MISSING A WON VARIATION

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In our article "Proof-Number Search and Transpositions" (ICCA Journal, Vol. 17, No. 2, pp. 63-74), we described methods to make pn-search applicable to directed (a)cyclic graphs, such as encountered in chess. In order to show the strengths and weaknesses of these methods we provided a detailed analysis of two of the positions investigated by our program.

In the process of analyzing the data provided by our program, indicating that the second position denoted by C284 (Diagram 2, p. 73) is a mate-in-10, we have made an error. We presented a mate-in-10, which contains a suboptimal move by White. If White plays optimally, the line converts into a mate-in-11, as shown below.

After 1. ... h1B 2. Kh2 Ba8 3. Kg3 Bb7 (to lose a tempo)
4. Kh3 (instead of Kh2) Black cannot win within 7 moves (as required for a mate-in-10), but needs one more move.


We remark that the mistake made was an illustration of human fallibility, for which the program is not to blame: indeed a mate-in-10 exists as shown below. The correct and complete variation reads: 1. ... h1B, 2. Kh2 (Kh3 leads to a mate-in-9 after 2. ... Kf2 3. Kh2 Ba8 4. Kh3 Bf3) 2. ... Bf3 3. Kg3 (Kh3 leads to a mate-in-8) Be2 (Bd1 or Ke2 are also leading to mate-in-10) 4. Kh2 (Kh3 leads to a mate-in-9) Kf2 5. Kh3 Bf3 6. Kh2 Bxg4 7. Kh1 Bh3 8. Kh2 g4 9. Kh1 Bg2+ 10. Kh2 g3 mate.

Thus, despite the incorrect analysis, the claims regarding our enhancements to pn-search remain unaffected.

We are utterly grateful to Steve Dyson who took the trouble to write to one of us from as far afield as Kalulushi, Zambia. His program Kalulu specializes in chess problems of the type 'White to play and mate in n moves'. He adds to his analysis, gratefully reproduced above, that it is not clear from the text whether the incorrect solution to C284 is due to a typographical error (although this seems unlikely), an error in the coding of the algorithm or a counter-example to the paper's assertion that "a proof is reliable".


Reference


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