NOTES

EDITOR'S NOTE

In 'A Hypothesis concerning the Strength of Chess Programs' (ICCA Journal, Vol. 8, No. 4, pp. 209-218), a misunderstanding has caused straight lines to appear in Figs. 3 and 5, contrary to the author's intention as expressed in the *final* version submitted. The inclusion of these lines is regretted, the more so as unwarranted conclusions have been drawn from them by subsequent authors: see David Levy, this Journal, Vol. 9, No. 2, pp. 81-86, esp. p. 82, and Peter Frey, this issue, pp. 175-179, esp. p. 175.

Close reading of Professor Newborn's article will show that his conclusions do not exploit the linearity suggested, so that their validity stands unimpaired.

A NOTE ON KBBK

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By his publication in Computerschach und Spiele (1985, Vol.2, No.5, pp. 27-28) our attention has been drawn to Hans Zellner's efforts to compress databases into a Commodore C64. The matter became more acute after we noted a discrepancy between our own publication (ICCA Journal, Vol. 8, No. 3, pp. 141-149, esp. p. 145) and Ken Thompson's results as published in EG (1986, Vol.VI, No.83, p. 23).

The discrepancy seemed most serious at first blush: whereas we listed 16 KBBK positions with a 19-move maximin, Roycroft reporting Thompson listed no more than 15 of these. The dispute was soon resolved: the respective results were identical, except for the fact that we had chosen to distinguish between the positions WKa1, Be7, Bd3, BKd4 and WKa1, Bg5, Bc4, BKd4, whereas Ken Thompson, noticing their relation by symmetry due to reflection in the a1-h8 diagonal, had coalesced them. Hence, the discrepancy did not point to a difference, but merely indicated a different classification of positions by symmetry class. The material identity of our respective results was confirmed by Hans Zellner of Mallersdorf, FRG, who favoured us with a letter contained in the note to follow.

COMPRESSING DATABASES DOWN TO MICRO SIZE

Hans Zellner

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Over the past few years, I have attempted to build databases for various simple endgames so as to fit the rather limited memory of my Commodore C64. I have been successful for KRK (July, 1985), KQK (September, 1985) and KPK (November, 1985). Results are available on request and fully confirm extant publications; they have been expressed for WTM and refer to the full board. The latter frame of reference is not unimportant because what is stored in the database sensitively depends on the reflections used. As a

case in point, I may mention that the 10-squares triangle for the KB suffers from a 20 percent storage redundancy.

This arises from the BK finding itself within the triangle and on the board's diagonal. In order to eliminate most of this, I designed my program further to restrict the WK by an additional reflection whenever applicable, thus achieving 18 percent of savings in storage. Each of the three databases and the analysis programs accessing them are small enough to be contained in RAM. Any legal position entered is responded to by 'mate in n', with all optimal white moves and their optimal black responses, all within seconds. I am quite prepared to distribute all three programs to all sending me a C64-compatible floppy.

It is my opinion that making databases accessible to microcomputers will contribute greatly to making them accessible to all interested parties.

In passing I mention that my KPK database fully confirms the results of A.R.D. van Bergen and Th. van der Storm (ICCA Journal, Vol. 9, No. 1, p. 35). My program is also in full harmony with Bramer's results as published in this Journal (Vol. 9, No. 3, pp. 150-151), when allowing for Bramer's referring to the half-board. As a point of interest, I supply the following tables from KQK and KRK, numbering referred to the full board.

KQK Legal positions: 144,508 (WTM) containing:			KRK Legal positions: 175,168 (WTM) containing:		
2,448	mates in	1 move	1,512	mates in	1 move
4,876	mates in	2 moves	4,676	mates in	2 moves
9,008	mates in	3 moves	3,852	mates in	3 moves
19,972	mates in	4 moves	1,900	mates in	4 moves
26,148	mates in	5 moves	4,848	mates in	5 moves
32,080	mates in	6 moves	8,708	mates in	6 moves
32,216	mates in	7 moves	11,320	mates in	7 moves
15,048	mates in	8 moves	17,172	mates in	8 moves
2,704	mates in	9 moves	20,088	mates in	9 moves
8	mates in	10 moves	19,016	mates in	10 moves
			20,476	mates in	11 moves
			21,480	mates in	12 moves
			17,824	mates in	13 moves
			16,136	mates in	14 moves
			5,244	mates in	5 moves
			916	mates in	16 moves

In July 1986, I proudly crammed a KBBK database into my C64, an effort which had seemed impossible. At long last, a new method enabled me to compress all the necessary information into the 50 kB of free memory available. Mating distances were derived from a 41 kB database and gave rise to yet another database of 160 kB, containing all that is needed for the analysis program accessing it. The latter now runs on my C64 with a 128 kB memory expansion which I plan to retrofit to the plain C64 as well.

My KBBK database results concur with Van den Herik and Herschberg's in the ICCA Journal (Vol. 8, No. 3, pp. 141-149): I derived the same 16 positions with a 19-move maximin, adding up to 120 positions for the full board, because the last two positions in table 2 there are equivalent up to reflection in the a1-h8 axis. My program also confirms all optimal and equi-optimal moves as well as all Black responses in the samples on pp. 145-147.

[From a personal communication of the author, dated December 12, 1986, it transpires that 128 kB memory is no longer necessary and that the full KBBK algorithms now run on a plain C64. –Ed.]