thumbs may be aligned either orthogonally or diagonally. (A *row* may additionally refer to a straight line of three result pieces of the same color in the Tenth Square—see below.)

A player is permitted to play his opponent's pieces if by doing so he would create a miller's thumb. In this case *all* three pieces he plays must be opponent's pieces, even those pieces which are not involved in the creation of the miller's thumb. As usual, all three pieces must be played into cells with the same number.

As the game progresses some squares will become *decided*—that is, they will either be won or drawn. When a square has been decided, all pieces are removed immediately, and a result piece is placed in the square, either of the winner's color, or neutral to indicate the square is drawn. No more pieces may be played into squares that have already been decided, so a move may consist of placing only one or two pieces instead of the full three.

Maiden Squares

If a miller's thumb has not been formed in a square, it is called a *maiden square*. If either player makes a move that forms a row of millstones (O-O-O) in a maiden square, then the square is won by the millsail (X) player. Conversely, formation of a row of millsails (X-X-X) in a maiden square gives the square to the millstone (O) player. (Switching to the opponent's color when a miller's thumb can be formed is an important way of creating rows of opponent's pieces and thereby winning squares.)

A maiden square is drawn if its ninth cell is filled without a row or a miller's thumb being formed in it.

Draw Squares

When on a player's turn he completes a miller's thumb in a maiden square, then this square becomes his *draw square*. (Not to be confused with *drawn* square!) It does not matter whether he played his own or his opponent's pieces to accomplish this. If a miller's thumb is formed in a maiden square at the same time as a row of millstones or millsails, then this row of millstones or millsails decides the square, as appropriate—the square does *not* become a draw square. As soon as a player gets a draw square he places one of his own pieces in the circle beside the square to indicate that it is his draw square.

A player wins his draw square if when the ninth cell is taken no rows have been formed of either player's pieces. (This objective, which in a maiden square would result in a drawn square, is what makes the name *draw square* appropriate.)

Conversely, a player wins his opponent's draw square if a row of *either* player's pieces is completed within it. (Note that a draw square cannot therefore actually be drawn!)

A player also wins his draw square if he forms a second miller's thumb in this square. Miller's thumbs take precedence in draw squares, so a player wins by forming a second miller's thumb in his draw square even if a row of millstones or millsails is formed simultaneously.

Special Rules and Clarifications

- If a player creates a miller's thumb in a maiden square by playing in the ninth cell of that square, then he wins the square instantly. He wins it even if a row of his own pieces is formed simultaneously.
- Formation of a miller's thumb in an opponent's draw square has no significance. Nevertheless, such a miller's thumb may still be used as the justification for playing the opponent's pieces. (Also, a line of millstones or millsails formed simultaneously with a miller's thumb in an opponent's draw square will, of course, win the square, as usual.)
- If more than one miller's thumb is formed simultaneously in a maiden square, the maiden square simply becomes the player's draw square. In other words, the second miller's thumb does not count as the second miller's thumb to win the new draw square.

Swapping

When a player wins a square on his own move he can proceed to *swap* squares. He exchanges the result piece in the square he has just won with another result piece that has already been placed on the board, either a neutral result piece indicating a drawn square or one of his opponent's result pieces. (Clearly there is no point swapping with one of his own result pieces.) If a player wins more than one square on a move, only one swap can be performed. However, a player may swap the result piece from the win with the result piece from another square that is decided in the same turn.

Tenth Square

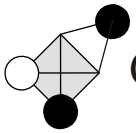
The game ends as soon as all nine component squares have been decided. The Tenth Square is then decided by counting the number of rows of each player's result pieces. The person with fewer rows of result pieces wins the Tenth Square. The Tenth Square is drawn if the players either have no rows in it or one row each. (A little thought will indicate that the players cannot have two or more rows each in the Tenth Square.) Miller's thumbs have no significance whatsoever if they happen to be formed from lines of result pieces in the Tenth Square.

Deciding the Game

Once the game is over, a player scores one point for every square he has won and a half point for every drawn square. The Tenth Square counts the same as the other nine, just one point. However, if the score is tied at 5/5, the winner of the Tenth Square wins the game. A game can only be drawn if it is tied 5/5 and the Tenth Square also is drawn. ■

"He was a janglere and a Goliardis,
And that was most of sinne and harlotries.
Wel coude he stelen corn and tollen thries—
And yit he hadde a thombe of gold, pardee."

(From Chaucer's description of the Miller, *The Canterbury Tales,* General Prologue, lines 562-565.) As well as stealing, corn the Miller was adept at taking three times the amount of flour he was due for grinding the corn. It was not even necessary for him to do this any more since, like all millers, he was already rich from defrauding his customers.



Game Tournaments

The two 2001 tournaments are coming to a close:

Onyx

The Onyx tournament was tied between Larry Back, Oriol Comas i Coma and Kerry Handscomb. A final round is being played between these three contestants. There were six entrants.

Kyoto Shogi

The Kyoto Shogi tournament was won by Jochen Drechsler, with a perfect score. Mike Sandeman came second. As a small prize, Jochen's subscription to *Abstract Games* will be extended by two issues. There were seven entrants.

Although small, both tournaments were hard-fought. We hope to showcase the best Onyx and Kyoto Shogi games in a future issue.

In 2002 we will hold tournaments in **Onyx** (rules in *AG4*) and **Croda** (rules in this issue). Entry to either of the tournaments is free to subscribers of *Abstract Games* and is US$5.00 for non-subscribers. Play is to be conducted by e-mail. Players are expected to reply to a move within one week. The organization of the tournaments will depend on the number of entries, but the maximum number of games played concurrently by a player in either of these tournaments will not exceed six. The deadline for entry is 15 March, 2002. Any disputes will be arbitrated by *AG*.

Entries should be e-mailed to conniekerry@telus.net.

The winners will receive a small prize.

Solutions

Solutions to Chase Problems

Problem 1. Obviously, all of Grey's pieces except E4 are pinned, so move choices are limited. Upon first glance E4:F4(C9=6/B1=6) looks tempting, but White can simply respond with B1:F4 (*via* a ricochet at A1) for the win. So Grey has to move elsewhere. Grey's best chance of escape is to somehow get E4 to G5, and either bump or exchange pips with one of the 6's at either G4 or G6 and, with luck, attack G2. So the best move for Grey is E4F5. White could respond with F4G1 (*via* a ricochet at I2). This would leave F9:F5 (*via* a wraparound) on the next move if Grey does not move it out of the way; also it creates a guerilla force which can exchange 1G1G2 to threaten G1:G6 on the following move. But since Grey already plans to move F5G5, the capture threat is a moot point. Worse, no matter what sort of pip exchange between G1 and G2 White devises, Grey can counter with bumps such as G5G6/G6G7 and/or pip exchanges that successfully defend G6 against any attack. A similar, although somewhat less elegant response would be C9F2 followed by a pip exchange, but neither of these responses prevents Grey from using the 1 on G5 effectively. Finding a move that does so is essential for White. Notice that C9 and B1 are adjacent. The pip exchange1B1C9 sets up C9G7 followed by G2G7/G7:G6 for the win. This sequence is unstoppable, even by G5G6/G6:G7(B1=6/F7=5) because the 4 at G2 need not promote. The complete solution is: **1....E4F5, 2.1B1C9 F5G5, 3.C9G7 G5G6/G6:G7(B1=6/F7=5), 4.G2:G7**

Problem 2. This is a trick problem, just for fun. Note that White's pip total is only 22. This means that Grey has just captured a 3 somewhere, so now White needs to promote C6=4 before making a move. This fortunate promotion, the result of a blunder by Grey, leaves C6:C2 (or C6C1/C1:C2) for the immediate win.

Solution to Bashne Problem

1.h6g7 f8:h6, 2.f4g5 h6:f4:b8(or c7 or d6), 3.f2g3 b8:h2, 4.c3b4 c5:a3, 5.d4c5 b6:d4:f2, 6.e3:g1 a3b2, 7.h8:a1 wins.

Solution to Take the Brain Puzzle

47 positions: a1a3, a1a4, a1a5, a1a7, a1b2, a1b3, a1b4, a1b5, a1b6, a1c1, a1c2, a1c3, a1c4, a1c5, a1c6, a1d2, a1d4, a1d5, a1e3, a1e4, a1e6, a2a4, a2a6, a2b2, a2b3, a2b4, a2c2, a2c4, a2c5, a2d3, a2d4, a2d5, a3a5, a3c3, a3c4, d3c3, d3d5, d3e3, d3e4, f4c3, f4c5, f4c6, f4d4, f4d5, f4e3, f4e4, f4e6.

Solution to Lines of Action Puzzle

1.f4f5. This quiet move threatens h2:e5, h4:d4, and the strong h7e4. White begins his assault on the blockade.

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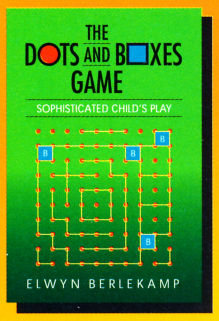

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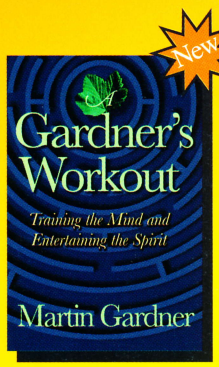

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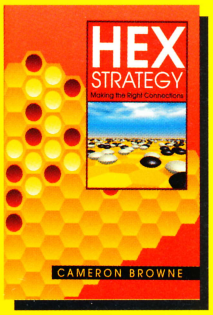

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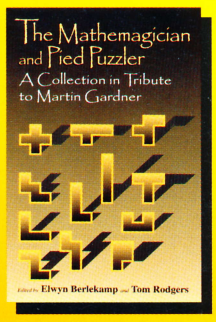

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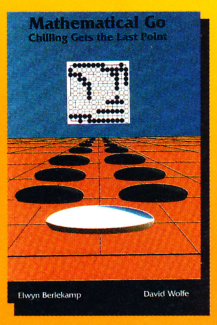

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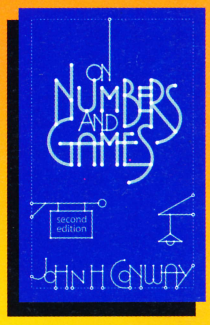

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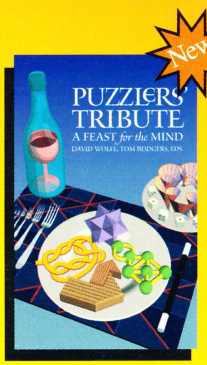

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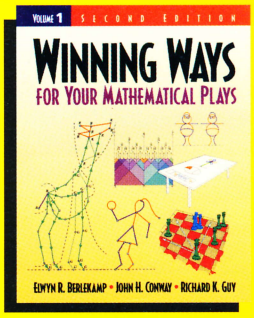

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