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Abstract Games

... for the competitive thinker

~ Entropy: a "modern classic"
~ Gle'x: the complex game of triangles
~ Omweso: Uganda's national game
~ Game Design Competition winner!

Front Cover

Feudal, first published in 1967, was one of the famous Bookshelf series of games from 3M. Other notable titles in this series were Ploy and Twixt. While not one of 3M's very best games, Feudal is quite playable, and interesting because of its multiple-movement rule.

Feudal contains six sets of pieces. Each set consists of three Royalty, an Army of 10 regular pieces, and a Castle. A player loses either if his three Royalty are captured or if his Castle is occupied by enemy forces. The board is a 24x24 array, with shading representing mountains and rough terrain. Two of the Royalty and two of the Army pieces are mounted. Mounted pieces move like Chess Queens, except they are unable to cross mountains or rough terrain. The remaining pieces have various movement capabilities, and they may cross rough terrain but not mountains.

The game can be played with up to six players, always with two teams, although only one Castle and one set of Royalty is used for each team. A screen is provided so that each team may deploy its pieces in secret. Perhaps the best version of the game for two is each player taking either two or three sets of pieces. The front cover shows a setup using all six armies. All pieces on a team are moved each turn.

The game can be quite wild, moving very quickly to a conclusion because of the enormous attacking potential unleashed by allowing every piece to move in a turn—especially as a number of pieces on each team have Queen power, and most of the rest are at least as strong as Bishops or Rooks. To a certain extent, the terrain features can slow down the sweep of an army across the board, but still there are plenty of open lines that may be exploited.

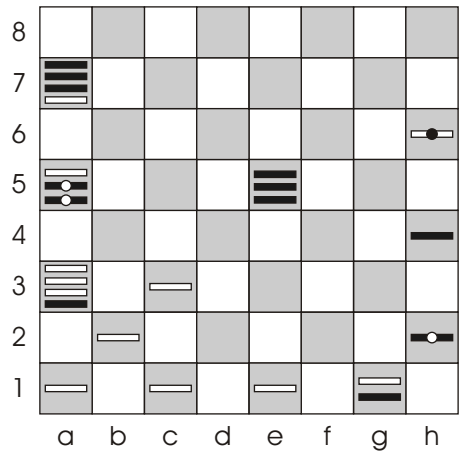
Players may like to experiment with different rules to limit movement. An option suggested by Jon Freeman in *The Playboy Winners' Guide to Board Games* is to allow each team to move only *half* its pieces in a turn.

If you can find a variant that works for you, Feudal is worth a look. The pieces are well designed, and there are opportunities to be pleasurably devious in the initial deployment. – 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

Sometimes this magazine comes together really easily, with the articles fitting together like the pieces of a jigsaw puzzle and errors being smoothed out of it effortlessly. Sometimes it is more difficult, and the last issue was one of those. Our fabulous copy editor was mortified. We have done our best to ensure that this issue will be better.

Many readers liked the articles we have run about "forgotten classics" or "modern classics," so we have decided to do more of them. This issue contains a large spread about Entropy and a short piece about Phalanx. The next issue should see articles on Domain, Pagoda, and Steppe. The latter, another in the short series of abstract games published by TSR in the 1980's, has become my favorite "new" game of the last several months. It is a gem.

Checkers variant material continues to roll in. This issue includes Lasca. The next issue will contain an article by the same writer about his fascinating Sleeping Beauty Draughts. And then we have two solid articles on Bashne that I have been waiting for the right moment to put in the magazine. We could not include any Go variants this time, but I expect to have an article on Rosette soon, and also we will be covering Orbit in some detail, a Go-like game by Steve Meyers, inventor of Anchor.

There are two types of "serious" game players. The first type studies and plays one game exclusively, in order to get good at it. In Western countries, the quintessential game for serious study is, of course, Chess, although there are many devotees of one or another of the checkers variants. In the East, Go, Shogi, and Xiangqi are preeminent.

The second type of game player samples many different games, and is frequently flitting around from one game to another—there is never the time to get really good at any one game. I belong firmly in the second category, although I have had periods where I have focused exclusively on Go or on Shogi or on Lines of Action. Recently, my game playing has become even more eclectic, as there is rarely the opportunity to devote more than a couple of sessions to any one game before it gets pushed out by one of the new games coming in.

Sometimes I miss the thrill of investigating games in more depth, and reading about and applying strategies (or devising and testing new strategies if the game has no literature). Maybe I should pick three or four games to concentrate on over an extended period of time. One of these would be Onyx, which stretches before me like an ocean. Perhaps Dvonn, of recent games, would be another, although I have not played it enough to know certainly whether it really has the same quality of depth beyond depth. I thought Renju would be such a game for me, and I have tried and tried, but I cannot break into the region where the strategy begins to make sense to me. I am sure this is a fault of mine rather than of the game, and perhaps alignment games as a whole are not for me. One of these days I will return to Lines of Action, but a few years ago I overdid it and became a little too obsessed with analysis. I haven't been able to play it much since.

Mentalis I've always loved, and it would definitely be one of those three or four special games. But it is not really suitable for distance play, and unfortunately most of my "serious" game playing has to be via e-mail these days. Maybe Realm is another, or Steppe, or Dameo, or Entropy. Perhaps my flitting from game to game is really a quest for the ultimate game that will deliver the perfect playing experience time after time. It's a journey, like life.

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.*

I normally skim through the checkers variants articles, but the plentiful diagrams in the Dameo article caught my attention. I read every word and find the game fascinating. I went through all the examples and was amazed at the level of mastery required, especially regarding the setup with forced moves. I gave a token effort with the problems, but quickly resorted to the solutions. When the solutions finally appeared in full view, I was in awe. This is obviously a very tricky game with many surprises. I loved the article so much that I am going to look at Havannah. I don't know if I'll find time to program it, but €1,000 is tempting. Again, each issue is treasured. I look forward to receiving them with the same anticipation as the new issues of Spider Man when I was a kid.

Jim Polczynski, USA

I have to say I have enjoyed the history articles in the last two issues. They were a nice change of pace. You asked people last issue to write in and say what they liked and did not like in the magazine. Well I think the balance is just about right—introductory articles, in-depth articles, series articles, reviews, and all kept to a nice balance within each issue. There are things I am not greatly interested in, but then there are bound to be many who find these the best parts of the magazine, and I may well develop a passion for them in the future anyway. I enjoy the articles about new games—I especially liked the one on Realm in the last issue—and the ways these contrast with games that have been played a lot. I also like the idea of printing a simple game board on the back cover. All in all, I think the magazine is great and wouldn't change a thing, except perhaps getting it more often!

William Wragg, England

The book review by David Pritchard in *AG10* was really curious. Mr. Pritchard gave three reasons for the lack of popularity chess variants endure. I think he missed the mark on all of them.

First, he states that variant players usually come from those who already play Chess. Naturally true enough, but he then infers it is often because they were poor Chess players. This may be in some cases, but the converse is more normal, and in my experience variant devotees are fairly good Chess players driven by innovative spirit, not a lack of talent or result.

Next, he says that Chess players are asked to discard their knowledge. It isn't a requirement that one quit playing Chess to play variants! Furthermore, the over-mechanization of opening theory during the past several years has turned Chess into more of a chore than a pleasure, especially at the higher levels. Humans have an innate desire to strive to be more perfect in every endeavor; unfortunately, the closer we reach to attaining this, the less entertaining.

Finally, Mr. Pritchard points out that variants do not have the supporting infrastructure of Chess. Does this keep an idea from becoming popular? Shouldn't this make variants attractive instead of fearful? All those centuries ago when Chess began, the infrastructure for Chess wasn't there either, yet it blossomed into one of the world's most widely played board games.

Is all of this really what keeps Chess players in large numbers away from variants? I don't believe it. It is worth examining the attitudes of Chess players. They mostly don't know about or shun variants, and either think they have "found the bomb" in terms of board games and need look no further or (even worse) cling to a notion that Chess is some kind of pure game that should not be tinkered with. We know that historically Chess is one of the more notably eclectic game conceptions, which itself has evolved over long periods of time.

Tony Gardner, USA

I particularly enjoy the coverage you give to games you call "modern classics" or "forgotten classics." Games like Epaminondas, Mentalis, Realm, and Chase deserve to be brought to light and played now and then.

Helen Groves, Australia

I hope you enjoy Entropy and Phalanx in this issue. AG12 *should see coverage of Steppe, Pagoda, and Domain—all "forgotten classics." – Ed.*

A lot is happening with my card games, so I thought I'd send a message to tell everyone about it. The big news is: Eleusis and Variety, two of my old games, just appeared in the latest edition of *Hoyle's Rules of Games*, the most popular of the reference books on games. Also, I finally wrote up the rules to Auction, a game I've been revising for many years. I call the revision "Auction 2002," and I've included it in a booklet I just privately published. There is more about all this in a section of my web site devoted to games, at: http://www.logicmazes.com/games/. I recently expanded this section, so it now contains more than you probably ever wanted to know about my games.

Bob Abbott, USA

Congratulations on the well deserved recognition, Bob! These games were originally published in Abbott's New Card Games *(which also includes the chess variant Ultima!), one of the classics of game literature. – Ed.*

The game Freeze, invented by Greg Van Patten, described in *AG7*, reminded me of the Hawaiian board game Konane, described by R.C. Bell in his *Board Game Book* (1979). Could Freeze have been inspired by this game? It is not clear to me if Konane described by Bell is a modern reconstruction of a lost game, or if he actually presents authentic rules. Can any of the *AG* readers answer this question?

Peter Michaelson, Denmark

Greg Van Patten became aware of Konane only after submitting Freeze. He admits that the basic play of the two games is similar, but points to significant differences: in Konane the board is not toroidal, there are no "kings," and jumping must be in a straight line. – Ed.

Corrections from *AG10*

Page 8: In the rules for **Defiance and Domain** it was stated that diagonal captures can occur within a domain if a player's Command is on a key point in the domain. Actually, diagonal captures can occur if the Command is on any point of the domain except a border point between two domains (i.e. including edge points of the board within the domain).

Also, the inventor wishes to emphasize his intention that a Rebel player unable to move his Command simply skips the Command movement part of the turn rather than immediately losing the game.

Page 9: An important omission from the rules of **Takat**: A player cannot move a piece just moved or entered by the opponent.

Page 11: In the last line of the first column g2:f2:f4:f6:c6 should be g2:e2:e4:e6:c6.

Page 25: The title should read Part 5, not Part 6.

Game Review

Zhadu

Designed by Rodney Frederickson

Subtitled "A Strategic Adventure into Wisdom," Zhadu seems not to be a game that takes itself lightly. Ostensibly invented by Hakummar, a Fifteenth Century scribe, the game invites one to "remember the way" by achieving the winning conditions. I am sure this is intended by Frederickson to be a tongue-in-cheek presentation, since games that take themselves too seriously are often mediocre, and Zhadu is a good game.

The board is an array of eight equilateral triangles arranged in a diamond shape. The pieces are much smaller than the triangles and can occupy either the corners or the centers of the triangles. Thus there are actually 32 "spaces" on the board. Pieces maneuver around the board by traveling from corner to corner or between corners and center within triangles, or they may move from one corner to an adjacent corner in another triangle.

Each player has five pieces, differentiated by size. The smallest is the 1 Stone, and so on up to the 4 Stone. The fifth piece is the 1- 2-3 Stone, which is actually the same size as the 3 Stone, but is marked by a depression on one side. Each piece may move the number of vacant spaces corresponding to its name. The 1-2-3 Stone obviously has a choice. Pieces may freely change direction in their movement. A move cannot finish on a friendly piece, but landing on an enemy piece captures it.

The board is placed between the players with the acute angles of the diamond pointing to them. The board starts vacant. The opening setup is determined by the players taking turns to place a piece on one of the four spaces of their nearest triangle or the center of the next triangle forward until all pieces are on the board. There are strategic choices to make at this placement stage.

A player wins if the first and last piece that he has captured totals four. Thus, if the first capture is the 4 Stone, the player immediately wins. If the first capture is the 1 Stone, the player will win as soon as he captures either the 3 Stone or the 1-2-3 Stone, although he may make other captures in between.

It is this variable objective that raises the game to another level and makes it strategically interesting. Thus, a player may actually choose to sacrifice the 2 Stone, knowing that the only piece his opponent can then capture to win is the 1-2-3 Stone. In addition, once the 2 Stone has been captured the powerful 4 Stone can be fully utilized, as its loss will not mean immediate forfeiture of the game. Perhaps it is a good idea, therefore, to place the 2 Stone in the most forward position at the start of the game. On the other hand, loss of the 1-2-3 Stone at the outset would be a major setback because it would allow the opponent to win with the subsequent capture of any piece except the 4 Stone.

In order to master the game tactically, I think one would have to become very familiar with the various routes around the board. It seems to me that a piece can almost always reach a space less than its movement distance away by choosing an alternative path. Thus, the 1-2-3 Stone has little advantage over the 3 Stone in terms of maneuverability and is in fact a liability because it is so vulnerable. The 4 Stone is easily the most powerful piece. It is the Zhadu equivalent of the Queen in Chess. The real strength of the 4

Stone lies in its ability to set up forks.

The presentation of the game is superb. All components are made of well-finished wood. The pieces of the two players are distinguished by the fact that one player's pieces have a heavy grain, while the other's have almost no grain. I enjoyed both the game itself and the beautiful equipment.

On the down side, a promised newsletter about the game did not materialize, and the website recently became unobtainable. I hope that these are temporary glitches due to the almost insurmountable obstacles facing an individual trying to produce and market a game alone. Hopefully the website will be back up soon, or an enquiry to the address below will elicit a response concerning game availability and price. – KH

NVZHN, PO Box 63, South Bound Brook, NJ 08880, USA
Website: http://www.nvzhn.com

Siesta

Designed by Guido Hoffman

Siesta is a colorful, pleasant game. The game components are all wooden. The equipment consists of a 12x12 board, 25 yellow pawn-shaped suns, 75 flat, black shadows, and 60 roofs in four sets of different colors. Siesta can be played by two to four players, each player taking a set of 15 roofs.

Each move, a player puts down three pieces in any combination of suns, shadows and his roofs. The object is to score points by creating *siestas*. A *siesta* is a horizontal or vertical line of pieces consisting of one or more suns, then one or more roofs, then one or more shadows. One imagines the sun casting a shadow over the roofs. The roofs in a siesta may be different colors.

On a turn a player scores one point for each shadow that is part of a siesta containing a roof of that player's color. Once a shadow is scored in a particular siesta, it cannot score again in that siesta in a later turn. However, a shadow may score in more than one siesta simultaneously, or it may score again in a later turn in a newly created siesta in a different direction. A player may add new shadows to an already-existing siesta and score for the new shadows. Also, shadows may score for more than one person if they belong to siestas containing roofs of different colors. Lastly, if a shadow simultaneously scores for a player in two of his siestas while not scoring for any of the other players, then the player gets a bonus of two points for a *double siesta*.

All of this is difficult to visualize without looking at the diagrams, and in fact even with the diagrams I found it quite difficult to get the rules absolutely straight. This is my one complaint about the game: that the rules are not very clear on a couple of points.

The game ends as soon as a player places either the last sun, or the last shadow, or the last of his roofs. At that time, the player with the highest score wins.

I do know whether the game has any deep strategy and tactics. On any move we tended to play to maximize our score, while reducing as far as possible opportunities for the opponent to score big double siestas. This does not mean that deep strategies are not there to be discovered, merely that they are not obvious. Playing Siesta we found to be a gentle, relaxing experience rather than a hard battle, and surely every gamer needs to play a game like that now and then.

We have tried the game with two people and four, and in both cases the game worked well. Perhaps I prefer it as a two-player game as with four people the board became very congested. Perhaps Siesta is a good game for three because it seems to me to be a game of taking one's opportunities where they arise rather than playing in an aggressive, cutthroat fashion. – KH

Rio Grande Games, 123 Main Street, Rio Grande NM 78901, USA; website: http://www.riograndegames.com
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Book Reviews

Medieval Games

Salaamallah the Corpulent (a.k.a. Jeffrey A. DeLuca)
(Third Edition, self-published, 1995)

This self-published spiral-bound book of 203 pages, distributed by Kadon Enterprises, contains about 250 historical games. Admittedly about 100 of them are physical activity games or sports, but that still leaves 150 board games. They are arranged in these categories: Chess, Medieval Three-in-a-Row Games, Capture Games, Asian War and Hunt Games, Capture by Interception Games, Mancala Games, Medieval Table Games, Renaissance Table Games, Race Games Other Than Tables, Tab Games, Rithmomachy, Dice Games, Spanish Dice Games, Other Renaissance Games, and Games Manqué

Many of the games will be familiar to readers of R. C. Bell, E. Faulkner, H. J. R. Murray, and others who put together collections of games. However, DeLuca has gathered together material from many of these sources to compile this useful and comprehensive collection in one volume.

The rules of the games seemed to me generally to be clear enough to allow one actually to play the games. Nevertheless, I dipped into the book to check more closely on the presentation of some games about which I have a little knowledge, and in some cases I did find some errors and omissions. In Korean Chess, for example, the author explains that the diagonals in the castle are significant in the Korean game, in contrast to Chinese Chess, but he fails to explain why. Then I think he uses Murray for his description of Chu Shogi (called "Tsui" Shogi here), which is well known to be an inadequate presentation of the game. At the end of this section he writes of the larger Shogi games, "No rules or descriptions of moves have survived, thank God." Many readers would disagree with both the scholarship and the sentiment.

The strength of the book lies in its encyclopedic inclusion of the simpler games rather than its accuracy of exposition of the more complex games. I found the sections on dice and table games to be interesting. And even with the more complex games there are sections that appear to be much better because the author seems to have made a special study of them. The section on Rithmomachy, for example, contains a useful chart explaining the differences between all five major versions of the game, with a recommendation for which variants work best. Overall, the book is a worthy addition to any gamer's collection. – KH

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Entropy

The Eternal Struggle of Order and Chaos

by David Pritchard

My dictionary takes eight lines to define the word 'entropy.' Stripped to its essentials, it means the state of permanent conflict in the universe between order and chaos. Entropy is a two-player strategy board game based loosely on this struggle and generally considered (by me, anyway) to be a modern classic. The game, with surely the largest theme ever conceived for a board game, was invented by Eric Solomon of Black Box fame. It was by first marketed on a 5x5 board by Skirrid International in 1977 in Britain, and subsequently in the USA as Vis-A-Vis by Selchow & Richter. It was produced in Germany by Franjos as Hyle. Entropy was awarded the rare 6 out of 6 rating by *Games & Puzzles* in 1981.

But that is just the start of the story because Eric soon realized that the 5x5 board did not do the game justice and introduced the 7x7 board with extra counters but with the rules unchanged—New Entropy. It is now abundantly clear that the 7x7 board is the ideal size and in retrospect it is surprising that this format was not alighted on in the first place, and perhaps even more surprising that companies were prepared to market the game in the smaller format. This new version, involving a quantum leap in strategy, is currently published in Germany by Franjos under the name Hyle 7.

As testimony to the appeal of the game, Entropy attracted as many entries at the Mind Sports Olympics as Poker. Poker is a game known to tens of millions, the rules in every card book. New Entropy has relied for its support mostly on personal recommendation or word of mouth.

Components

Board 7x7 squares, uncheckered; 49 counters, seven each of seven colors, usually Blue (B), Yellow (Y), Red (R), Green (G), Pink (P), Maroon (M), and Black (K); black velvet bag or similar.

The game

Entropy is a two-part game in which, as in Mastermind, the players change roles for the second game, the higher scorer being the winner.

One player is Order, whose aim is to form patterns, whilst the other player is Chaos, whose aim is to prevent this by striving for a random world. Patterns earn points for Order; Chaos does not score but instead tries to keep Order's score to the minimum.

Play

The game starts with the empty board and the counters in the bag, which is held by Chaos. A turn consists of Chaos drawing a counter unseen from the bag and placing it on any empty square. Order now has the option to slide one counter (not necessarily the one just placed) in one orthogonal direction over any number of empty squares to an unoccupied square. That is, moving one counter like a rook in Chess but without the right to capture. Only one counter may occupy a square.

Order, remember, is trying to create patterns. A pattern is any sequence of colors which, read horizontally or vertically (but never diagonally), is identical if viewed from either direction (left to right/right to left or up to down/down to up). For example, BB is a pattern, as is RGR. A pattern scores the number of counters it comprises—in the above examples, two and three points, respectively. However, all patterns within a pattern also score. An example: RGBGR scores 5 points and also 3 points for GBG, for a total of 8. Another example: RRRR scores 4 + 2x3 + 3x2 = 16. When the last counter is placed, and the board full, the lines are scored one at a time both horizontally and vertically, to reach a combined total for Order. The players then reverse roles.

Strategy

The variety of play is virtually infinite: each game is unique. An average score is about 75; 100 is good; 55 is poor.

Sound play for Order in the early stages is to move pieces to the side of the board. Flexibility is important, and the aim is to go for high-scoring combinations rather than a lot of low-scoring ones. A common beginner's error is to occupy the square between identical colors (for example, moving an R between two G's to score 3 points). This is a waste of a move since any color in the space will ultimately score. An ideal, difficult to achieve, is to keep a single or at most two vacant board areas of whatever shape. Several such areas or holes (individual vacant squares) make Chaos's task easier—awkward colors can be neatly tucked away. As the game progresses, Order can enhance his scoring prospects by taking account of the colors remaining and therefore the probability or otherwise of a particular color being drawn next.

I have noticed that most players have a tendency to score more on the horizontal than the vertical lines. This is natural, but developing a two-way mentality will lead to higher scores.

There is little to say about the strategy Chaos should adopt. Obviously, he should worry about allowing high-scoring patterns, in particular perhaps allowing one color to dominate in any particular area.

If, as so often happens, Order sees that he can score well with an L-shaped move, requiring two turns to achieve, Chaos can usually block the maneuver successfully.

Comment

Chance clearly plays quite a large part in Entropy. In a tournament game recently I saw five matching colors amongst the first seven out of the bag, permitting Order to score heavily. I wonder if, for tournament play, one of each color should be played out first before a draw is made from the bag?

Scoring combinations

There are 30 scoring combinations, listed below. Distinct letters stand for distinct colors. Notice that a given number of the same color in a pattern easily outscores a pattern with a similar number of mixed colors. ■

AA	2	ABCCBA	12	ABACABA	21
ABA	3	AABBAA	16	ABCBCBA	21
AAA	7	ABAABA	18	AABBBAA	23
ABBA	6	ABBBBA	22	AABABAA	25
AAAA	16	AAAAAA	50	ABAAABA	25
ABCBA	8	ABCACBA	15	ABABABA	27
ABBBA	12	ABCDCBA	15	ABBABBA	27
AABAA	12	ABBCBBA	19	AAABAAA	29
ABABA	14	ABCCCBA	19	ABBBBBA	37
AAAAA	30	AABCBAA	19	AAAAAAA	77

Entropy scoring combinations

Entropy Tactics

by Eric Solomon

Opening

It is generally accepted that Order must try to maintain mobility in the early stages. If he leaves pieces in the middle of the board he provides more obstructions that Chaos can exploit to prevent slides that complete, or threaten, scoring sequences. Notwithstanding this eminently sensible approach, several players, including myself, have attempted openings that aim to produce a diagonal of differently colored pieces. There is fair mobility in the two halves of the board with options to get new pieces onto rows or columns containing pieces of a matching color. However, openings in which Order sweeps each new piece to the edge of the board are definitely superior. So, most games start with Chaos putting the first piece on the central cell, then this is slid to an edge. If the next piece drawn is of a different color, that too is placed on the center square, and in turn is slid to another edge of the board, and so for the first four turns. If Chaos draws a piece of a repeated color he might place it so that no slide would place it an even number of cells away from a piece of the same color. Sequences of odd numbers of pieces tend, in practice, to score more heavily in 'value per piece' terms than those with an even number of pieces. And of course, a pattern such as R_R (underline stands for a vacant cell) guarantees at least 3 points, and possibly 7 points. This is known as a 'safe-3.'

It does not follow that Chaos will always play to prevent a score in the early stages. Suppose R is the first piece drawn, then slid to an edge. If R is again drawn, Chaos might again put it on the center square, and if Order slides it next to the first R, he has scored 2 points (potentially), but at the expense of reducing his mobility. A third R piece placed on the center square could be slid to produce three adjacent R pieces scoring 7 (potentially), but this would certainly not compensate for Chaos's much increased ability to hide new pieces in awkward places.

Drawing repeated colors in the opening can lead to comical results. I remember a tournament game in which Chaos drew four B pieces in succession at the start of a round. Later, Order complained bitterly that all he got out of that was a miserable 2 points! In fact, nothing better could be expected from the B pieces alone, and the complaint was unfounded. No doubt the B pieces were constituents of other scoring sequences later in the game.

Nature of the game

Entropy is not a game for the long-term strategist. Apart from the mechanical ability quickly to count the pieces of any color on the board, and hence know the probability that any particular color will emerge next from Chaos's bag, it is predominantly a game for the quick-thinking tactician. In the mid-game there are around 25 vacant cells in which Chaos may place any one of six or seven colors. And after the placement Order typically has the option of around 60 possible slides. Thus, in game-theory jargon, the 'fan-out factor' is very large.

Reading the Order player's mind is something that Chaos must attempt. This becomes increasingly relevant when opponents have previously met across the board. Every player has his own style and favored patterns. Some like to map out scoring sequences from the outside, say, starting with similar colors well separated. Others like to work from the inside outwards, perhaps basing many patterns on the safe-3 formation.

As in most positional games, there is the potential for 'fork' threats. In Entropy this entails sliding a piece to a cell from which there are two, or more, further single slides that would produce a scoring sequence. Chaos can block at most one of these and, if he draws the wrong color, might block neither.

In the end game there are times when Order should gamble on a particular color being drawn. This is most relevant in the second round when, knowing that he must add a certain number of points to win, and when Chaos has a very limited number of cells available to him, Order goes all out to produce a killer pattern.

Considerations during play

The figure below shows a typical position towards the end of a round. The letters at the bottom and the numbers on the left are for identifying cells. The bold numbers on the right and at the top are the current scores for the respective rows and columns. But note that such scores are temporary in general, they are simply a guide—a piece might well be moved out of one scoring pattern to threaten or complete another. The safe-3 at g1-g3 is not regarded as contributing to the current score. It may, indeed, end up scoring 7, or it might be destroyed.

	8	**2**	**2**	**6**	**6**	**0**	**0**	
7	B	K	P	Y	P	Y	P	**14**
6	B	G	G	G	B			**12**
5	P	P				B		**2**
4	M	Y	Y	M	Y	R		**9**
3	M	R	G	B	G		M	**3**
2	P	R	G	M	Y			**0**
1	R	K	P	B	G	R	M	**0**
	a	b	c	d	e	f	g	

Entropy endgame

Let us suppose that Order is about to take his turn. As there are seven pieces of each color he knows that Chaos's bag contains one Y, one B, one M, two R's, and five K's. This sort of imbalance is more commonplace than might be supposed, and in any case will illustrate a point here. To Order, those five K's offer the enticing prospect of many profitable patterns, the best of which is KKKKK, which would score 30. In fact, Chaos would have to play very badly to allow that.

Note that there are three distinct regions of orthogonally connected vacant cells, commonly referred to as 'holes.' Ideally Order should aim to produce just one hole at this stage of the round, to give new pieces the greatest number of rearrangement options. But this is rarely achievable in actual play. So, in this instance, Order would seriously consider Bf5f6, Bf5c5, Rf4g4, or Rf4f2.

Any of these will reduce the number of holes to two. There is an apparently attractive move Rf4f3, which completes the pattern MRGBGRM in row 3. That would score an impressive 15 points (although he already has 3 of these points, of course), but Order might expect to do better with the K's due to be drawn later, provided Chaos is not too awkward in placing the other colors. That move would still leave three holes, one of which is an undesirable U-shape that has a 'diameter' of 3. That is, it contains a cell that is three slides removed from another cell in the same hole. This concept of diameter is quite important. A convex hole, or an L- or T-shaped concave hole, has a diameter of 2.

There are in fact 34 possible moves in the position illustrated. The great majority can be rejected almost instantly, just as a Chess player can quickly reject moves such as returning a Knight to its starting square during the opening. In the Entropy mid-game there may be as many as a hundred possible moves, and the speed of the rejection process is critical. This may be where the main difference between good and brilliant players lies.

Let us return to Order's move in the position shown. If he were a novice, he might think about Gc6c5. His object would be to threaten the pattern PGGYGGP in the c-column. That would score 19, but at the expense of losing 4 points from the 12-point pattern in the 6-row. What would be left in row 6 would be safe-8, comprising BG_GB. But there are no G's in the bag, so Chaos would definitely be able to block the c-column pattern by playing anything at c6. Another move, which would augment the total score by 8, is Bf5d5, but this would leave an inviting single-cell hole at c5, in which Chaos might be able to hide one of the K's. Bf5c5 would almost guarantee that all the K's could be moved into columns f and g.

Obviously the best move depends on the order in which Chaos draws the remaining 10 pieces. But there are 15,120 distinguishable sequences in which these can be drawn and, of course, many sequences of cells in which Chaos could place them. Exhaustive analysis is out of the question except, perhaps, with the aid of a computer. I employed a 'Monte Carlo' approach to play out the final turns, until my patience ran out! It suggested that best move from the position illustrated was, after all, to grab the points available in column d from the pattern BMBMB. The K's could usually be relied upon to contribute at least 10 points.

	8	**2**	**2**	**14**	**6**	**22**	**3**	
7	**B**	**K**	**P**	**Y**	**P**	**Y**	**P**	**14**
6	**B**	**G**	**G**	**G**	**B**	**K**	**K**	**14**
5	**P**	**P**	**K**	**B**	**M**	**R**	**Y**	**2**
4	**M**	**Y**	**Y**	**M**	**Y**	**K**	**B**	**9**
3	**M**	**R**	**G**	**B**	**G**	**R**	**M**	**15**
2	**P**	**R**	**G**	**M**	**Y**	**K**	**R**	**0**
1	**R**	**K**	**P**	**B**	**G**	**R**	**M**	**0**
	a	b	c	d	e	f	g	

Completed round of Entropy

The figure above shows the completion of the round that yielded the best score for Order. It arrived in the following way:
1....Bf5d5 *(As mentioned above, 8 points are added in the d-column.)* **2.Kf3** *(Chaos tries to block creation of the large pattern in row 3.)* **Kf3f2** *(Order hopes for another chance.)* **3.Re5** (Tough! Chaos cannot block.) **Rf4f3** *(Scoring 15 in row 3, plus 3 in column f.)* **4.Kc5** (Hiding a K.) **Re5f5** *(Hoping he can get a K to f4 later.)* **5.Bf4** *(Not what Order has ordered!)* **Bf4g4** *(Get rid of it.)* **6.Yg5** *(Might be better at f4, but would add 7 points in row 4.)* **Pass, 7.Me5** *(A mistake. Chaos miscalculated the result of Mf4.)* **Rf5f4** *(If Rg2 follows, Order can undo this move.)* **8.Rg2** *(It happened. Chaos feels he is hiding the R.)* **Rf4f5** *(Undoes his last move. Only K's remain in the bag!)* **9.Kg6** *(One of three choices, all equally bad!)* **Pass, 10.Kf6 Pass, 11.Kf4.**

Scoring
The total score at the end of the round shown above is 111, which is pretty good. But what procedure did the players follow in scoring the final rows and columns? Most players, myself included, like to count the 2's, then the 3's, and so on. So, for example, when scoring row 6, one of the players would say, "2 and 2 and 2 is 6, and 3 is 9, and 5 is 14," pointing at the ends of each pattern as he goes. Scoring should be stated aloud so that the opponent can check it. *(Like scoring at Cribbage. – Ed.)* Nearly all players do this. There is a table of symmetric patterns. In my opinion it takes longer to identify a pattern in the table than to score in a progressive way. But I have seen a few people use the table for the longer patterns.

Conclusion
The foregoing might have suggested that chance plays large part in the outcome of a game. To judge from the results in the Mind Sports Olympiads, this is not the case. Each year attracts most of the competitors from the previous years, and the same set of people occupy the top places in general. As might be expected, some of these are professional computer programmers who tend to have capacious short-term memories. The medal winners might change were Entropy again to become available on the English-speaking market, and so give rise to a larger body of players.

I suppose that the game that is most similar to Entropy in the way that it balances skill and chance is Backgammon. Strong Backgammon players tend to win despite the dice they throw. Another aspect that has emerged from the Olympiads is that the standard has steadily increased. Without access to definitive statistics I recall that scores in the first year rarely exceeded 100, but after five of these events scores of around 110 are quite common. Of course, these are round scores for the Order player, but bear in mind that the same players are acting as Chaos equally often. Incidentally, the Olympiad games are played under tournament conditions, with the use of Chess clocks to limit each player's time to 15 minutes per round—almost 'lightning Entropy' in fact! ■

Interview with Eric Solomon
Creator of Entropy

Eric Solomon is the creator of a number of games, including Black Box, Alaska, Balloon Rennen, Thoughtwave, Moove, Spellmaker, Sigma File, Billabong and, of course, Entropy. In this interview with Clark Rodeffer, Eric gives us some insight into the process of devising new games as well as some background about the board game business in general.

AG: What got you interested in gaming and game design?
ES: As a child I enjoyed games such as Monopoly and Dover Patrol, and first met Chess through B. H. Wood, with whom I also played cricket. When I started my first job I lived in a hostel where Chess and Mahjong were popular. Later, at university, I played no board games at all, apart from once playing board number 11 for

Berkshire in a county match. I lost.

On moving to London I joined a social club that had a board games section. I had always been interested in old sailing ships, so I devised a Napoleonic sea battle game, which attracted a lot of players. Later, I wrote an article describing Fighting Sail for *Games & Puzzles* magazine, but it never even occurred to me to market the game.

In my work I sometimes had to visit the War Office in Whitehall. One night in 1965 I had a vivid nightmare in which I was on my way to the War Office with my briefcase of vital papers (upon which, no doubt, the future of Western civilization depended), when I was approached by someone who offered to carry my bag for a shilling. Like a good security man, I readily parted with my bag of secrets and paid my shilling. But when I tried to recover my bag, the courier handed it to someone else for a further monetary consideration. The dream ended with my chasing up and down Whitehall trying to buy back my own bag from a variety of shady characters. When I awoke I realized that all this was the basis for a board game, and War Office Papers was born. The prototype was much played at the board games club, and after some eight years was shown to Tom Kremer of 7-Towns, who quickly renamed it The Sigma File. That was my first marketed game, and it is still sold in Germany under the name Casablanca. Having had success with the first game shown to a manufacturer, I thought I should try my luck with some others.

AG: With which of your games are you most pleased?

ES: That is rather hard to answer. From the point of view of elegance, by which I really mean simplicity allied to playability, I think Entropy is the best. From the point of view of tension, I suppose Sigma File comes out on top. And from the point of view of sales, the winner is Black Box, though Alaska came close.

AG: Are Hyle and Vis-A-Vis the same game as Entropy?

ES: Vis-A-Vis and Hyle are the same game as Entropy, which I regard as its proper name. Entropy started as a game played with 25 pieces in 5 colors on a 5x5 board. As such it, was marketed by Skirrid International in the UK (1977), then shortly afterwards as Vis-A-Vis in the USA by Selchow & Richter in 1981. Around 1990 the game was produced by Franjos in Germany under the name Hyle. By then the English editions had been discontinued. Around 1993 it became clear that, although the 5x5 version was fine for children, adults needed a more demanding game, and I began to agitate for a 7x7 production. This appeared as Hyle 7 in 2000, just in time for the fourth Mind Sports Olympiad. The Olympiad entry has always been high, but game companies understandably resist marketing a game that involves nothing more than simple counters and a small squared board. They want a game that looks good in TV advertising.

AG: Are there any of your games that deserve more attention than they have received?

ES: Spellmaker had a beautiful system for casting spells covering transportation, transmutation, materialization, disappearance, and nullification. The trouble was that the American company that produced it did not understand the Celtic feel I wanted the game to have, and neither did they honor their agreement. I also discovered that the German companies disapproved of wizardry!

Another disappointing game was Balloon Rennen (Balloon Race). The game company made the mistake of introducing 3D balloons that would not stack at a single point, like my original disc balloons. While the artwork was magnificent, in my view the game failed for purely ergonomic reasons.

AG: What were the thought processes that went into the development of Entropy?

ES: There were very few really. Like every games inventor seeking inspiration, I usually start by considering what processes give rise to competition, a conflict of interests, a divergence of objectives. As a result of thinking about problems in thermodynamics it occurred to me that a battle between order and disorder could be the basis of a game. And the simplest sort of recognizable order on a regular lattice seems to be mirror symmetry. Of course, I wanted to reward large patterns more heavily than small ones, and scoring all the embedded sub-patterns seemed an obvious way to achieve this. The only aspect of Entropy that required hard thought was whether to allow Chaos openly to select the color of the next piece, or to make him draw the piece at random from a bag. The blind draw produces a much more exciting game and demands greater skill on the part of Chaos.

AG: Are scoring combinations of 5 or 6 pieces significantly more difficult to form than combinations of only 3 pieces?

ES: Most certainly. A good player will usually get one or two 6-piece patterns, and possibly a 7-piece pattern. I have not done detailed statistics, but 3-piece patterns usually make a very significant contribution.

AG: What kinds of compromises are involved in progressing from an idea to a prototype to a published title? Can both author and publisher avoid argumentative pitfalls?

ES: Manufacturers have salaries to pay, equipment to buy, and many other drains on capital. They employ people who are expected to produce results, and there is pressure on such people to make at least some design decisions. Sometimes they are bad decisions, but at least they can show that they have done something. As inventors are aware, that something quite often includes a change of name, usually justified by reference to some mystical market awareness. Argument is fruitless; those responsible simply claim that they know their market better than the inventor. But perhaps I am not quite as cynical as it might appear. I could point to some manufacturers' amendments that have enhanced the game originally submitted to them.

AG: Such as?

ES: When I showed my first game (eventually Sigma File) to Tom Kremer it was a two-player game. I was green, and didn't appreciate the value of making games multi-player if at all possible, something Tom insisted upon. Alaska was further developed by Ravensburger, who added a number of interesting contingency cards. It all depends upon whether or not the publisher employs perceptive staff who understand games.

AG: From the perspective of an inventor, what are the most important factors in game design? How about from the perspective of a publisher?

ES: The inventor suggests what he believes is best through the medium of his prototype and hopes that not too much will be changed. And he must try to minimize basic production costs if he wants his game to have a fair chance of reaching the shops. A possible mistake is to overlook the fact that complex pieces are expensive to produce.

As regards choice of colors, I aim for pastel shades on a board with bold colors for the pieces. For me, the reverse does not work. One cannot be dogmatic about aesthetic matters, but a common mistake is to use too many different colors. This can make a game difficult to play and adds to production costs if conventional printing techniques are used. Of course, electronic printing has made the latter a minor obstacle where boards, if not pieces, are concerned.

On the matter of important factors in game design one could write a book. Briefly, I believe a true inventor should aim for novelty and playability regardless of what any publisher says he

wants. Consequently, he must be prepared to accept frequent rejection. This might be a controversial view. In general, my approach is to find a mechanism or a principle of interest, then to look for a theme. If no theme presents itself, the game remains abstract. But it seems there are some successful inventors who canvas publisher's requirements, which incidentally are never for abstract games. These inventors, if that is the right word, want to know what forthcoming television series will provide a market for a derivative game. They fit standard game mechanics to the theme, and another potboiler hits the shelves. I suppose they provide transitory pleasure for TV addicts, and they reap the financial rewards. But this is not the route I wish to take.

If one excludes word games, card games, and some specialist war games, I think it is significant that the most durable games are nearly all abstract. Judging from its incidence on the Internet, Black Box is one that will probably last. Among the few non-abstract games to compete in durability are Monopoly and Cluedo.

A prominent UK game company once ranked (in a private meeting) what they regarded as desirable qualities in their products. By desirable they naturally meant saleable. I cannot remember the full list, but topicality came first and playability came about seventh. Durability (and they did not mean resistance to wear and tear) came about tenth. For most game companies the annual new range is all-important and, on the whole, that is a good thing for inventors.

AG: Computerized versions of Black Box are everywhere. I suppose that has been a mixed blessing—a puzzle game that you designed is widely popular, but hardly anyone recognizes you as its inventor, let alone asks permission or sends a royalty check for its use.

ES: If Black Box were a new game I would be less than pleased, but time dulls the distaste. I just derive satisfaction from the thought that the game may have given pleasure to some, and that it might have sparked some child's interest in the sort of problem faced by crystallographers, researchers into nuclear structure, and medical scientists. That is, the problem of deducing structure by indirect methods.

AG: Are you working on any new projects?

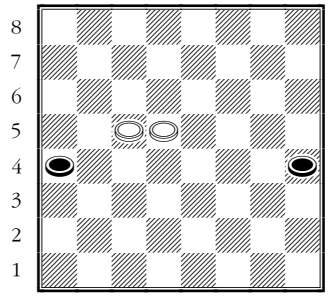
ES: I have just sent two new games to manufacturers in Germany, and a third is already being considered by another German company. The last is quite novel, but so very abstract that I suspect nobody will want it. You will appreciate that it would not be right to reveal details before publication, if that happens. David Parlett once remarked that discussion of new projects amongst inventors was an infallible recipe for anticlimax. Currently, I am waiting for the next idea, which may of course never come. Meanwhile, I am slowly poisoning myself by making some Pentomino sets in casting resin!

AG: I'm glad that you've had some game design successes in the past, and hopefully this interview will encourage Abstract Games *magazine readers to seek out and play Entropy, Black Box and your other games. But I'm also glad you're still designing new games.*

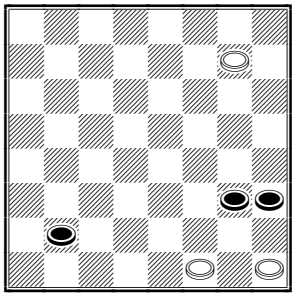
ES: Many thanks, and I have enjoyed trying to answer your questions. ■

The 7x7 version of Entropy is published by Franjos as Hyle 7:
Spieleverlag, Franz-Josef Herbst, Zum Brinkhof 22, 33165 Lichtenau-Henglarn, Germany
Website: http://www.franjos.de/franjose.htm
E-mail: franjos@franjos.de

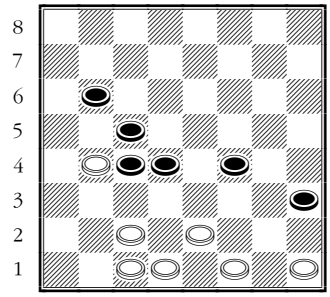
Dameo Problems



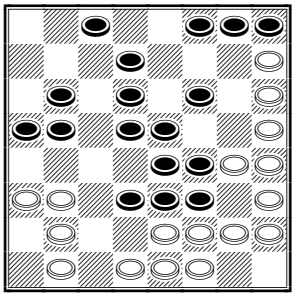
Problem 1



Problem 2



Problem 3



Problem 4
Coup tout les coups.

Problem 2 is by Christian Freeling, the others by Leo Springer. White to play and win in all. Solutions are on page 29.

Phalanx

by Joe Celko

Whitman Publishing, a subdivision of Western Publishing Company, is best known as the creator of the "Big Little Books," "Little Golden Books," "Big Big Books," and other series of juvenile literature. In 1918 Whitman received its first printing order from a now defunct chain of five-and-dime stores, S. S. Kressage Company.

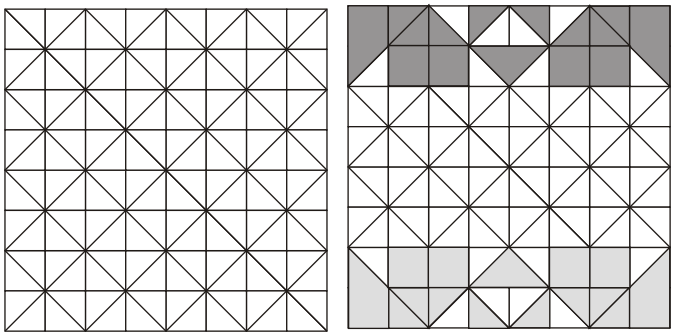
The original order was for dozens of children's books, but someone at Whitman mistakenly changed "dozen" to "gross," so the titles were overprinted. The volume was far too much for S. S. Kressage to use, so Sam Lowe of Western Publishing persuaded the F. W. Woolworth Company and other retail chain stores to try carrying the books on display on a year-round basis—at the time, children's books were primarily sold as Christmas items.

The response was good. Western subsequently developed a line of low-priced juvenile books and created a division called the Whitman Publishing Company, with Sam Lowe as president.

Whitman had connections to chain stores, so its production began to extend beyond books. A box department was added to the firm in the early 1920's, bringing about the development of boxed games and jigsaw puzzles.

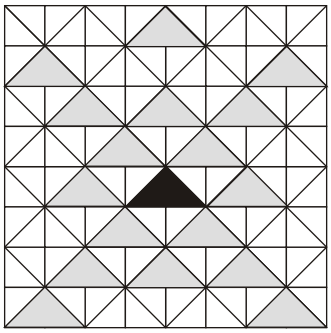
Most of Whitman's boxed games were not particularly original. They produced children's card games such as Old Maid, Bingo sets, Parchisi sets, and games based on popular movies or television shows. One exception was the game Phalanx, published in 1965. The production values were mediocre. The board was a simple, thin square of cardboard, about the usual size of a boxed board game. The pieces were thicker cardboard punch-outs in red and green. On each piece was a drawing of a Classical Greek weapon and the name of the piece.

The board is a grid of 8 by 8 squares, like a Chess board, but without colors and with the addition of diagonal lines cutting the squares into isosceles right-angled triangles.

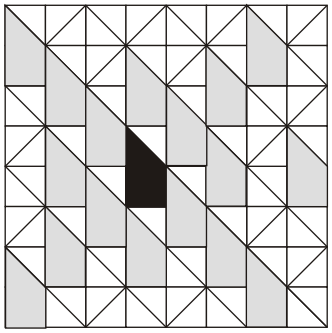


Phalanx board and opening setup

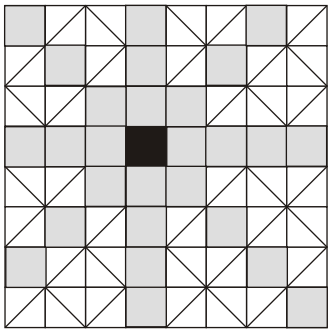
The pieces are shapes based on the triangles that make up the grid and named after units in the Greek army. The game begins with each set of pieces lined up on the two back rows of the grid in a fixed, symmetric arrangement. Note that pieces of the same type may have different orientations.



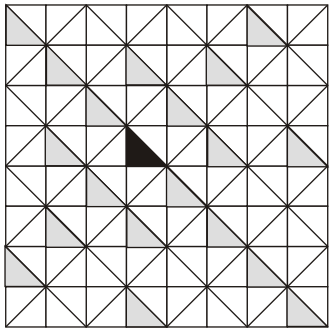
Syntagma movement



Hoplite movement



Archer movement



Auxiliary movement

Syntagma: Each player has one (20 points).
Hoplite: Each player has two (15 points each).
Archer: Each player has four (10 points each).
Auxiliary: Each player has eight (5 points each).

The players take turns to move one of their pieces. Green moves first. A piece slides across the grid, diagonally or orthogonally, and has to stop inside a vacant outline of its shape. A piece always maintains its initial orientation. The moving piece cannot pass through or jump over intervening pieces of either color.

If at the end of a player's turn two or more sides of an enemy piece are completely bordered by friendly pieces, then the enemy piece is captured and removed from the board. It is possible for multiple captures to be made in one turn.

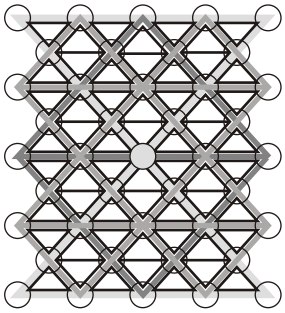
The goal of the game is to reduce your opponent to one piece, so that he cannot make any captures. If the game deadlocks or the players wish to set a time limit for play, then the winner is determined by the point value of captured pieces.

The instructions are given on a two-color, single sheet of paper. Nobody is given credit as the inventor of the game, and there are no suggested openings or strategy. The only observation I can make about openings is that you need to get the Auxiliaries out as soon as possible. Their small size lets them take more positions and move more easily on the initially crowded board. The larger pieces become more valuable as the board clears.

It is unfortunate that a better edition of the game was not published. Plastic pieces and a heavier board would have made a much more attractive set. Today, laser-cut colored transparent plastic could be used to make a very precise set.

Phalanx was, as far as I know, the only original game that Whitman Publishing produced in its history. It is also the only game I know that uses this geometric "jigsaw puzzle" form of moves and captures.

The Whitman Publishing Company is gone, but their parent company, Western, continues to do well with popular products licensed from the Children's Television Workshop, Disney, Hallmark, Mattel, Sesame Street, Warner Brothers, and others. ■



A game by Zoltan Bartok

GLE'X

THE GAME OF TRIANGLES

by L. Lynn Smith

In Gle'x Zoltan Bartok has created one of the most fascinating games this writer has encountered in a long time. At first glance, the rules seemed very complicated, but after only a few games its logic falls easily into place. In this article I will give the rules and some sample games. On the back cover of this magazine there is a Gle'x board ready to play—all that is needed are some small tokens, such as coins, to get started. It is probably a good idea to make a photocopy of the rules to use as a reference when first learning the game.

The Origin of Gle'x

One Friday night in March 1998, Zoltan felt an urge to be creative. Armed with paper, pencil, scotch tape, a ruler, and a pack of highlighters, he began drawing lines. By the time he went to bed he thought he had something that could be used as a game board. Except for a minor alteration, the deletion of a purple line on the central rank, this inspiration has remained unchanged.

During breakfast Zoltan made up his mind to make a game from this drawing. All Saturday, he searched for ideas that would work. He decided it would be a two-player game, and each player would have eight tokens. He blames Chess for these decisions. That was as far as he got by the evening. He went to bed, but shortly snapped awake: "Triangles! It has to be a game of TRIANGLES!" The rest of that night he dreamed of triangles.

That Sunday, it did not take long to arrive at the concept of forming triangles during play. His first attempt was to assign values to these various triangles. That week, he worked out a value system. Blue triangles were considered the most valuable, followed by Yellow (then Orange), Large Purple, Small Purple, and finally Red triangles. It was thought that the winner would be the first player to reach a required number of points.

He took his original drawing to a photocopy shop, where a talented assistant helped Zoltan to turn his draft into a professional-looking playing field. At first the game was called Trex: '**Tr**iangle **ex**pertise.' But because this sounded similar to the name of a local light rail system, he eventually changed it to Gle'x: 'trian**Gle** **ex**pertise.'

With a dozen newly printed playing fields and copies of the rules, Zoltan sent out fliers to the local Chess players inviting them to play a tournament. Six players showed up. Although the game worked Zoltan could tell that the players were not excited. After the disappointment of the event he decided to change the rules. He knew that it needed to be much more challenging, and he discarded the simplistic value system.

The new rules had the pieces march to the other end of the field to win. Laszlo Bekefi, a friend and FIDE Chess Master, helped Zoltan with the early play testing. With their first game he offered a draw. Zoltan was puzzled until it was explained that all that was necessary was for the opponent to line up his pieces near the center and not allow access to the other side of the field.

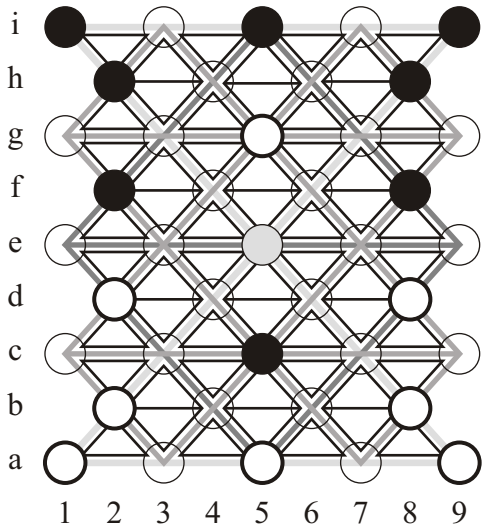
Somewhat embarrassed, Zoltan returned home and began searching for a way to break through an opponent's blockade. This was the origin of the Hot Zones and the Rules of the Center. During this time Zoltan also created the Bonus Moves, which lead to the restriction of a piece to one move within two turns.

It took weeks to harmonize all these new rules. The answers often arrived in Zoltan's dreams. There were nights when he would wake several times, grab a note pad, and quickly jot down these inspirations. Once again, he presented Gle'x to Laszlo, who joked about what a 'jungle' the rules were. Nevertheless, he quickly learned them. The most important thing was that he enjoyed the game. Soon, to Zoltan's surprise, Laszlo managed to achieve a win. Laszlo remarked, "A master in Chess is guaranteed to be a master in Gle'x as well."

This game is definitely not formulaic. There is no one best strategy, and each player will have a different approach to the game. One might race for the goal lines or concentrate on capturing, and another might simply pin your pieces. All in all, a great game that will challenge even the most expert gamer.

RULES

Gle'x is a game for two players, White and Black. The playing field, shown on the back cover of this magazine, consists of 41 cells in an array of triangles. All that is needed in addition to play the game are eight light-colored tokens for White and eight darker tokens for Black. The opening setup is shown below.



Gle'x opening setup

The entire game is founded on colored *triangles*:

- 56 *red triangles*: e.g. a1-a3-b2.
- 8 *small purple triangles*: e.g. c1-c5-a3.
- 2 *large purple triangles*: c1-c9-g5 and g1-g9-c5.
- 2 *yellow triangles*: e1-e9-a5 and e1-e9-i5.
- 2 *blue triangles*: a1-a9-e5 and i1-i9-e5.

Beginning with White, each player takes alternating turns. Each turn may consist of two phases, a mandatory *normal* move, and a *bonus* move that is conditional and optional. If a player forms a triangle during a normal move, he is entitled to a bonus move.

Normal Move
The normal move consists of moving one token in any one of six directions. Along the diagonal lines and the odd ranks (*a*, *c*, *e*, *g*, and *i*), it may slide in a straight line through any number of vacant cells. Along even ranks (*b*, *d*, *f*, and *h*), it may be moved only to an adjacent vacant cell. (For movement exceptions see 'Rules of the Center' and 'Play in the Hot Zone.')

A moved piece can neither move again during that turn nor in the player's next turn. For example, if a piece is moved in the normal move phase of White's first turn, that particular piece cannot move again until White's third turn. This will be known as the *move-once-in-two-turns restriction.* (There are exceptions to this rule under 'Play in the Hot Zone.')

Bonus Move
The second phase of each player's turn is the *bonus move*. The bonus move is optional. The ability to make a bonus move is determined by the formation of particular triangles. These triangles will be described in 'Forming Triangles.' Only triangles formed by the piece moved during the player's normal move are considered for that particular turn. As with normal moves, bonus moves are made any number of cells diagonally or along odd ranks, and just one cell along even ranks. Bonus moves, however, may also involve jumping or capturing.

When making bonus moves, the player must still observe the move-once-in-two-turns-restriction. Thus, neither the piece moved during the player's normal move nor any piece moved in the player's previous normal move or bonus move may be moved. (Again, for exceptions to the move-once-in-two-turns restriction see 'Play in the Hot Zone.')

Forming Triangles
Valid triangles are formed when a player's pieces occupy all three vertices of the triangle. The triangle is only considered formed when the third piece moves into it. It is possible to form two triangles with one move, a red triangle and a triangle of another color. The player can choose which triangle to apply during the bonus move. Pieces located in cells along the sides of the triangle are not a consideration in its formation.

Red triangle
When a player forms a red triangle, another legal normal move may be performed as a bonus move by one of the pieces making up this particular red triangle.

Small purple triangle
When a player forms a small purple triangle, a jump of one opponent's piece into an unoccupied cell may be performed as a bonus move by one of the pieces forming this particular small purple triangle. This jump must be along a direct line of adjacent cells. The opponent's piece need not be adjacent, and the destination cell can be any of the following cells.

Large purple triangle
When a player forms a large purple triangle, a jump of one or two opponent's piece(s) into an unoccupied cell may be performed as a bonus move by one of the pieces forming this particular large purple triangle. This jump must be along a direct line of adjacent cells. The opponent's piece(s) need not be adjacent to the moving piece, and the destination cell can be any of the following cells.

Purple triangle
When a player forms any purple triangle, either small or large, a capture of one opponent's piece on the farthest rank (*a* for Black, *i* for White) may be performed as a bonus move by a piece located on the same rank. The capturing piece need not be one that formed the purple triangle. The opponent's piece need not be adjacent, but any cell between must be unoccupied. This capture bonus move may be selected instead of the appropriate jumping bonus move associated with the purple triangle.

Yellow triangle
When a player forms a yellow triangle, a capture of one opponent's piece may be performed as a bonus move by one of the pieces that forms this particular yellow triangle. The opponent's piece need not be adjacent, except when capturing along an even rank, but any cell between must be unoccupied. (For exceptions to the unoccupied cell rule see 'Rules of the Center.')

Blue triangle
When a player forms a blue triangle a capture of one opponent's piece may be performed as a bonus move by one of the pieces that forms this particular blue triangle. The opponent's piece need not be adjacent, except when capturing along an even rank, but any cell between must be unoccupied. Exception: If the formation of the blue triangle is the result of a capture move to the center (see 'Rules of the Center'), this bonus move is not permitted.

Rules of the Center
At the start of a game a player cannot move onto or move through or jump over the e5 *center* cell with either a normal move or any bonus move. (An exception is when the opponent's play forces a piece to move into or over the center—see 'Play in the Hot Zone.') Once a player has formed a small or large purple triangle he gains the *center privilege*. Thereafter, the player may (1) move onto or through a vacant center, (2) capture an opponent's piece on the center, or (3) jump over an opponent's piece occupying the center.

Before a player obtains center privilege an enemy piece on the center may not be jumped or moved onto even with a bonus move. After a player obtains the center privilege it is not necessary to obtain the appropriate bonus move to jump or capture an opponent's piece on the center. But once the center privilege has been obtained an enemy piece on the center is jumped or moved onto as an integral part of the appropriate bonus move, rather than in addition to it. (For example, a situation can never arise in which three enemy pieces are jumped, even with a large purple triangle bonus move when one of the enemy pieces is on the center.)

A purple triangle has only to be formed once during the game to gain the center privilege. A purple triangle formed as the result of a player's bonus move does not count. As a result of play in the hot zone, a player may form a purple triangle for his opponent. This purple triangle grants subsequent center privileges to the opponent (although it may not be used by the opponent for a bonus move). When a player forms a purple triangle for the first time, he gains the center privilege whether or not he subsequently makes the purple triangle's optional bonus move. However, if a purple triangle is formed at the same time as a red triangle, the player must either pass the bonus move entirely or use the purple triangle's bonus move to gain the center privilege—if the red triangle's bonus move is used the player does not gain the center privilege.

Play in the Hot Zone

The *hot zone* is made up of the four cells diagonally adjacent to the center cell. These are the d4, d6, f4, and f6 cells. A player may, with a normal move or non-capture bonus move, exchange positions with an opponent's piece that occupies one of the cells of the hot zone. The player's piece is the *displacer*, and the opponent's piece is the *target*. The displacer moves to the cell occupied by the target, according to the usual movement rules along the lines of the board; the target is then switched to the cell occupied by the displacer at the start of the move. (A hot zone move may be combined with purple triangle or center privilege jumping moves, so that one or two enemy pieces may be jumped before the displacer reaches the target.)

The player of the displacer may neither displace the target again during that turn, nor during the player's next turn. During the opponent's next turn, the displacer can only be removed from the hot zone by a capture with the bonus move of a blue triangle. Also, the opponent cannot move the target during that turn. The displacer is not subject to the move-once-in-two-turns restriction by this move. The piece may continue to perform any bonus move or subsequent normal move, including displacement.

Winning the Game

There are three possible win scenarios:

1. *Goal win* – The player moves all pieces, four or more, into the two farthest ranks (*a* and *b* for Black, *h* and *i* for White).
2. *Capture win* – The player is able to reduce the opponent's forces to three.
3. *Stalemate win* – The player is able to prevent the opponent from performing a legal normal move.

Notation

= displacement, **:** capture, + jump one piece, ++ jump two pieces, += jump one piece and displacement, ++= jump two pieces and displacement, **+:** jump one piece and capture, **BT** Blue Triangle, **LPT** Large Purple Triangle, **RT** Red Triangle, **SPT** Small Purple Triangle, **YT** Yellow Triangle, / bonus move.

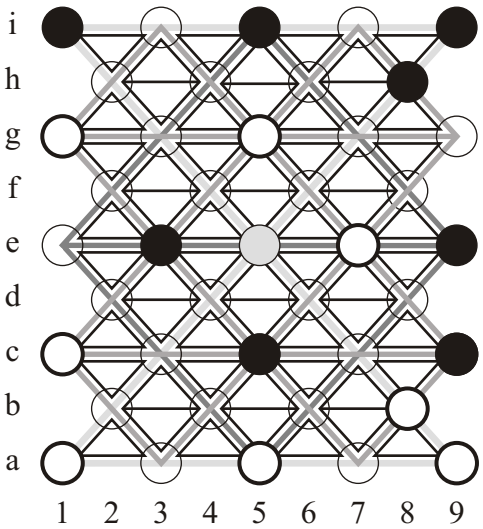
Sample Games

The following are sample games with commentaries by Zoltan Bartok:

1.b2c1 *(White threatens with b8c9LPT, or d8c9LPT.)* **1....h8g9** *(Black decides to "counterattack." Now, if White forms that all-important PT, Black accomplishes the same with h2g1LPT or f2g1LPT. Both players then will have the privilege of the center, which aids in forming BT's and could lead to a fierce battle.)* **2.g5g1** *(White will try to form the g1-g5-e3 SPT and at the same time prevent Black forming his own PT. The strategically important g5 is only temporarily vacant: Black's only piece that could occupy it is on g9 but cannot move now due to the move-once-in-two-turns restriction. The main goal in the opening should be the forming of the first PT as this will enable the player to play in the center, possibly forming BT's and removing the opponent's pieces from the field. Access to the center also helps in advancement toward the goal. The forming of YT's also is beneficial, as this bonus move will reduce the opponent's numbers. However, the BT is most effective; it may be compared to the Queen in Chess, while the YT is more like the Rook. One word of caution: be careful while reducing the opponent's numbers, because the remaining four or five pieces can quickly sneak into the goal and win the game.)* **2....f2e3** *(Black can not block both d2 and d8. The f2e3 move is better than f8e7 since it prevents White from building the g1-g5-e3 SPT. It would have been a mistake to move f8e9, with the threat of forming a YT as 3.d8g5 f2e3, 4.b8c9LPT gives winning chances to White.)* **3.d8g5** *(Now the threat is 4.b8c9LPT, with a better game for White.)* **3....c5c9, 4.c1c5** *(White now occupies both c5 and g5, which both prevents Black from forming a PT anywhere and forces a SPT of White's own on c1-c5-a3.)* **4....i5e1** *(Black attempts to build a YT on e1-e9-i5 that could offer some counter play.)* **5.a5e9** *(This is essential! White cannot rush with the PT formation: 5.d2c1, f8e9, 6.a1a3SPT i1i5YT/e1:a5, and White is first to lose a piece. Although 6.a5a3 instead of 6.a1a3 avoids the loss of a piece, Black could possibly take advantage of the YT later in the game.)* **5....f8d6**

Black does not have a good continuation. It is "slow death" from here on. Perhaps the very first move was already a mistake. Let's see a different opening line:

1....c5c9 *(This reply to 1.b2c1 looks better. It will prevent the c1-c9-g5 LPT. The c5 cell can be reoccupied in the next move since the c1 piece is now frozen for one move.)* **2.g5g1** *(White is now aiming at the g1-g5-e3 SPT.)* **2....f2c5** *(The c5 cell must be reoccupied! 3.c1c5 followed by 4.d2g5 or 4.d8g5 has to be prevented! Besides, 2....f2c5 slows down plans by White as 3....f8e7SPT is an immediate threat.)* **3.d8e7** *(White could opt for a fighting game with 3.d8g5 f8e7SPT, 4.d2e3SPT. Black, first to form the PT, would gain a slight advantage.)* **3....h2f4** *(Moving into the hot zone is now the only defense against the g1-g5-e3 SPT by White. This move stops the immediate d2g5, which could be followed by c1e3SPT in the fifth turn.)* **4.d2=f4** *(While the piece on f4 could make a second consecutive move, going to g5, Black now has a well-advanced piece on d2.)* **4....f8e9** *(Black is now threatening to form a YT with 5....d2e1. However, the 5th move by White will make Black think twice about taking that road.)* **5.f4g5** *(Now, 5....d2e1YT would accomplish nothing: the piece on e9 could not move yet to take off the e7 piece. Besides, White could then move c1e3SPT, establishing a winning position.)* **5....d2e3**.



Position after 5....d2e3

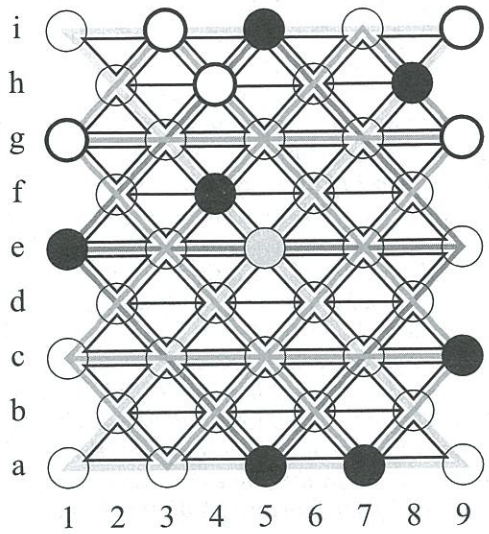
The game looks even. Let's look at two continuations from this position. The first leads to a win by marching to the goal:

6.b8d6 i5e1, 7.e7g9 i9i5YT/e9:a5, 8.d6e7SPT i1i3 *(Stops White's g5i3.)* **9.a9i1 i5e9YT/a5:a1** *(Black should have moved 9.....a5a7SPT instead.)* **10.c1c3** *(White avoids a blockade by Black's c5c3 and e1d2).* **10....i3h2, 11.g5i7 a1a5YT/e1:c3, 12.e7i3 e9e7SPT, 13.g1g3 c3a1, 14.g9g7 e7h4** *(Black attempts to block the piece at g3.)* **15.g3e5 e3h6** *(Capturing White's piece on e5 would be a big mistake: 16.g7i5 wins.)* **16.i7i9BT/i1:h2 h4e1,**

17.e5g3 c5a7, 18.g7g5 h8b2, 19.g3i5 e1h4, 20.g5g7 h6h8, 21.h2i1 h4h6, 22.g7g3. *(White will win with 23.g3h2 or 23.g3h4.)*

Now for a continuation that is won by reducing the opponent to three pieces:

6.b8d6 c9a7, 7.a5e1 e9d8, 8.e7g9 i5e9, 9.d6e7SPT/-d8c9SPT/a7:a1, 10.a9h2 h8e5BT/i1:h2, 11.g9i7 c5a7, 12.e1i5 h2i1BT/e5:e7, 13.c1c7 e3e5BT/i9:i7, 14.g1i3 a7a9BT/-, 15.c7+h2 i7i9BT/i1:h2 wins.



Lastly, a win by stalemate, starting from the above position with Black to move: **15....c9g5, 16.i3i1 i5f8, 17.g1i3 a7g1, 18.h4h6 a5c3, 19.i3i7 g1h2, 20.g9g7 c3f6, 21.h6i5 g5h6, 22.g7g5 e1g3, 23.i1i3 h2h4, 24.g5g7 g3h2, 25.i3i1 f4g5, 26.i5i3 h4i5, 27.g7g9 g5h4 wins** *(The g9 piece cannot move.)*

For the rules for the earlier version, please visit: http://communities.msn.com/ZChess/glexruleseditedversion.msnw. There is a Zillions implementation of Gle'x available both at this website and at http://www.zillions_of_games.com. ■

Kyoto Shogi

The following is a game between Mike Sandeman (Black) and Takahashi Yamato (White), a professional Shogi player. Comments by Mike Sandeman.

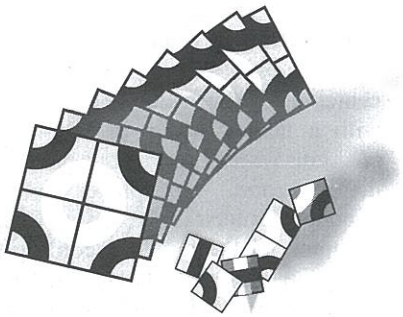
1.S-4d=B T-1b=L, 2.P-1d=R G-3b=N, 3.Rx1b=P Nx4d=G, 4.Tx4d=L Sx1b=B, 5.L*3d K-2a, 6.L-4c=T *(See diagram. Here Giuseppe Baggio played what I had thought the best move, 6....P-5b=R, followed by 7.Tx5b=L R*5e, 8.R*4e Rx4e=P, 9.L-3c=T B*5c, 10.K-2d B-3a=S with a very interesting position.)* 6....B-2c=S, 7.L-3c=T B*1c, 8.K-4d S-1b=B, 9.G*2d B-3a=S, 10.G(2e)-1d=N R*4a, 11.T(4c)-4b=L Rx4b=P, 12.G-1c=N K-1a, 13.Tx4b=L Sx4b=B, 14.R*4a T*3a, 15.Rx4b=P Tx4b=L, 16.K-3c T*2c, 17.Kx4b R*5b, 18.K-3a *(See diagram. About the intrusion of my king my opponent made some remark like "Iiyaa!")* 18....Tx1d=L, 19.B*4d G*2b, 20.L*2d B-2a=S, 21.Nx2a=G K-1b, 22.Lx2b=T Resign. *(22....Rx2b=P, 23.B*3d P-2c=R, 24.B-2b=S would be* hisshi.*)*

Position after 6.L-4c=T

Position after 18.K-3a

Trax Strategy

Part 2: Line

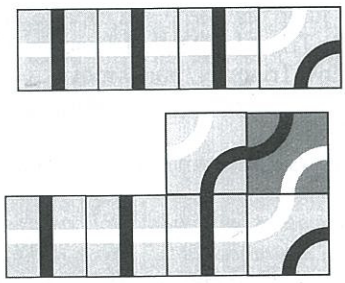


by David Smith

Many new players overlook the fact that Trax can also be won by forming lines that connect outer edges of the position. The main reason for this is that line wins do not become threatening until at least 12 or more turns into a game. We say "usually" because good players are alert to the possibility of winning or losing with lines from the outset.

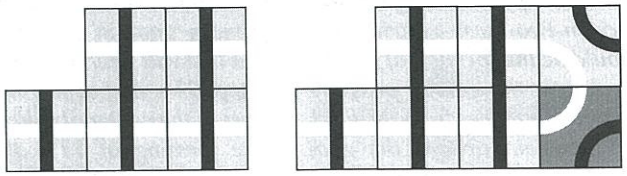
A *line threat* is any path that has strong possibilities of being made into a line. Unlike a loop threat it will not necessarily result in a line win if you have the initiative, but it is still dangerous for your opponent to ignore or extend. Line threats are often easier to spot than loop threats since you can usually see the line growing from when it is only a few tiles long. It is very difficult to say when a path actually becomes a line threat—that depends on what other tiles are present. In some games a path only two or three tiles long may suddenly grow into a line, whereas in other games a path spanning four or five rows of tiles may be reasonably harmless.

One approach to building strong line threats is to keep the two ends facing in opposite directions. If one end is facing sideways relative to the rest of the line, it is easier for the threat to be defused. By straightening the line out, as shown in the figure below, the threat becomes harder to defuse.



Straightening a line threat

Techniques of line defense include linking the line threat to an adjacent path, as shown below. Since the path has been completely turned back, it is no longer threatening as a line.

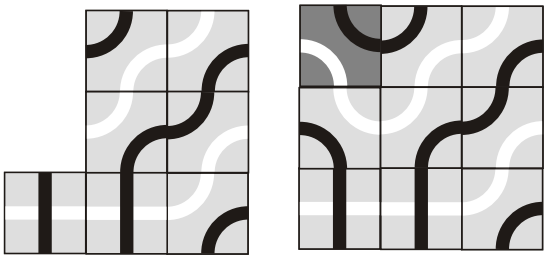


Linking to an adjacent path

This is the most effective method of defending lines. The problem then becomes one of extending an adjacent path so that the line may be linked to it. On its own, bringing out an adjacent path does not help because you also need the initiative to join the two.

The next position has the advantage that an adjacent path

may be brought out at the same time as making an attack. Since the initiative is retained, the line may be turned back in the next turn.



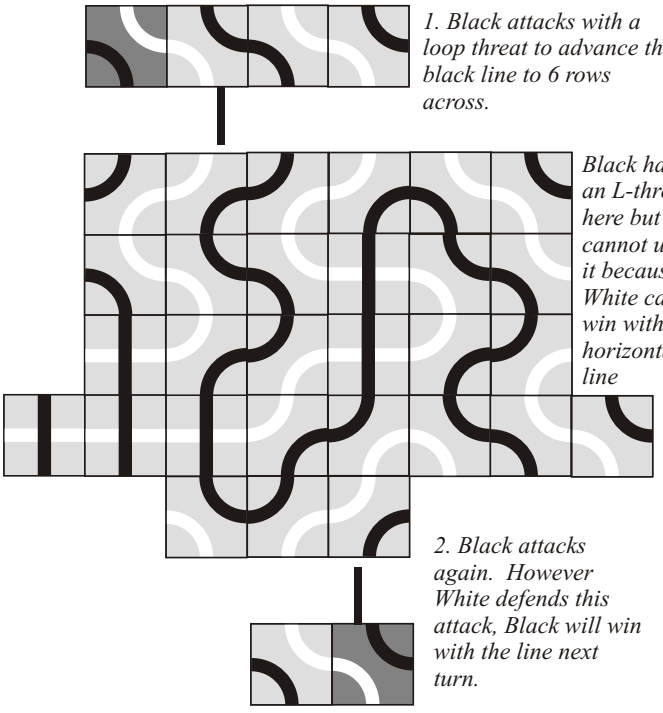
Forming an adjacent path

For some unaccountable reason some beginners think that winning lines need to be straight. They never are, as they snake up and down and across and back in most unexpected ways. Having said that, straight-side-up tiles tend to be the more likely component of line wins, while curves-side-up tiles tend to be more critical to completing loop wins.

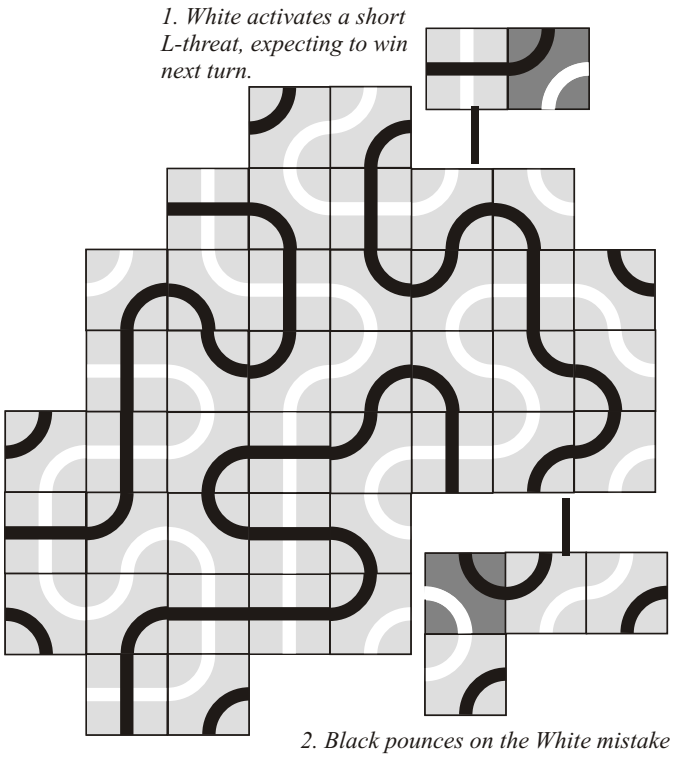
In some sense, lines are the perfect complement to loops. To defend lines the ploy usually is to turn them back on themselves. Conversely, defending loops usually involves turning their loose ends away from each other. This has the effect of turning loop threats into line threats, and vice versa. Many times players find that they cannot complete double loop wins because of the presence of a serious line threat.

There are two kinds of lines—*sleepers* and *aggressors*. An aggressive line is one that a player is doing his level best to press home, often with the help of loop attacks. A sleeper is one that has just happened to become a threat, often with more help from the opponent than the threatening player.

Here is an example of an aggressive line win. Note that in this and the following example the diagrams are not repeated after each turn; rather, the primary tile and any forced plays are indicated as a group of tiles that the move will add to the layout.



Aggressive Black line win



Passive Black line win

Clash of the Titans

Such a game decided the 2002 World E-mail Tournament recently when Carole Plante of Canada beat World Trax Champion Donald Bailey of New Zealand for the third year running to snatch the title from Donald for the first time. Readers can check out this game at http://www.traxgame.com/games/abgame.html. There will be found a playback facility with commentaries by Donald and Carole.

Here is a game where Bailey, playing Black, mounted a sustained attack for a very long time. Plante survived when an unexpected defense became available to her that lost Donald the initiative. As is often the case when that happens in Trax, enough corners and other options had developed for a class player like Carole to be able to find a win. It needs to be remembered that this was Trax played by analysis with up to five days per move available. Despite that apparent luxury, e-mail games tend not to have many more moves than real time games, largely because the improved quality of play still has to contend with the same delicate balance between attack and defense. ■

In the postscript to the article in AG10 *I suggested that Trax could be played with colored pens. David quickly pointed out to me the impracticality of this because of the difficulty of correcting primary plays that result in illegal forced plays into caves. Also, although the average Trax game uses about 60 tiles, a significant proportion of games use up to 100 tiles, and the game can be extended in any direction from the first tile played—you might quickly extend off the edge of the paper! (In fact, David currently has a claim with the* Guinness Book of Records *that Trax is the world's largest intellectual game. David's manufacturer of Trax tiles in China is set to play a contrived legal game that will use 128,000 tiles and measure 250 yards square and cover four basketball courts!) – Ed.*

Unequal Forces Game Design Competition

Unlur, a connection game by Jorge Gomez Arrausi, is the winner of the Unequal Forces Game Design Competition 2002. Although it has obvious affinities with Hex, The Game of Y, and Havannah, Unlur is a unique, original conception for two reasons. Firstly, it is made a game of unequal forces by giving the players different objectives, one of which is clearly much easier to obtain than the other—a brilliant extension of the "pie rule" is used to give the players theoretically even chances to win. Secondly, completing the opponent's objective is a loss, so one's own pieces can actually become a liability. Friendly pieces can be a liability in Onyx, too, but in the case of Onyx this arises naturally from the game's tactics—in Unlur it is a natural consequence of the game's strategy. We hope to have more about Unlur in the next issue.

Two other games that the judges liked are presented in this issue. If Unlur has similarities to Hex, Reviser can be considered an Othello variant, and Hackaback is a mancala game. Thus three genres of abstract games are represented by interesting games of unequal forces. In addition, to emphasize the geographical reach of the competition, the three game designers come from Spain, Germany, and the UK, respectively.

The rules below are, to a certain extent, paraphrases of the inventors' own descriptions—but I take the credit for any errors!

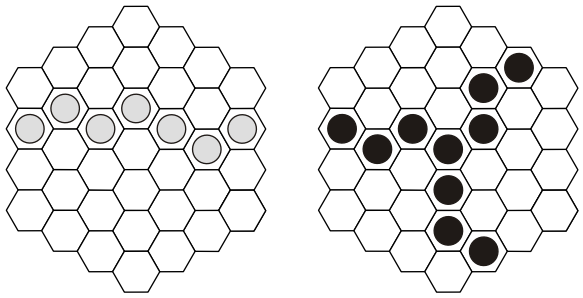
Unlur

Unlur is a game for two players, played on a hexagon-shaped tessellation of hexagons, with eight hexagons on each side. (However, a bigger board makes the game deeper, and a smaller board makes the game faster.) It is played with black and white stones that can fit comfortably within the hexagonal cells. Play takes place in the hexagonal cells rather than on the points of intersection of the lines of the board.

Two stones of the same color are *connected* if their cells share a common boundary. By extension, a group of stones of the same color is a *connected group* if any stone in the group can be reached from any other stone through a series of connected pairs of stones in the group. A stone is *connected to a side* if it occupies a cell on that side of the board. (Corner cells belong to both sides that join there.) A *line* is a connected group of stones of the same color that is connected to two opposite sides of the board. A *Y* is a connected group of stones of the same color that is connected to three non-adjacent sides of the board.

There are two players, Black and White. Each player only places stones of his color. The game begins with the board empty. Black plays first, and thereafter the players alternate moves. Each turn a player places a piece of his color on any vacant cell. It is not permitted to pass.

The game is won by White as soon as he makes a line. The game is won by Black as soon as he makes a Y. If a player achieves his opponent's objective, he loses, unless he simultaneously achieves his own winning condition.



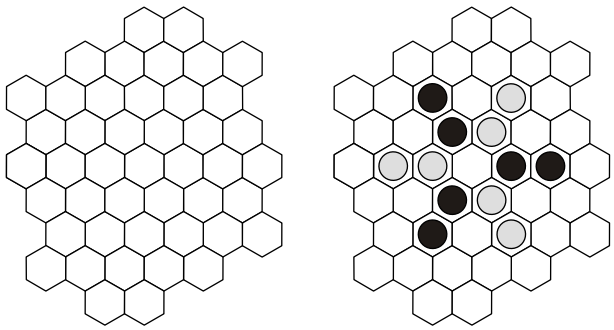
Unlur White line and Black Y shown on small boards

One of the two players must achieve his objective if the game is played out to the end. In addition, it is impossible for both players to achieve their winning conditions at the same time. Therefore, the game cannot be drawn.

Obviously White has a strong advantage because the White objective, a line, is much easier to obtain than a Y. An adaptation of the "pie rule" is the perfect way to balance the game. At the start of the game both players take turns to place black stones on vacant cells until one player passes. At this time, the player who did not pass becomes White for the remainder of the game and places the first white stone on the board. Thereafter, the game continues normally, with players taking turns to place stones of their color on vacant cells.

Reviser

Reviser is a game for two players that was invented by Jochen Drechsler. The board for Reviser is an arrangement of 45 hexagonal cells, shown below left. Also required are 45 pieces, black on one side and white on the other, that can fit comfortably within the cells of the board. Othello pieces are ideal. One player, Black, always plays the pieces with black side up; the other player, White always plays the pieces with white side up. The starting position is shown on the right below.



Reviser board and starting position

The two players play different roles in the game. One player is the *Setter*; the other is the *Jumper*. Setter and Jumper keep their roles

during the whole game. There is no connection between these roles and the color of pieces the players play.

The two players decide who is first. The first player chooses which role to play. The second player takes the other role and decides who makes the first move and with which color. (Color does not really matter, as the starting arrangement is symmetrical.)

The starting-player (decided by the "second player") starts the game with a regular move (in accordance with his role). Thereafter, the players take turns to move according to their respective roles.

At his turn the Setter places a piece on the board with his color face up. That piece must be placed so that a straight, unbroken line of pieces with the opponent's color face up is trapped between the piece just placed and another friendly piece. The opponent's pieces thereby trapped are then flipped over. This is exactly the same mechanism as in Othello. In contrast to Othello, the Setter can capture only one line of pieces with a move. If two lines are trapped, the Setter must choose which is captured.

The Jumper never places a new piece on the board. At his turn, instead, he chooses a piece with his side face up and jumps it over a straight, unbroken line of pieces with the opponent's color face up into a vacant cell immediately beyond them. The opponent's pieces thereby jumped over are then flipped. If the piece that just jumped is in a position to make another jump, it may do so, and it may continue to jump as the opportunity exists. The jumping piece may not jump over friendly pieces or vacant cells.

Players must make a move if possible—it is not permitted to pass. As soon as one player is unable to make a legal move on his turn, the game ends. At this point, the player with the greater number of pieces on the board with his side up wins the game. If both players have an equal number of their color showing, the game is drawn.

The game can end before the whole board is filled. The longest possible game (with the whole board filled) takes 66 moves if Setter starts the game, or 67 moves if Jumper starts.

Jochen commented that Jumper has a much greater choice of moves than Setter most of the time, but Setter has the advantage that he always enters an additional piece and that his pieces do not have to move. It is unclear which player, if either, has the advantage.

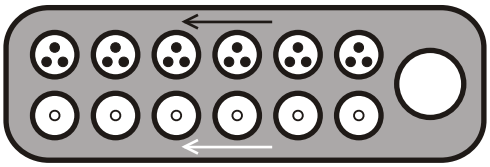
Hackaback

Hackaback is a two-player mancala game of unequal forces invented by Andrew Perkis. According to Andrew, "The name is intended to chime with both Backgammon and Mancala. Like Backgammon, it is a multiplex race game of contrary movement.... The name also refers to a mechanism that frequently occurs in play—particularly towards the end of the game—when one player is able to 'hack' the other 'back'."

The Hackaback board consists of an array of 2x6 "cups," with a larger storage cup at one end. A 2x6 mancala board works very well, either with the storage hole at one end covered, if your board has storage holes, or with some other container used at one end as a storage hole. Alternatively, a Hackaback board can easily be improvised from egg cartons or similar containers.

One player, Black, uses a set of 18 "black" seeds; the other player, White, uses a set of six "white" seeds. Again, mancala pieces may be used (if differentiated) or beans or other small items improvised. White starts in the row of six cups that have the storage cup on their right; Black starts in the six cups on the other side of the board.

One possible starting position is shown below. Black has to put three seeds into every cup on his side of the board, but White may distribute his six seeds anyway he likes in his six cups at the outset. The arrows show the direction of movement of the seeds. They do not have to be marked on the board, but may be helpful.



Possible starting position in Hackaback

Black moves first, and thereafter the players move alternately. A player must move on his turn—passing is prohibited. On a turn a player chooses a cup from among the 12 that contains at least one seed of his color. (It should be emphasized for mancala players that a cup on either side of the board may be chosen.) All the seeds in the chosen cup are lifted and are then *sown* one by one into consecutive cups in the direction of movement of that player—clockwise for White and anticlockwise for Black—starting with the cup immediately adjacent to the cup the seeds were lifted from. When a player picks up a mixture of the two colors of seeds, they may be sown in order he chooses. If the end of a row opposite the storage cup is reached, the player continues to sow round the board in the other row of cups. If the storage cup is reached in the sowing, one seed is placed in the storage cup and the player continues to sow round the board. Seeds in the storage hole take no further part in the game. Once a player has sown all the seeds from one cup, his turn finishes.

The first person to get all his seeds into the storage cup wins the game. According to the inventor, drawn positions are uncommon, but repetition of moves is a theoretical possibility. If exactly the same board position arises through a cycle of moves, with the same person to move, then either of the players may offer a draw. The person refusing a draw in this circumstance must thereafter vary play, because on the third repetition of a position the person who offered the draw may claim a win.

Lastly, an optional advanced rule: If the game is still proceeding after 120 moves (i.e., 240 half moves), then White may claim a draw. If he does not, there is no second bite of the cherry, and the game must go on.

The inventor made the following suggestions for good play:

♦*The best opening distribution for White is probably either six seeds in the far left cup or five seeds in the far left cup and one further back.*

♦*Black often has the advantage of more move options than White.*

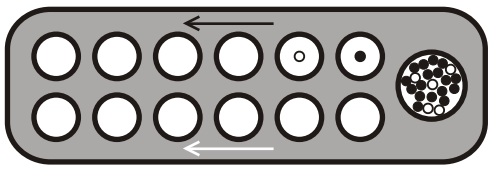
♦*Black is likely to "bear off" pieces more quickly than White at the beginning of the game.*

♦*White has the option of an early break. This is risky, but it can sometimes lead to an early win.*

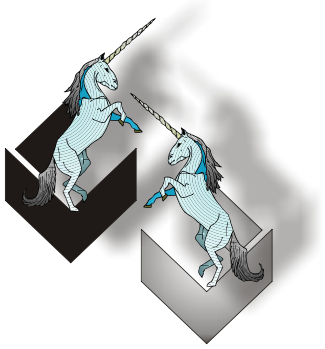
♦*Black works to reduce White to one piece in a favorable position, and then attacks.*

♦*White times "bearing off" pieces so that Black has the wrong configuration.*

♦*Endgame precision is often required to win a "won game."* ■



An example of "hacking back"—White, to move, will lose.



The History of 3D Chess

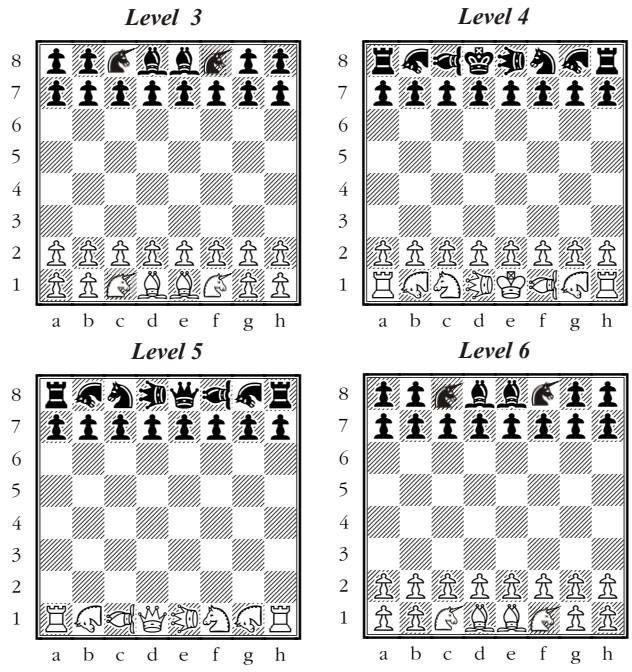
Part Two: Kogbetliantz and Weaver

by L. Lynn Smith

The most interesting developments in 3D Chess before the Second World War were the introduction of new pieces and new playing fields. Although the resulting games were not able to gain the popularity of Maack's Raumschach, they did nonetheless substantially contribute to the future of the game.

1918

As mentioned in the previous article, the 8x8x8 playing field was tackled by the Russian mathematician, Dr. Ervand Kogbetliantz. He increased the number of men from the standard 16 to 64 for each player. The initial starting position in the Kogbetliantz 8x8x8 playing field is as follows:



Levels 1, 2, 7, and 8 begin the game empty.

Starting position for Kogbetliantz' 3D Chess
(= Archbishop, = Favorite, = Hippogriff, = Fool)

There is some discrepancy between various sources as to the exact starting cells of the pieces of Level 4 and 5. One source has the Kings facing each other on the same column on Level 4, and the Queens facing each other on the same column on Level 5.

The King, Queen, Rook, and Bishop continue their classical 3D movement, as in Raumschach. However, the Knight's movement has been greatly extended, and it is often given the title of 'Space Knight' to differentiate it from Vandermonde's and Maack's interpretation. To visualize this new Knight's movement, imagine the piece on the center cell of a 5x5x5 cube; it leaps over adjacent cells to attack any cell on the outside surface of this cube, except for those cells that are in a direct orthogonal, diagonal, or triagonal line from the starting cell. This Knight has the potential to attack 72 cells.

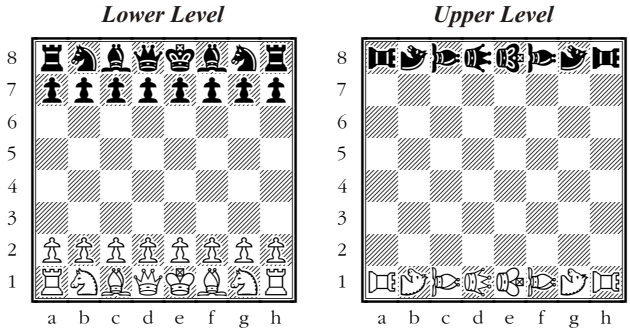
The Fool moves as Maack's Unicorn. The Favorite moves either as a Rook or Bishop and is different from the 3D Queen in that it cannot move triagonally. The Hippogriff is a new 3D leaper. Its movement is described as an orthogonal step, followed by a diagonal step, and then a triagonal step. This can be otherwise interpreted as a direct leap from one corner of a 2x3x4 region to the opposite corner. The Archbishop combines the 3D moves of the Bishop and Unicorn.

The Pawn has the standard movement and capture upon its level, including the initial two-step move with the *en passant* rule. It also captures forward into an adjacent level, by moving either one space diagonally or one space triagonally. It is unknown whether the *en passant* rule could be exercised with a change-of-level capture.

Although Dr. Kogbetliantz originally developed this game in Russia in 1918, he widely published his ideas in the United States in 1952. Articles appeared in *Newsweek*, *Time*, and *The New Yorker*. Because of the size of the playing field and the number of pieces, the game was unable to attract a substantial following. Nevertheless, the new pieces demonstrated the possibilities of 3D Chess. It would inspire many developers in the years to come.

1930

Walter Reed Weaver developed a 3D Chess game for the 8x8x2 playing field, which he called 'The Military Game.' There are reports that the Peruvian army once utilized this particular game to aid in training its officers.



Starting position for The Military Game
(= Bombardment, = Pursuit, = Attack,
= Distant Observation, = Local Observation)

Pieces on the Lower Level move and capture exactly as in standard Chess and are restricted to the Lower Level. The Pawns are an exception because in their initial position they act as anti-aircraft

artillery, preventing enemy aircraft from occupying the cell directly above on the Upper Level.

The 'aircraft' pieces on the Upper Level move exactly like their complements on the Lower Level. Thus Bombardments move like Rooks, Pursuits move like Knights, etc. Aircraft always remain on the Upper Level. No aircraft is allowed to occupy a cell above an enemy Pawn if that Pawn is in its initial position, except for Bombardments and Attacks, in special circumstances, to capture that enemy Pawn.

The two types of Observation cannot capture pieces on either level, and neither can they be captured; the Observations can only be used as blocking pieces. Observations also are disallowed from moving above anti-aircraft enemy Pawns. Pursuits can capture aircraft on the Upper Level, and are the only pieces able to do this, but even Pursuits are unable to capture Observations.

Bombardments and Attacks can move only to vacant cells on the Upper Level, and are therefore unable to capture other aircraft. But if they move to a cell directly above an enemy piece on the Lower Level, this enemy piece is captured. Bombardments and Attacks 'check' the enemy King by occupying the cell above it.

Bombardments and Attacks may also capture anti-aircraft Pawns by moving above them, but special circumstances are necessary. An anti-aircraft enemy Pawn can be captured by moving to a cell directly above it from a direction corresponding to the Pawn's front or side, provided this cell is also under attack by a friendly Pursuit. If the owner of the Pawn also has a Pursuit attacking that cell, such a capture cannot be made. On the other hand, no assistance from a friendly Pursuit is necessary if the Bombardment or Attack is moved to the cell directly above the enemy Pawn from a direction corresponding to the Pawn's rear. (It is not specified whether or not an anti-aircraft Pawn that is Pursuit-protected is immune to rear attacks.)

This takes as up to World War II. It appears that 3D Chess went through a 'Dark Age' during the years surrounding World War II. Further developments would have to wait for Vernon Rylands Parton in the 1950's. But the true 'Renaissance' of 3D Chess in the public consciousness came about because of the television science fiction series *Star Trek*, in the 1960's, which featured an exotic form of the game. This Tri-Dimensional Chess fueled the imaginations of developers for decades afterward.

I have attempted faithfully to present the history of 3D Chess so far. Any omission was unintentional. I am very interested in all information relating to the history of 3D Chess and encourage readers to communicate their personal knowledge and comments.

Sources

The Encyclopedia of Chess Variants, D. B. Pritchard (Games and Puzzle Publications).
Exploring the Realm of Three-Dimensional Chess, Dave Erik Matson (The Oak Hill Free Press).
The Chess Variant Pages, http://www.chessvariants.com.
3D Chess Group at Yahoo!, http://groups.yahoo.com/3-d-chess.
3D Chess Federation, http://www.3dchessfederation.com.
Special thanks are due to Dan Troyka for researching much of this information. ■

"I'd rate Queen and Marshal as practically equal, Cardinal about a Pawn less in value. If you can get a piece inside your opponent's position, the Marshal is the best choice; perpetual checks are very easy to get with this piece. The Queen is better in a wide open endgame." – R. Wayne Schmittberger, Grand Chess World Champion

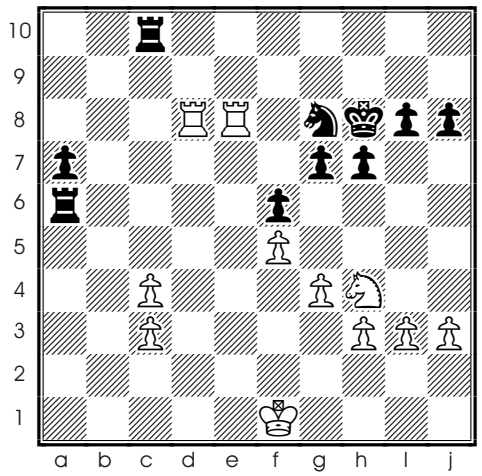
The Grand Chess Corner

by Tony Gardner

One reader has suggested that endgames with the special pieces be covered. Specifically, can a King and Marshal or a King and Cardinal checkmate a lone King? I have not heard of these positions being reached in actual play, and given the nature of the game it is very unlikely they ever would be. However, my studies show that these games are winnable, but as expected there are some stalemate pitfalls to avoid. With a Marshal, it is best to keep it as distant from the enemy King as possible while depriving the opponent one row at a time. If the enemy King nears the Marshal, its Knight power will allow the winning King the opposition. With a Cardinal, the task is more problematic, but the trick is to muscle the lone King into any corner, from which the Cardinal can deliver mate two squares away diagonally.

Kerry challenged me to a rematch, and fared much better in this game than the first.

Handscomb-Gardner, 2001-02: 1.f5 f6, 2.g4 d7, 3.d5 Nd8, 4.Nh4 h7, 5.e5 g7, 6.Nc4 c6, 7.dxc6 Nxc6, 8.e6 b7, 9.Rjd1 Kf10, 10.exd7 Bxc4+, 11.bxc4 exd7, 12.Ba4 Cf7, 13.Cd5 Kg9, 14.Kf1 Ba7, 15.Me4 Rae10, 16.Md6 Cxd6, 17.Bxd6+ Kh8, 18.Bf4 Ng8, 19.Cc7 Qc10, 20.Qxd7 Mc9, 21.Bxc6 Mxc7, 22.Qxc7 Qxc7, 23.Bxc7 bxc6, 24.Rd8 Ra10, 25.Re1 Bc5, 26.Ree8 Rjg10, 27.a5 a7, 28.Bd6 Bxd6, 29.Rxd6 Rab10, 30.Rxc6 Rb3, 31.Re3 Ra3, 32.a6 Rb10, 33.Rd6 Rc10, 34.Rd8 Rxa6, 35.R3e8 *(diagram)*

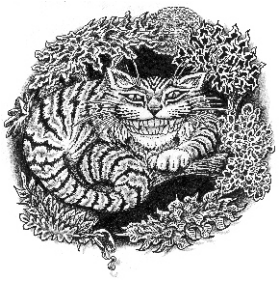


Position after 35.R3e8

35....Rg10, 36.c5 Rc6, 37.Rc8 Rxc8, 38.Rxc8 a6, 39.c6 a5, 40.Nf3 Ra10, 41.c7 a4, 42.Rxg8+ Kh9, 43.Rh8+ Kg9, 44.c8=M a3=Q, 45.Me8+ Kf9, 46.Mc9+ Kg10, 47.Rg8+, Black Resigns.

The problems contest will resume next issue.
Solutions: #9 – 1.Mf6; #10 – 1.Re9 Bd9, 2.Rxd9 Rxd9, 3.Mc8. ■

Alice chess

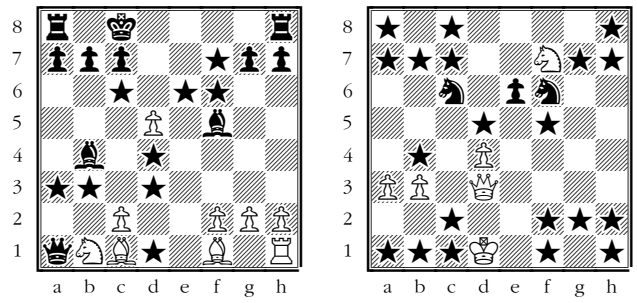


PART 3

by Peter Coast

I conclude this series of articles with two serious Alice Chess games played by correspondence three years ago in a tournament organized by the British Chess Variants Society. Players of variant chess are thin on the ground, so some form of remote play (correspondence or e-mail) is necessary. A non-interactive mode of play has the additional advantage of giving plenty of time for thought: this is very helpful with variants because we often do not know what we should be doing!

I am Black in the first game: **1.a3** *(This threatens 2.Rxa7, though the Rook is in some danger of being trapped.)* **1....d5** *(This threatens 2....Qxd2, with subsequent possibilities such as 3....Qb4(A) mate!)* **2.Nf3 Bg4, 3.Ra2** *(Now d2 is firmly protected, but White no longer threatens a7, and has weakened his back rank.)* **3....e6, 4.Ne5(A) Bd6** *(Now 5.Nxf7 is answered strongly by 5,,,,Bb4(A), threatening 6....Qxd2 mate.)* **5.Rg1 Bf5(A), 6.b3 Qd4** *(This threatens the Rook on g1 and allows Black to penetrate.)* **7.Rh1(A) Qa1(A), 8.d4 Bb4(A)+, 9.Rd2(A) Bxd2, 10.Qd3** *(This is a good defensive move by White: it protects Nb1 and gives the King a flight square.)* **10....Bb4(A)+, 11.Kd1** *(Now White threatens 12.Qb5(A)+, winning the Bb4. Black's King is now under threat and must run for cover.)* **11....Kd8, 12.Nxf7+ Kc8(A), 13.e4 Nf6, 14.exd5(A) Nc6** *(14....Ne4(A) threatening 15....Nxf2+ can be met by 15.Be3. Black has lost a Pawn during the last two moves but has two more pieces in play.)*



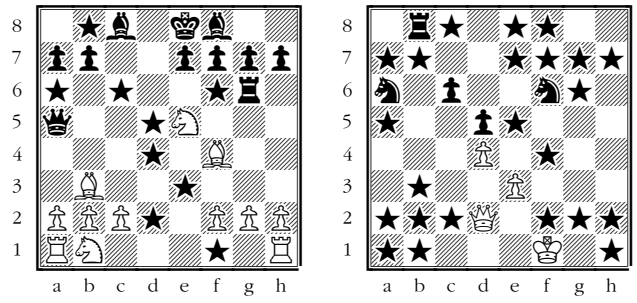
A B

Position after 14....Nc6

15.Nc3 Nxd4(A), 16.Ne4(A)? Bxe4, 17.Qxe4(A) Qb1 mate.

This sort of mate is a peculiarity of Alice Chess: nothing can interfere on c1 because a White piece is already there! White lost this game because of his back-rank weakness and lack of development: 4.Ne5(A) and 5.Rg1, in particular, were ineffective.

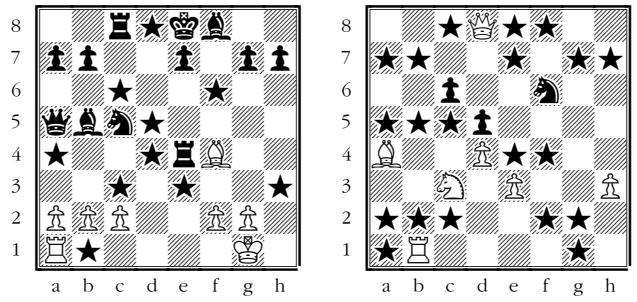
In the second game I am White against the same opponent: **1.d4 Nf6, 2.Bg5 c6** *(This move protects d7 indirectly, because 3.Qxd7 is met by 3....Be6!, trapping the Queen!)* **3.e3 Qc7, 4.Qd2** *(This is a defensive move against 4....Qa5(A)+.)* **4....Rg8, 5.Bf4(A) Na6, 6.Bc4 Rg6(A)** *(This is a good developing move.)* **7.Nf3 Qa5(A)+, 8.Kf1 d5, 9.Bb3(A) Rb8, 10. Ne5(A)**



A B

Position after 10.Ne5(A)

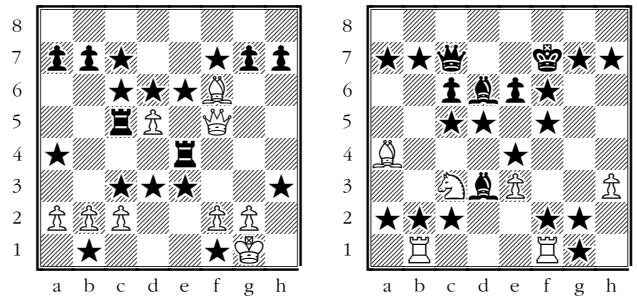
(Black has come out of the opening well—both Rooks are active, and he has more attacking chances than White. Bxf7 is not necessarily threatening because the Bishop can easily be trapped behind enemy lines.) **10....Rg4, 11.h3 Re4(A), 12.Nc3 Be6, 13.Nxf7** *(Now 13....Bxf7(A), 14.Bxf7 g6 fails to trap the white Bishop because of 15.Bxd5(A). Black, however, can afford to wait.)* **13....Nc5(A), 14.R(h1)b1 Rc8(A)** *(This keeps black's back rank protected, but also has threats— e.g. 15....Nxb3, 16.Rxb3(A) Rxc2!, 17.Qxc2(A) Re1 mate.)* **15.Ba4 Bxf7(A)** *(Black's position now seems to be comfortable: he has a Knight for a Pawn and retains attacking chances. White needs to find a means of counter-attack.)* **16.Qd1(A) Bc4+, 17.Kg1(A) Bb5(A)** *(This was played to stop 18.Bb5+. White, however, has a much more powerful move available.)* **18.Qd8!**



A B

Position after 18.Qd8!

(This type of penetration is very powerful. The black King is deprived of flight squares, and it is difficult to defend because the white Queen dominates board B.) **18....Kf7, 19.Qxd5(A) e6, 20.Qxc5 R(c8)c4, 21.Qf5(A) Bd6** *(If 21....Rxa4(A), 22.R(a1)f1 is strong because of 23.Rxf6(A) gxf6, 24.Qxh7+.)* **22.Bg5 Rc5(A), 23.d5(A) Bd3, 24.Bxf6(A) Qc7, 25.R(a1)f1+**



A B

Position after 25.R(a1)f1+

(Continued on page 22.)

LASCA

The Great Military Game

by Ralf Gering

Lasca was obviously inspired by Anglo-American Checkers (referred to just as "Checkers" in this article) and Russian Bashne, and yet it has a distinctive flavor. It was invented by Dr. Emanuel Lasker (1868-1941) "to teach cautiousness and tactics" and to be "a great builder up of ideas." When the game was patented in 1911, he described it as "the great military game," equipped with "officers" and "bombs" (Lasker 1911).

Dr. Lasker was born on Christmas Eve 1868 in Berlinchen, a small town in East Brandenburg, which is now in Poland. He wrote a dissertation on prime numbers (Lasker 1900) and a play that premiered in 1925 in Berlin. His lasting fame, however, is based upon his astonishing Chess performance. He was the world champion from 1894-1921. While his Chess books are still widely read, e.g., *Lasker's Manual of Chess* (Lasker 1927) and *Common Sense in Chess* (Lasker 1896), his other works and inventions are largely forgotten. For instance, he wrote several books on card games (Lasker 1929, Lasker 1931 A), philosophical treatises (Lasker 1919, Lasker 1928) and, written a year prior to his death, a political manifesto in which he advocated the establishment of non-competitive educational self-help cooperatives to meet the problem of unemployment (Lasker 1940).

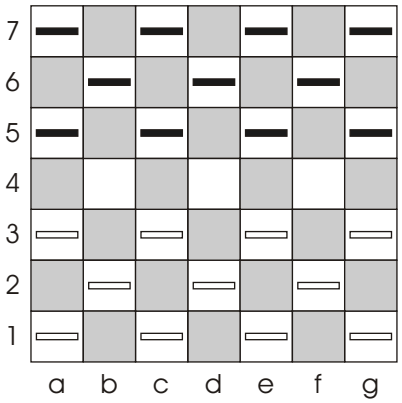
The game that he named after himself enjoyed some popularity after World War I, mainly in Germany, the Netherlands, England and the USA. The first Lasca tournament in history was held in 1920 in Den Haag. Dr. Lasker claimed in 1931 that his game was played by "several 10,000" enthusiasts (Lasker 1931 B). What happened to the game afterwards is not well known. Today only a few faithful players remain. Nevertheless, there is the Clare College Lasca Association in Cambridge, England, a new online club at http://www.playdorado.com, and at least three Lasca-playing computer programs.

Rules

Lasca was originally played over a board of 25 circles. It is also possible to play on a checkered board of 49 squares, using only the squares which have the same color as the four corner squares. Each of the two players has at the start 11 pieces called *privates* (or sometimes *soldiers*), that is white or black men. Flat pieces such as checkers may be used, provided they have a distinguishing mark on one side. The initial set up is shown opposite.

White always moves first, then Black, and so on alternately. On each turn a player may move one piece. A private moves one square diagonally forward to an unoccupied square, exactly as an ordinary man in Checkers.

When a private reaches any square at the opposite end of the board, it is promoted to an *officer*. This is accomplished by turning it over so the marked side is face up. (In our diagrams White officers will be marked with a black circle and Black officers with a white circle. In some sets there were additional green and red pieces that replaced the pieces on the board to represent White and Black officers, respectively.) Promotions are compulsory and always end the move. The officers move like kings in Checkers, one square diagonally in any direction.



Lasca starting position

The privates capture enemy pieces by jumping diagonally forward over them onto the vacant square immediately beyond in a straight line. Officers capture in the same manner, except that their jumps may now be diagonally backwards, too. Both modes of capture are the so-called "short leaps". These capturing rules are, so far, the same as in Checkers. In Lasca, however, captured pieces are not removed from the board, but immediately become the bottom piece of the capturing column, as in Bashne.

Columns are commanded by the player who owns the top piece, which is called the *leader* (or sometimes *commander*). He determines how the column moves and captures. Enemy pieces captured in a column are called *prisoners*. A column is always moved with all men as a unit and can never be broken up to move. However, if a column is jumped over by the opponent, only the leader is captured, leaving behind a pile reduced by one with a new leader. A column topped by two or more pieces of the same player is called *bomb* and is considered to be particularly strong. When a column reaches the opposite end of the board, its leader is promoted to the rank of officer and the move ends. Note that officers are never demoted, even when taken prisoner.

Jumping over two pieces in one leap or jumping over your own pieces is not allowed. Capturing is compulsory, and, having performed one capture, a column must continue to perform other captures in the same move, as long as the opportunity presents itself. However, there is no obligation to choose the move leading to the greatest number of captures in a move. According to old German game books it is permissible to jump over a column several times in one move, but not by immediately jumping back and forth. The Clare College Lasca Association, on the other hand, does not allow a column to be attacked twice in the same move.

A player may not pass his turn. The object of the game is to be the last to move. The loser is the player who cannot move because his pieces are either blocked or captured. According to the English Lasca Association, it is impossible for the game to end

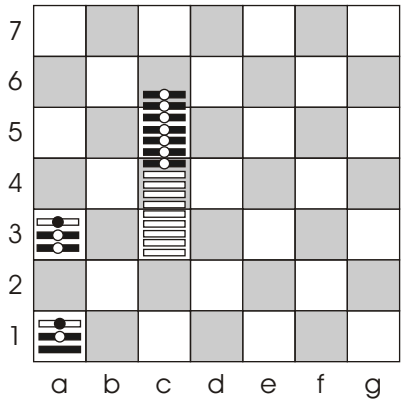
in a draw. However, Dr. Lasker used the term *schlicht* (i.e. "plain") for drawn Lasca games. Probably exotic positions exist, similar to Bashne, which cannot be resolved.

Historical Game

Baudet (White) – *Lasker* (Black), played at the tournament of Den Haag, 1920.

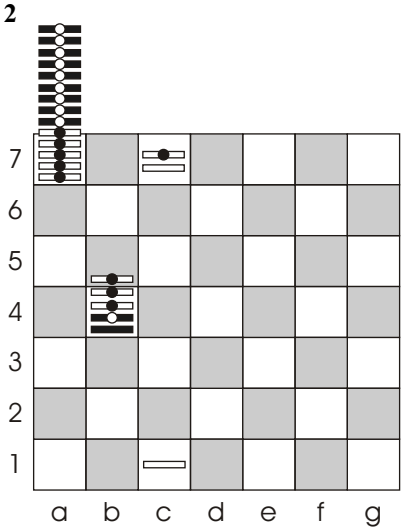
1.c3b4 a5:c3, 2.b2:d4 *(The first three half-moves are known as the Den Haag Opening.)* **2....g5f4, 3.e3:g5 c5:e3, 4.d2:f4 d4:b2, 5.a1:c3 e5d4, 6.e3:c5 d6:d2, 7.b2:d4?** *(White could win with c1:e3! c3:a1+, f4e5 f6:d4, g5f6 e7:g5, e3f4! g5:c1, f2e3 d4:f2, g1:e7+, c1:g1, e7f6! g1:e3, f6:f2!.)* **7....c5:e3, 8.e1:e5 f6:d4, 9.f4:d6 e7:c5, 10.d2:f4 d4c3, 11.g5f6 c3d2, 12.f6e7+ c5d4?** *(In another tournament game between the same players, also Den Haag 1920, instead of this move the following was played: 12....d2e1, 13. e7f6 e1d2, 14. f6:d4 c5b4!, 15. a3:e7!+ b6c5, 16. d4:b6 a7:a3, 17. e7:a7 d2e1+, 18. a7:c5 b6:d4. Black had a great advantage now and won the game.)* **13.e7:c5 d6:b4, 14.f4:d6 c7:e5, 15.g3f4! e5:e1, 16.d6c7+ d4:f2, 17.g1:e3 e1:g3, 18.c7:e1!** *(White has a winning position now!)* **18....a7b6** *(This does not help either.)* **19.b4:d6 g7f6, 20.d6:b4 b6c5, 21.b4:d6 f6e5, 22.d6:f4 g3:e5, 23.e3:g5 e5d6, 24.a3b4 Resigns.**

Problem 1



This amusing problem is just a "warm-up." White to move and win in two moves! (R. Gering, 1987)

Problem 2



Now you can solve this beautiful endgame by R. Sprague (Berlin, c. 1930). Don't be afraid—it only takes 16 moves! White to play and win!

Solutions on page 28.

Contacts

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♦ Ralf Gering: peace_panther@hotmail.com

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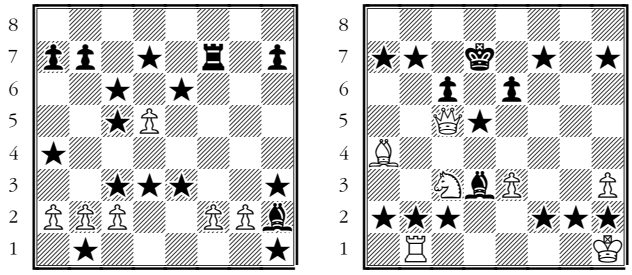
(Continued from page 20.)

(It looks all over for Black. 25....Ke8(A), 26.Rb8(A)+ wins, and 25....Bxf1(A), 26.Qxh7+ etc., but...) **25....gxf6!, 26.Qh5+ Ke7(A), 27.Qg5(A)+ Kd7, 28.Qg7+ Kc8(A), 29.Qf8(A)+ Kd7, 30.Rxf6(A) Bh2(A)+!** *(This bottles up White's King in the corner: from now on any stray check may be mate!)* **31.Kh1 Qe5(A), 32.Rf7+ Qe7, 33.Rxe7(A) Rxe7, 34.Qxc5 Rf7(A)**



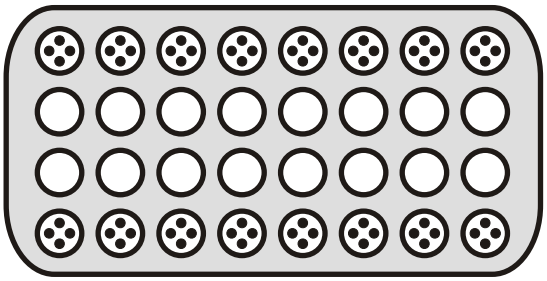
A B

Position after 34....Rf7(A)

(It looks all over now, but...) **35.Qxc6(A)+** *(This sort of move is usually strong since the capturing piece covers squares the King might wish to move to.)* **35....bxc6!, 36.Re1(A)** *(Black was threatening 36....Be2(A) and 37....Bf6 mate.)* **36....Rxf2, 37.Rd1 Rd2(A), 38.Ne4(A) Rxd5, 39.Rxd3(A) Kc7(A), 40.g4** *(Now it is really all over, as White has a comfortable position materially, and Black has run out of threats. Black resigned.)*

This game is the most complex (and longest) game of Alice Chess I have played. It is not without fault (including its share of blunders!) but contains some ingenious play on both sides. It has not, however, a fully mature style of play. Tactics predominate, and threats are short-term. Material advantage (e.g. a piece up one way or the other) seems to have much less importance than in Orthodox Chess. These are all symptoms of a game that is still poorly understood: my correspondents and I have been struggling with the most elementary aspects of good play.

If you feel tempted to sail in these uncharted waters, the British Chess Variant Society runs events for Alice Chess. Contact Postal Games Organizer: Jed Stone, 7 Hartstoft Avenue, Worksop, Notts. S81 0HS, UK; e-mail: jedstone@talk21.com. ■



Omweso

Uganda's national Game

by Michael Sandeman

Mancala games are of extraordinary antiquity. Blocks into which pits had been carved to provide playing boards can be found amongst those used to build the pyramids. The geographical range of these games is equally impressive, covering as it does the whole African continent, the Indian subcontinent, the Philippines, Indonesia and parts of China.

The basic playing concept underlining and thereby defining mancala games is easily encapsulated in the description *pit-seed-sow-capture*. To explain more fully, the playing surface or board consists of an arrangement of shallow pits for the reception of the playing pieces— these are usually pebbles, shells or seeds that are similar in color and shape and thus undifferentiated as regards ownership and powers of movement or capture. The game is played by distributing seeds sequentially into pits, according to the pertaining rules of direction and viability, with the aim either to capture pieces to add to one's stock of captured pieces or to capture opponent's pieces for one's own use.

As could be expected with such a long history and far ranging expansion, an enormous diversity of games has evolved within the basic pit-seed-sow-capture concept. Across Africa, typically, the rules of a game will vary slightly from one village to the next. Questions arising from the transmission of these games and the adaptions imposed on the rules by the recipients are of great interest to anthropologists. The term *mancala* is the anthropologists' generic term for these games rather than the name of a single game.

In east and south Africa, more or less congruent with the lands of the Bantu-speaking peoples, four row mancalas are played. Bao has already been briefly described in *Abstract Game*s. In this article I will present an introduction to Omweso, a game from Uganda. This game is from further west than Bao and in that sense perhaps more 'African.' Omweso seems to have first been described in European academia in 1913 by M. G. Sanderson, and he and those following him referred to the game as 'Mweso' rather than 'Omweso.' I am informed by Brian Wernham of the International Omweso Society that 'Mweso' is a "slang abbreviation," so in this article I will be using the term 'Omweso.' However, the reader should be aware that the two names refer to the same game, even though under either name the game may be subject to some local variation.

I have the feeling that many potential fans of mancala games are put off by the unavailability of playing equipment. This should not be a stumbling block. The simplest way to play without a board is to draw out a suitable grid on a piece of paper with a pen; the number of seeds in a pit can be indicated by pencil slashes; when the seeds are picked up for sowing, an eraser will remove them. The friend I play with in the UK has 32 small metal dishes sold for baking cakes, and these in conjunction with a bag of suitably-sized beans can be arranged for use in most mancala games. I am sure many alternative improvisations can be devised.

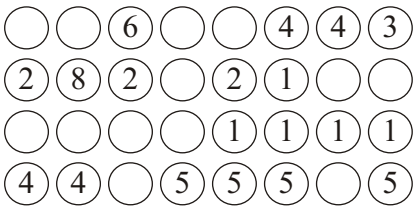
I will give the standard rules of play that embody the full flavor of Omweso, further mentioning within these rules only a couple of points of regional departure. The playing equipment is simply four rows of eight pits arranged with the long side transverse between the players. Those who read the Bao articles will notice that Omweso uses the same board as Bao but without the 'houses.' Also in common with Bao each player is in control of the seeds in the two nearest rows. The only other requirement is sixty-four seeds or similar playing pieces.

Play is basically anti-clockwise, so that a player removes all the seeds from the pit of choice and sows them one into each of the following pits through the loop described by the two rows, left to right in the outer (closest) row and right to left in the inner (second-closest) row. Sowing by selection of a pit containing a single seed is not permitted. Should the final seed of a sowing be into an empty pit, the turn passes to the other player. Should the final sowing be into an occupied pit, unless a capture is possible, the sowing process recommences with the picking up of all the seeds from that pit. This process continues until either a capture is made or a sowing ends in an empty pit. (I will refer to the distribution of seeds from an individual pit as a *sowing* and the complete play of the player between the opponent's previous and subsequent moves as a *move*.)

The conditions required for capturing are that the final pit entered into during a sowing be occupied, in the player's inner row, and that the pits opposite in both of the opponent's rows each contain at least one seed. When a capture is effected, the seeds from both of the opponent's pits are picked up and sown as if they had come from the pit from which the player's immediately preceding sowing began. If a sowing ends in a situation where a capture is available the capture must be made. However, there is no compulsion to select a move that will result in a capture.

These different move types can be easily understood with an illustrated example, but first a few words about notation. As mancala games do not have a written tradition, they lack an established system of notation. The various authors who have described mancala games have for the most part got around this by devising their own notation. All of the notations that I have seen are readily understandable—nevertheless, I will follow suit and introduce an as yet unpublished system that I have used for correspondence play. There are some points that will need to be dealt with when they arise, but simply put the system numbers pits anti-clockwise from the left outer, 1, to the left inner, 16; the pits are numbered according to the view point of the player they belong to, so my 1 is on my left but my opponent's 1 is on my right. For basic moves all that need be stated is the number of the pit from which the move commences.

The greatest two-rank mancala is Wari (or Oware, or Awélé, etc.). It has been reported that Wari has been solved, as of May 2002, by Henri Bal and John Romein at the Free University in Amsterdam, Netherlands. With perfect play Wari is a draw.



In the example above we are here considering possible moves by the player controlling the bottom two rows. A possible single sowing move would be 8, resulting in an empty 8, two seeds in each of 9,10,11 and 12, and a single seed in 13. A possible multiple sowing move would be 5, resulting in an empty 5, six in 6 and 8, two in 9 and 11, and one in 7, 13 and 14. A possible single sowing with capture would be 6, resulting in an empty 6, seven in 8, three in 9 and 10, two in 7 and 12, and one in 13 and 14. A possible multiple sowing with capture would be 1, resulting in an empty 1, seven in 6 and 8, six in 4, five in 2, three in 9 and 11, two in 7 and 12, and one in 3 and 13.

Finally, it is also possible to make clockwise captures from pits 1, 2, 15 and 16. The reverse movement is only allowed for a capturing sowing, but may be chosen at any stage in a move should it be available. A reverse capture is indicated in the notation by the pit number followed by a bracketed number; this bracketed number tells us on which sowing from this pit the reverse option was exercised.

An example should make things clear. Again from the diagram, but this time with the top player to move, single sowing reverse captures are possible by 1(1) or 2(1). A multiple sowing with reverse capture is available by 9,1(1), resulting in an empty 9, nine in 10, seven in 6, five in 2, 3 and 13, four in 14, two in 12, 15 and 16, and one in 4, 5 and 7. Should a player decide to make more than one reverse capture from the same pit before resuming clockwise sowing the number of captures is indicated in the notation as follows, 1(1x3), the example being for a case in which three reverse captures were made from an initial sowing. H. J. Braunholtz mentions a rule local to Entebbe in which a player may reverse without capturing.

A game of Omweso is decided when one player has possession of all the seeds or has reduced the opponent to possession of singletons only. In either case the opponent is unable to move and thus loses. A player is also considered to have won if within one move the seeds from all the pits at the extremes of the opponent's rows are captured, i.e. capturing from pits 1+16 and 8+9.

When beginning a game, both players first set out their 32 seeds along their outer rows, four in each pit. This is simply to ensure that the correct number of seeds is present. Lots are then drawn to decide who will play first. However, play does not begin from the initial set up—instead the players take turns to arrange their seeds according to preference. The player to make the first arrangement is also the one to make the first move. Except in tournament games players are usually restricted to a maximum of ten seeds in any one pit.

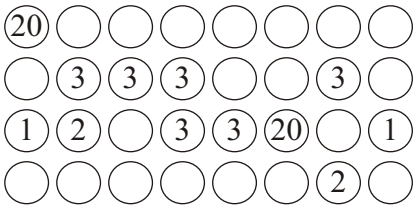
In a sense, the initial arrangement is the most intimidating phase of the game for the beginner as he has no knowledge or experience of the characteristics associated with the various typical opening set ups. On the other hand, there are so many possible arrangements that we have great freedom to experiment. As an alternative, we can adopt the style of players from east Uganda, where they begin the game with two seeds in each pit and play their first move simultaneously, and the player whose move lasts the longest is awarded the first 'real' move.

I have not yet tried this, but my experience with the Philippino game Agsinnoninka, in which the entire game is conducted with the players moving simultaneously and continuously, suggests it would be good fun. Seeds vulnerable to capture have often become safe by the time one's own seeds get round to the capturing pit, which is amusingly confusing.

In order to explore further the issues involved in Omweso play I will now look at a recent tournament game. Tournament games are scored one point for a normal win, two points for 'cutting off the head' (or capturing from the end pits as explained above), and six points for a 'billion win.' In tournament play a 'billion win' is awarded if all the opponent's pits are occupied and the player captures all the seeds with the final move being into an end pit.

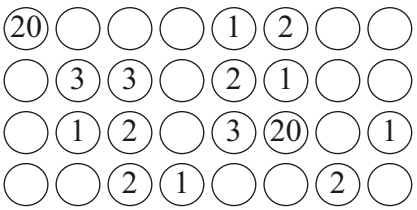
The following game was played between Umaru Semakula and Sofasi Ddamba in the 2000 Baganda Clan Championship. Ddamba plays first.

Semakula



Ddamba

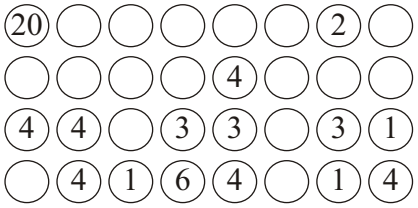
[1] **15 15*** *(In tournament play there is no restriction on the number of seeds placed in a pit. Choosing more than sixteen for a pit ensures that at any point the player will be able to get round and keep sowing. A further difference in tournament play is that when a player sows from a pit containing three seeds, two seeds are sown into the first pit rather than one in each of the three, so Semakula now has two in 16 and one in 1. I mark such moves with an asterisk just as a reminder. This rule only applies until the first capture is made.)* [2] **16 16** [3] **13* 1** [4] **1 2** [5] **2 12*** *(So far both sides have been shuffling their least-aggressively positioned seeds, waiting for an opportunity to attack. Semakula's 5th move is very interesting.)*



*Position after [5]....12**

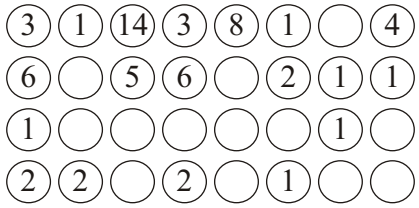
(Semakula is going to have to lose some seeds next move whatever he plays. Personally I would have played 3, and if the opponent captures by 12,15(1), I could play 10 followed by 11, with a position that I think would give enough attacking chances. However, after watching the development of this game I think Semakula's move may be the more perceptively timed.) [6] **7 10** [7] **10 11** [8] **3 12** [9] **1 15(1)** *(Although I have been playing for about fifteen years I am not an expert, so I do not know the genuine motivation behind the play, but I would think that Ddamba is trying to delay breaking up his heavily loaded pit until, as far as possible, Semakula's seeds are round the corner. If Semakula has only ones and twos in his front row when he starts his counter attack, then he is more likely to create empty pits that will stop his move. These*

heavily loaded pits remind me of a well-developed house in Bao. In tournament play if a player captures on two separate moves without a responding capture from the opponent it is already a win for the player, so Semakula having captured on his last move can now relax while waiting to counter attack.) [10] **16 16** [11] **14 1** [12] **11**



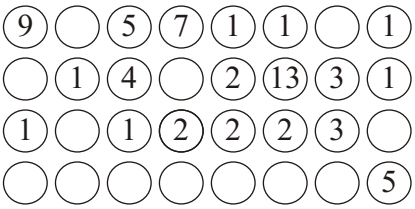
Position after [12] 11

(Ddamba could no longer avoid either exposing his 11 to attack or sowing it. At last Semakula gets the chance he has been waiting for.) [12].....**8,1(1)** [13] **2 15** [14] **3 13** (*If Ddamba can get several mobile seeds round the corner they will become very threatening in conjunction with the two sets of four seeds in the reversing pits 15 and 16. Naturally Semakula will try to prevent this, but with so many seeds it can be difficult to set up an attack on the end pits in advance.)* [15] **4 16** [16] **16 13** [17] **15 14**



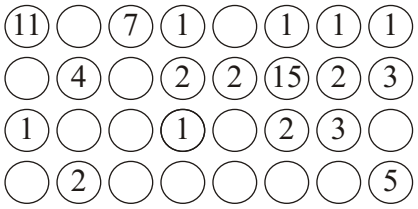
Position after [17].....14

(Over the last two moves Ddamba has had no choice and is lucky still to be in the game. He still has some chances as his seed in 16 is potentially well placed, but he would be much happier if he had a seed in 9 instead of 10 as he has insufficient seeds to threaten to reach 10 in one sowing.) [18] **1 8** [19] **2 12** [20] **4 2** *(Semakula could have captured here by playing 11. As it happens, he could have captured decisively on his next move with 3. Omweso tournaments are played at the very strict time limit of three seconds thinking time per move; overstepping the time limit results in the move passing to the opponent, so a player with a lot of mobile pits can easily be excused the missing of such opportunities.)* [21] **5 15** [22] **6 4** [23] **7 9**



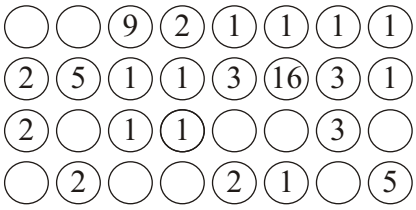
Position after [23].....9

(Suddenly Ddamba has an almost ideal counter attacking set up. With no inner-outer pairs of pits his seeds are quite safe while he can arrange his front row to create various attacking possibilities. As Semakula has a lot of singletons, I would probably play 12 at this point. I imagine Ddamba did not want to over-extend his position while Semakula has nine seeds in his 8.) [24] **13 15** [25] **14 13** [26] **15 1** (*Semakula has been forced to expose his seeds and Ddamba still has a promising attacking position.)* [27] **12 2**



Position after [27].....2

(On his previous move Ddamba could have captured 11 seeds by 2(1), but would have exposed his position as a result. Here with 8 he could capture 19 seeds, but expose his position to an even greater extent. Nevertheless, I would have been tempted to try that as there is a limit to how long one can build up the tension.) [28] **11 16** [29] **2 1** [30] **13 2** *(I get the impression that once Semakula gets a material advantage he is primarily concerned with keeping his position safe. I often find in various board games that players stronger than myself play with what seems to me to be either excessive caution or excessive aggression. Perhaps this demonstrates the greater depth of their positional judgment.)* [31] **14 3** [32] **12+15** (*At this point, whether intended or not is unclear, Ddamba made two moves before Semakula replied. At the speed they play, it is understandable that confusion can occur.)* [32].....**4** [33] **4 8**

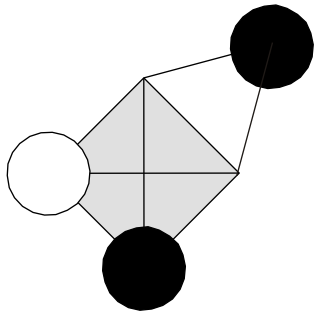


Position after [33].....8

(Now Ddamba makes the losing move. Had he played 8 on his next move he would capture all the available seeds, 40 of them. Semakula would still retain counter-attacking chances, but certainly it would have been much better than the move Ddamba chose. It is very strange that he could miss this move, even given the time restriction, as it is the natural culmination of his foregoing play. I wonder if he realized that he had taken an extra move, and this threw his concentration out of kilter.) [34] **5 9,1(1)** [35] **6 6.** *(Semakula wins.)*

To explore Omweso further, I recommend visiting the site of the International Omweso Society at www.omweso.org. The above game score is copyright of Brian Wernham of the IOS, and I would like to thank him here for permission to use it and for providing answers to many questions during my research. ■

As Michael mentioned, we covered another other great four-rank mancala, Bao, in previous issues. These Bao articles were interesting for their background and insight into the complexity of the game, but I am sure many readers would agree that learning the game actually to play it from these articles would have been difficult—Bao is the type of game that is best learned hands on with an experienced player. Omweso is a different kettle of fish entirely. I am sure readers will be able to play it and enjoy it right away after reading through this article and collecting together the necessary beans and containers. Mancala is fun, and it offers a completely different gaming experience for those raised on the traditional western fare. – Ed.



ONYX

Analysis of a Game

by Larry Back

This is an analysis of a game played between myself and Kerry Handscomb in the round robin portion of the *AG* Onyx tournament. By the time this game started Kerry and I had already played eight games by e-mail. Somehow, I had managed to win all eight of those encounters. My five-year head start in discovering the unique tactics and strategy of Onyx had made it easy for me at first but with each game Kerry clearly was getting the hang of it. It seemed that it was just a matter of time before I finally lost. The question was: now that it really counted, would I be able to beat Kerry one more time? One big mistake I made before the game even started was to send Kerry an article detailing everything I knew about the tactics and strategy of Onyx. Had I been a little smarter, I would have hung on to that article until well after our game had begun. (By the way, this analysis refers to some concepts introduced in that article, published in *AG6*, so a review may be helpful.)

1.c8

To start the game Kerry places a black piece on c8. This is meant to be a neutral move whose purpose is to leave me in a quandary as to whether to take it and play Black or let Kerry have it and play White. We had both played this first move before. It seems about right as a neutral move although it is hard to say given the relatively few recorded games of Onyx that have been played so far. The downside for Black is that c8 is a little too close to the black piece at a7 and it is awkwardly placed since White can easily play between those two pieces with a move to b8. The upside for Black is that c8 extends a black chain along the West edge somewhat and threatens to connect to the North side. In seven of the eight games I had played against Kerry I ended up playing White for some reason. So as not to break with tradition, I decided to play White this time as well and let Kerry have c8.

2.d4

This is a move I like very much. It is on the main diagonal, not too far from the middle of the board and not too far from the edge of the board. With an empty board starting position one would be inclined to play to the middle early in the game. However, the initially placed edge pieces have the effect that each player threatens early in the game to build a chain along the edge to connect their two sides. As a result, those edge pieces make the middle and the corners of the board relatively equal in strategic importance. Therefore, it seems that moves that are not too far from the corners and not too far from the middle are optimal in the early going. A white piece at d4 threatens to connect to the West side and then extend toward the white piece at f1 or over to the middle of the board. Black typically has two options here. One option is to play 3.a3 with a continuation like 4.b2, 5.b3, 6.c2, 7.c3, 8.d2, 9.d3, 10.e2 where White manages to link the two edge pieces at f1 and g1 to the West side along the South edge. However, this chain does not include the original d4 piece and has very little influence over the rest of the board. The other option for Black is to play 3.c3, 4.c4, 5.e3, 6.d3, 7.e2, 8.e1, 9.d2 where Black ensures a connection of his e3 piece to the South side while White ensures a connection of his d4 piece to the West side. (I use the word 'ensures' loosely since with connection games it is often the case that a 'sure' connection has to be sacrificed in order to stop another threat.) Yet another option is to just leave the situation for now and see how things develop. This is what Kerry decides.

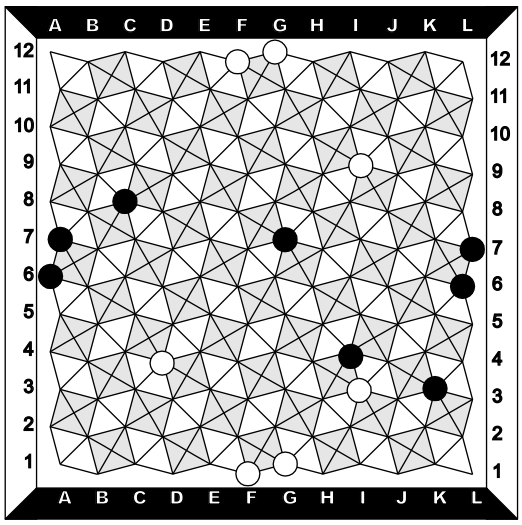
3.i4, 4.i9

So far this is a typical beginning with corner moves that are not too far from the middle and not too far from the edge.

5.g7

Kerry makes an early move to the middle perhaps with a plan to play h10 at some point thereby creating a long diamond connection with his g7 piece.

6.i3, 7.k3



Position after 7.k3

I challenge Kerry in the South East corner with 6.i3 and he responds with 7.k3, which has a long diamond connection to his piece at l6. I can play 8.kl45 to break the long diamond connection or I can try 8.k2 which might lead to 9.j3, 10.j2, 11.i2*, 12.j2, 13.i3, 14.i1 leaving me with a chain connecting f1 to the East side along the South edge. But this would come at the cost of a capture and very little influence for my f1-k2 chain. I decide to leave the situation in the South East for now and instead play in the North West.

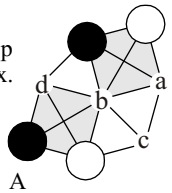
8.c10

This move is closer to the edge than other choices like d9 or d10. The advantage of this move is that Black cannot stop c10 from connecting to the West side. The disadvantage is that c10 is further away from both the white piece at f12 and the middle of the board. The c10 move invites Black to play e10 since a black piece at e10 cannot be stopped from connecting to the North side. For example, if White replies with de1112 then Black can play c11, taking

advantage of White's c10 piece to create a duplex connection with e10. However, White can then make what I call a *chimney formation* with a move to e9 that cuts Black's e10 piece from extending towards the middle. See the following description.

Chimney formation

The *chimney formation* is shown on the right. With a little imagination one can see that the top white piece is like a chimney on top of a duplex. Black can only stop the white pieces from connecting by giving up a capture. White is threatening to play 'a' forming a diamond connection or 'c' forming a duplex connection. A Black move to 'a' or 'b' leads directly to a capture while a Black move to 'c' prompts White to play 'a.' Now Black must play 'b' to stop White from connecting, but that permits White to make a capture with 'd.'



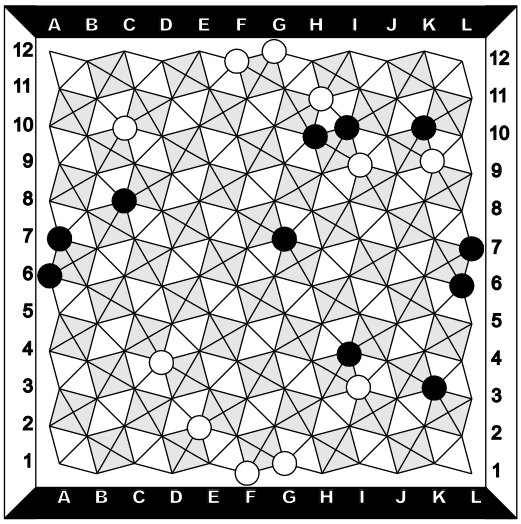
9.h10

Kerry switches to the North East corner with 9.h10, forming a powerful long diamond connection with his central g7 piece.

10.h11, 11.k10, 12.k9, 13.i10

The early moves of Onyx usually involve battles in the corners. Quite often no clear winner emerges from these battles. As a result of the battle in the North East Black ensures a connection of his piece at h10 to the North side, while White ensures a connection of his piece at i9 to the East side.

14.e2



Position after 14.e2

I decide to move the battle to the South West with e2. Perhaps this is not a priority given that Black has no pieces in that area. In fact, this move never did help me and may have been a game losing mistake. In retrospect, a move around the middle would have been better. But just where to play in the middle is difficult to say at this early stage.

15.j7

Without 15.j7 White has the threat of a sequence like 16.k4, 17.l4, 18.j7, 19.k8, 20.i8, 21.jk56, 22.k5, 23.l5, 24.k6 with a resulting connection of the white piece at i3 to the East side. 15.j7 puts a stop that threat.

16.k2

Now with a white piece at e2 I try the k2 move. White is now threatening to construct a chain along the South edge that would link the West and East sides of the board.

17.h2

Kerry needs to break up the chain that I am constructing along the South edge. 17.h2 seems to be effective. If I play 18.g3, then 19.j3 ensures that Black's k3 piece is linked to the South side.

18.i2

This move forms a house with the two white pieces at i3 and k2 and stops the threat of Black linking k3 to the South side. However, perhaps 18.g3 was preferable in order to prevent Black from barging up the middle by taking the g3 move for himself. But my plan was to follow Black's 19.g3 with 20.g2, which forces a capture. It seemed like a good idea at the time.

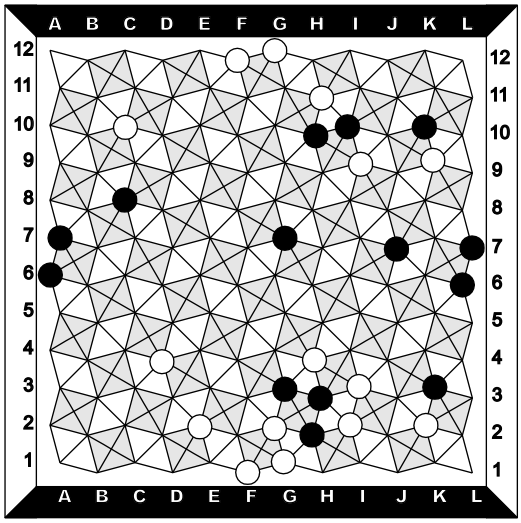
19.g3

Now Kerry plays the move I might have played and extends a chain starting at h2 toward the middle with a square connection to g3.

20.g2

Now I make my attacking move. Black cannot avoid a capture.

21.h3, 22.h4*, 23.h3



Position after 23.h3

24.i4

Although it did not occur to me at the time, instead of 24.i4 I might have played 24.g4 and let Black make a capture. The continuation may have been 25.i4*, 26.h4, 27.i3, 28.h8, 29.g8, 30.h7. But after that Black has 31.e4, which is very effective at stopping me from connecting to the West side in the South West corner. The only way that I can stop Black's e4 piece from connecting to the South side is by playing 32.e3, which could be followed by 33.d3*, 34.e3, 35.d4, 36.d2, 37.b3, 38.b2, 39.c2, 40.c3*, 41.c2, 42.d3, 43.b5, 44.c4, 45.b4, 46.d6, 47.c9. However, I am still prevented from connecting to the West side, and Black should have no problem extending the West edge chain of black pieces northward with a threat to connect to the North side in the North-West corner or to connect to any of the black pieces at g7, g8 or h10. Another plan after 31.e4 might be to play 32.e5, 33.d5, 34.d9, 35.d6, 36.e6, 37.de78, 38.d7, 39.d8, 40.b7, where I seem to have a threat to go northward or southward from b7 and possibly connect to the West side. It turns out neither threat works; again, my efforts to connect to the West are foiled.

25.g4

Now Kerry takes the g4 move for himself as he extends his chain ever northward.

26.h6

Somehow I must stop Black's h2-g4 chain from linking to the black piece at g7. But the continuation 26.g6, 27.f6, 28.f7, 29.b11, 30.b10,

31.c9, 32.d7, 33.b5 seemed unappetizing for me. (Why 29.b11? It comes in handy in some continuations, as we will see.) It appears that I would not be able to stop Black's b5 piece from linking to the black piece at c9: for example, 34.b8, 35.c6 or perhaps 34.b6, 35.a5, 36.b8, 37.c7, 38.b7, 39.c5. Also, I cannot stop Black's b5 piece from linking to the South side: for example, 34.bc34, 35.c5, 36.de56, 37.d5, 38.e5, 39.e4. Another try is 34.b8, 35.c6, 36.c5, 37.b6, 38.c4, 39.b4, 40.c2, 41.b3, 42.b2, 43.c3, 44.d2, 45.d3, 46.f4, 47.e3, 48.f3, 49.f2*, 50.f3, 51.e2, 52.e1, 53.d1*. Furthermore, it appears that I would not be able to stop Black's c9 piece from linking to the North side: for example, 34.d10, 35.d9, 36.f10, 37.f9, 38.e9, 39.e10*, 40.e9, 41.d10, 42.de1112, 43.d11, 44.d12, 45.c11, 46.c12, 47.b12. Or I could try 34.d10, 35.d9, 36.e10, 37.e9, 38.fg910, 39.f10, 40.g10, 41.f11, 42.g11, 43.e11, 44.e12, 45.d11, 46.d12, 47.c11, 48.c12, 49.b12. Another interesting attempt is 34.f11, which forms a stand off with Black's h10 piece. But then we have 35.e9, 36.d9, 37.d10, 38.e10*, 39.d10, 40.c11 (or 40.d12, 41.e9*, 42.e10, 43.d9, 44.fg910, 45.f10, 46.g10, 47.e12, 48.e11, 49.d11*) 41.e9*, 42.fg910, 43.de1112, 44.d11, 45.e11, 46.e10, 47.f10*, 48.e10, 49.d9, 50.f11*, 51.f10, 52.g10, 53.e11*. Whew! There are other moves I can try to stop c9 from connecting to the North side, but none seem to work. With the situation looking somewhat gloomy, I decide to try setting a trap with 26.h6. In hindsight, I should have taken my chances with 26.g6.

27.e5

I was hoping Kerry might play 27.g6 after which I would have played 28.g5, with a possible continuation of 29.h5*, 30.g5, 31.h4, 32.j6, after which I have three threats: 1) connect j6 to my piece at i4 and to the East side; 2) connect j6 to the East side at l4 or l5; 3) connect j6 to my piece at k9 and to the East side. Black has no move to stop all three of these threats. For example, if he tries 33.i5 then the continuation 34.i6, 35.j5, 36.k6, 37.k7, 38.k5, 39.l5, 40.k4, 41.l4, 42.j4 could ensue and my piece at j6, and therefore my piece at g5, is connected to the East side. We might now play 43.d5, 44.e5, 45.e4, 46.d9, and it is difficult to say who is winning.

Although Kerry did not go for the 27.g6 move at the very least I thought he might play 27.fg56, after which a continuation of 28.g6, 29.f6, 30.f7 leaves us in position similar to the one where I had played 26.g6.

Instead of 27.g6 or 27.fg56, Kerry surprises me with 27.e5 as he sets up an opposition long diamond to my piece at h6. Now if I play 28.f5 Black can play 29.g5 with a threat to connect at g6 that I can only stop at the cost of a capture. For example, 30.g6, 31.f6*, 32.g6, 33.f5, 34.f7, and again we have a position similar to the one where I had played 26.g6, but now it is even worse for White. At this point I am starting to regret having sent that article.

28.g6, 29.d7 (Diagram top right.)

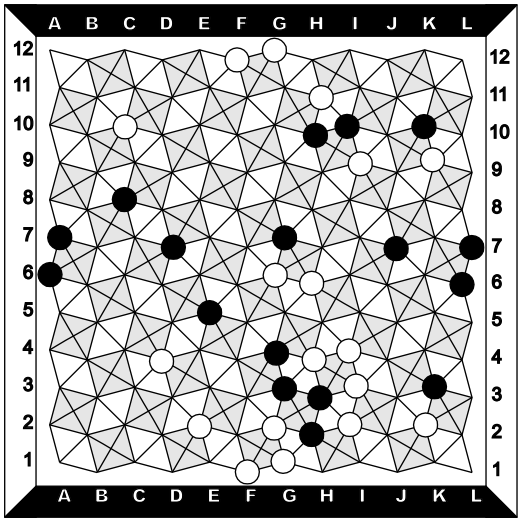
Now Kerry sets up another opposition long diamond, this time between his piece at d7 and my piece at g6. Darn that article!

30.f7

There is no point in trying to stop Black's e5 piece from connecting to the South side. If I try 30.f5 then we have 31.e4, 32.f4, 33.e3, 34.f3, 35.f2*, 36.f3, 37.e2, 38.e1, 39.d2, 40.d1, 41.c1 and Black's e5 piece is linked to the South.

My only chance now is to stop Black's e5 piece from connecting to the North side. I could play 30.e6, but then 31.f6 leads to 32.f7 (it seems I must stop Black's f6 piece from linking to g7 even at the cost of a capture) 33.e7*, 34.f7, 35.e6, 36.d9, 37.ef89, 38.f9, 39.e9, 40.f10, 41.e10, 42.de1112, 43.c11 and Black wins.

What happens if I allow Black to link his f6 and g7 pieces? After 30.e6, 31.f6 I could try 32.e7 with a continuation of 33.f7,



Position after 29.d7

34.gh89, 35.f9, 36.g9, 37.e10, 38.de1112, 39.c11, where Black uses house, diamond and duplex connections to link to the North side. Another interesting attempt may be 30.e6, 31.f6, 32.gh89, which could be followed by 33.f9, 34.g8, 35.f8, 36.f7*, 37.e7*, 38.f8, 39.c9, 40.d10, 41.d9, 42.g9, 43.f10, 44.g10, 45.g11*, 46.g10, 47.f11, 48.h11*, 49.g11, 50.h12, 51.h10*, 52.h11, 53.g10, 54.j12, 55.k11, 56.j10, 57.i11, 58.i12, 59.j11, 60.k12, 61.l12, and Black connects to the North side.

31.e7, 32.e10

I am grasping at straws here. If 32.f10, then 33.b11, 34.b10, 35.e10, 36.e8 (if 36.e9, then 37.c9) 37.f8, 38.g8*, 39.f8, 40.g9, 41.f9, 42.g10, 43.e9, 44.de1112, 45.c11 and Black wins.

33.e9, 34.e8, 35.c9, 36.Resign

I do not need to prolong things any further, especially in an e-mail game. The black piece at e9 is connected to the South side already. To stop it from connecting to the North side, I could try 36.fg910, but then we have 37.g9, 38.f9, 39.f8*, 40.g8*, 41.f9, and it is all over. Full credit goes to Kerry for a game well played. My first e-mail loss at my own game! Oh well, it had to happen eventually.

Thanks to Douglas Zander Onyx can now be played on Richard's PBeM Server (http://www.gamerz.net/pbmserv/). Although the ASCII representation of the Onyx board is a little difficult to use there are two web sites that translate the ASCII representation into a very nice graphic representation. One web site, http://www.mi.uib.no/~taral/pbem/, is by Taral Guldahl Seierstad of Norway. It has graphics for about forty other PBeM games in addition to Onyx. The other web site, http://www.math.lsu.edu/~wamelen/gamerz.php, has graphics for thirteen other games. I urge all PBeM players to give these web sites a try. ■

Despite my best efforts Larry went on to win the tournament. Congratulations! Oriol Comas i Coma and I were joint runners up. – Ed.

Solutions to Lasca Problems

Problem 1: 1.a1b2 c3:a1, 2.a3:c1, and Black is blocked.
Problem 2: 1.b4a5 a7b6, 2.c1d2 b6a7 *(Black must move to the corner because 2....b6c5 would be followed by 3.a5b4 c5:a3, 4.c7b6 a3:a7, 5.b4c5 and Black is blocked.)* 3.d2e3 a7b6, 4.e3f4 b6a7, 5.f4g5 a7b6, 6.g5f6 b6a7, 7.f6g7+ a7b6, 8.g7f6 b6a7, 9.f6g5 a7b6, 10.g5f4 b6a7, 11.c7b6 a7:c5, 12.f4g3 c5:a7, 13.a5b6 a7:c5, 14.b6:d4 c5:e3, 15.d4:f2 e3:g1, 16.g3:e1, and blockade!

This Labor of Love by Connie Handscomb

Love is patient, love is kind. Unless there is a deadline involved. Unless you are suffering from writer's block and are being threatened to be replaced with a cartoon if you don't perform on cue. The spontaneity of my creation is severely hampered when I am reminded that I have only managed 61 words in print and have at least another 400 to do within the next few hours. As I sit mulling over the quiet keyboard, I mutter to no one in particular that love is meant to freefall to be its most creative, not be mired in a warped timeline of responsibility. That to be too severely structured contributes to spoilage every now and again, and no matter how well intentioned my dedicated focus towards a positive finish, the end result is surely destined to be tainted with the tension of stricture. I need inspiration. I reflect upon the events of our last deadline. Wait a minute. *Task? Labor* of love? But, of course! Giving birth to a new creation is certainly not without its indignities. Nor is love logical. So no matter how much you might love what you are doing, no matter if every known precaution is taken to deal adequately with every eventuality, the power of misaligned planets can still present us with enough abnormal energies to bring our coping skills to an abrupt standstill. There surely was a message to us when, en route to meet yet another deadline, our usually reliable vehicle became uncustomarily temperamental and stopped stone cold dead—smack in the middle of our stimulating city's most recognized bridge on the week's most challenging day during the hours of the busiest traffic flow. We were, so to speak, crossing over to bridge a gap, but instead suffered embarrassment as we delayed movement waiting for assistance. While all this might contribute sufficiently to building one's character, a close correlation between "humiliating" and "humble" was sorely recognized. At least while I reflect upon that past event, the tip of the forefinger I accidentally lopped off with our new kitchen knife does not throb anymore, and since the enormous bandage was removed it is far less a hindrance on the computer than it was previously. I resign myself to the writing, and affirm that due to my great passion it will flow smoothly and unencumbered through to completion. The glow emanating from the loving aura of what I am doing will create a positive flow of energy. I ultimately project that contributing magnanimously to this labor of love will result only in a fairytale ending whereby we all live happily ever after in the end. It will not be Love's Labor Lost after all, for surely I have now brainstormed my way through to submitting the required number of words necessary to complete the designated passage allotted me. So there. Amen! ■

Solutions to Dameo Problems

Problem 1: 1.c5c6 a4a3 *(If 1....h4h3, 2.d5b7 h3h2, 3.c6a8+ a4b3, 4.b7b8+ b3c2, 5.a8h1 wins.)* 2.d5b7 a3a2, 3.c6a8+ a2a1+, 4.b7c8+ *(Threatening c8a6.)* a1h1, 5.a8a1 *(Threatening c8c1.)* h1f3, 6.a1h1 h4g3 *(If 6....f3h3, 7.c8h8 wins.)* 7.c8g8 g3f2, 8.h1f1 wins.

Problem 2: 1.g7h8+ h3g2 *(If 1....g3h2?, 2.f1g2 wins.)* 2.h8a8 b2a1+ *(If 2....g3g1+, a8a1 wins.)* 3.a8h8 a1:g1, 4.h1:f1 g2h1+, 5.h8a1 wins.

Problem 3: 1.f1g2 c4:a4, 2.h1f3 *(2.g2f3? would have dire consequences at Black 4.)* f4:f2:d2:b2, 3.c1c2 b2:d2, 4.d1:d3:d5:b5:b7 *(If the man on g2 had stayed back on h1, Black would now have 4....h3g2. As it is, 4....h3h2? is met by 5.b7a8+ wins.)* a4a3, 5.b7a8+ a3b2, 6.a8a1 h3h2, 7.a1a2 wins.

Problem 4: 1.g4f5 *(If 1.b3a4? a5b4, 2.a4:c4 f8g7!)* e5:g5, 2.h5:f5:f7 f8:f6, 3.h6g7 g8:g6, 4.b1b4 h8:h6, 5.h4g5 g6:g4, 6.b3a4 b5:b3:b1+, 7.a4:a6:c6:e6:g6 h6:f6, 8.d1d2 d3:d1+, 9.e1:c1:a1 e3:e1:g1:g3, 10.h2h4 f3:f1+, 11.h3:f3:f5:f7 f1:f8, 12.h4:f4:d4:d6:d8:b8+ f8:a8:a2, 13.a1:a3 Wipe out!

Solution to Bashne Problem

1.a5b6 a7:c5, 2.a3b4 c5:a3, 3.h6g7 a3:c5, 4.b4:d6:f4 e5:g3, 5.c3b4 c5:a3, 6.g1f2 b6:g1, 7.g7c3 f4e3, 8.c3d2 wins.

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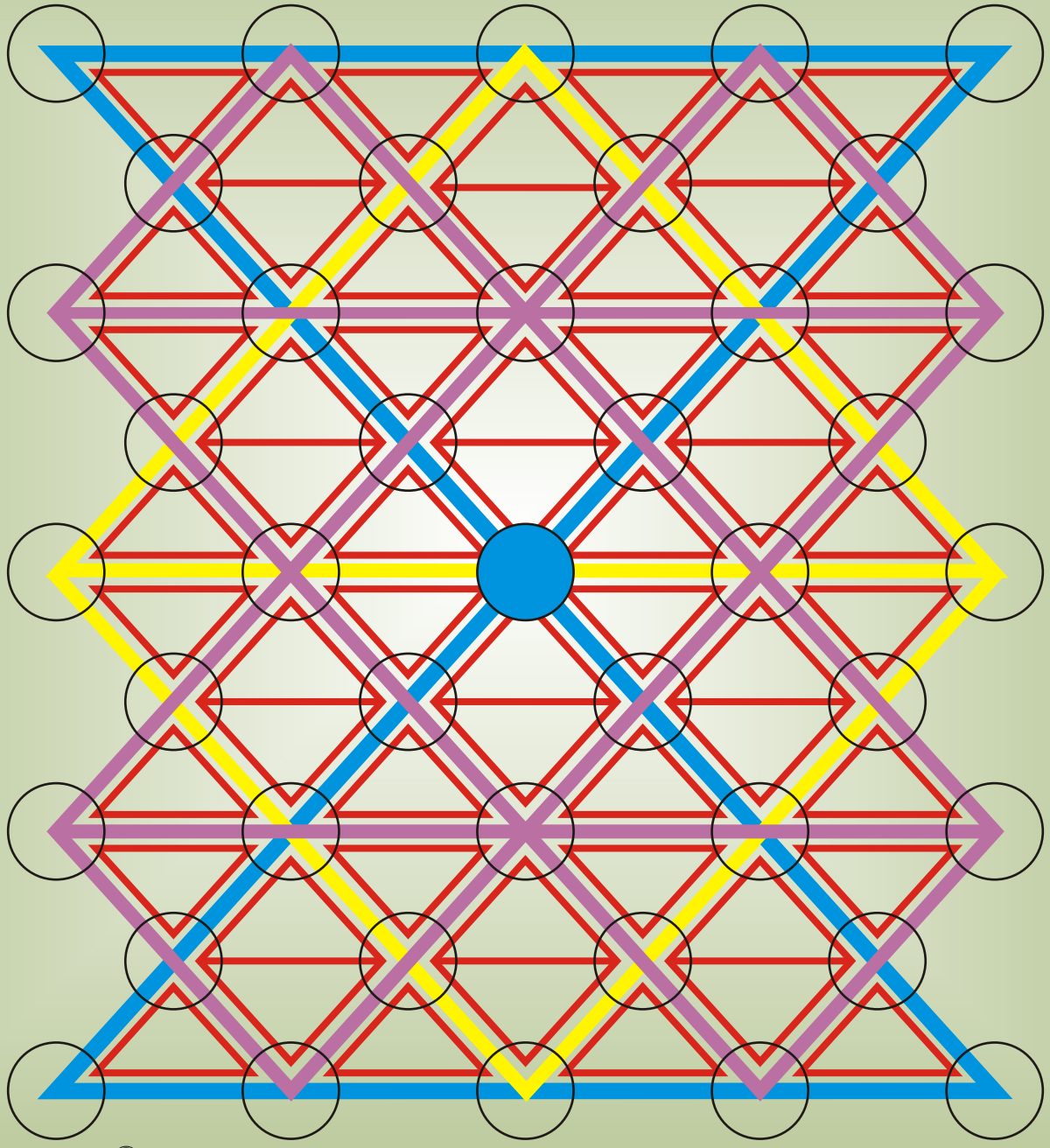
THE GAME OF TRIANGLES

GLE'X™



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