Zbl 085.03802
Erdős, Pál; Rado, R.
A theorem on partial well-ordering of sets of vectors. (In English)
J. London Math. Soc. 34, 222-224 (1959).

In a earlier paper (Zbl 057.04302) *R. Rado* considered, for any abstract set S and any ordinal n, the set $W_s(n)$ of all vectors of "length" n over S. If one puts further $W_s(< n)$ equal to the union of all $W_s(m)$ for all $m < n$, then any quasi-order $\leq$ on S induces a quasi- order on $W_s(< n)$ defined by: $X \leq Y$ if and only if the sequences of components of X and Y satisfy $x_i \leq y_{t(i)}$ for each i and an increasing sequence of subscripts $t(i)$. *Graham Higman* (Zbl 047.03402) showed that if S is partially well-ordered, then so is $W_s(< \omega)$, and R. Rado showed (loc. cit.) that this is not generally true for $W_s(\omega)$. He conjectured, however, that for the set $V_s(n)$ of all vectors with only a finite number of distinct components, and the corresponding set $V_s(< n)$, it is true that $V_s(< n)$ is partially well-ordered if S is partially well- ordered, whatever the ordinal n. He obtained some partial results in this direction. In the present note the authors prove this conjecture for all n less than ω^ω. They state that a — longer and unpublished — proof by *J. Kruskal* stimulated their present proof.

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06A99 Ordered sets