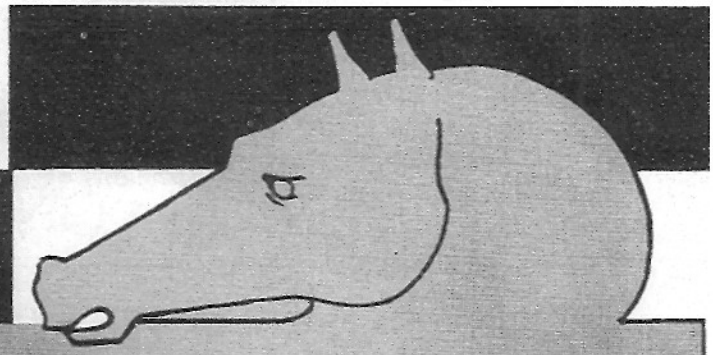
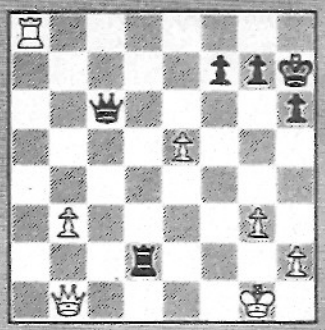
CHESS



Will a chess computer ever be able to take on a grandmaster and give him a challenging game? Well, maybe the masters of the game will become wary of the machines after reading the results of a fascinating experiment reported by grandmaster Raymond Keene in Massacre at Merano — his account of last year's world championship between Anatoly Karpov and Viktor Korchnoi.

After the match some of the positions from the eighteen games were put to Sci Sys Chess Champion Mark V, one of the strongest of the commercially available chess machines.

The results were impressive on a number of occasions the computer was able to improve on the play in the match. The following position occurred in game nine, with Korchnoi White.

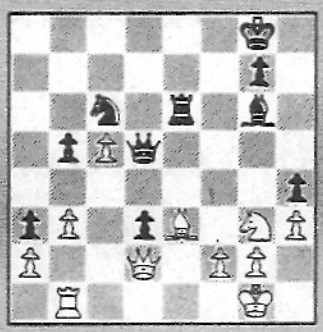


Korchnoi has just played 41. Q-N1ch and Karpov now replied 41. . . . P-N3 and the game continued 42. Q-KB1 (forced to avoid mate on KN2), Q-B4ch; 43. K-R1, Q-Q4ch and white resigned (after 44. K-N1, R-Q8 wins the queen). This win gave Karpov a 4-1 lead — draws did not count in the match.

It is hard to imagine that Black's play can be improved here, but in the diagrammed position Chess Champion Mark V, after about 30 seconds analysis, found the improvement 41. . . . R-QB7!

This kind of move is difficult for a human player to perceive, since it pins Black's rook against his king, an action which tends to be avoided instinctively by strong players. In this case, White again has to play 42. Q-KB1, to avoid checkmate and then 42. . . . R-B8 wins White's queen, more quickly than by the line chosen by Karpov!

In the next position, Korchnoi — Black — with very few minutes left to reach the time-control on move 40 had hastily moved his queen to Q4. Karpov now has 35 minutes to make his next move but — probably to keep up the pressure on Korchnoi — he replied instantly and played 40. N-B1 to save his threatened knight.



Korchnoi now played 40. . . . B-K5! With an irrestible attack on White's king knight pawn.

Karpov played 41. B-B4 and adjourned the game until the next day, but resigned without resuming — after Black's 41. . . . BXKNP; 42. N-K3, Q-B6; 43. NxB, R-K7; 44. Q-Q1, QxBPch; 45. K-R1, QxN mate is one likely continuation.

Karpov's blunder in the diagrammed position gave Korchnoi his first win of the match.

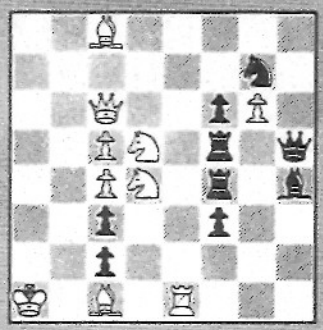
How did Mark V handle the position? After 38 seconds' analysis, it found the far superior alternative 40. N-K2! Now Black cannot take the knight without losing his queen and white threatens 41. N-B4 which would fork Black's queen, rook and bishop, attack the queen pawn and defend White's own king knight pawn.

These and other examples clearly impressed grandmaster Keene, not least because of Karpov's decisive and accurate play throughout almost all the match.

The same machine scored a further success in a challenge contest arranged against grandmaster Dr John Nunn — an extremely strong chess-problem solver — at the end of a recent international tournament at Brighton. Man and machine were each set six difficult problems, selected by the vice president of the Problem Commission of the International Chess Foundation.

One of the problems was this prize-winning composition by the Soviet problemist L. Zagorujko, which appeared in 1972.

It is White to play and mate in four moves. Nunn was unable to find the solution to this extremely difficult problem, but the Mark V did so; in fact it found *three* solutions — an extremely embarrassing outcome since a problem is considered spoiled if there is more than one solution found.



As an indication of the complexity of this problem, the reader is invited to work out the analysis after the key move 1. R-K8!

For a computer to do this is impressive, but to find two other solutions was beyond the powers of the many problemists who have examined the position since then.

However, there is a considerable difference between analysing a problem position and playing a game.

The Mark V's achievements should not be taken to suggest that a grandmaster program is imminent, but they do show that in some areas of the game computers are already capable of more effective deep analysis than humans.

By Max Bramer