

CHROM. 7442

Letter to the Editor

Flat bed

Sir,

Practice has shown that it is difficult to draw a hard and fast line between paper chromatography (PC) and (thin-)layer chromatography (TLC) as identical procedures are applicable in both techniques and as there are borderline cases in which both designations or neither of them apply. Thus, if paper is defined as a material made of cellulose fibres, glass-fibre paper would be classified under thin layers, whereas thin layers of cellulose would become a kind of paper. If, on the other hand, paper is considered to be a sheet made of matted fibres, irrespective of their chemical composition, and which may contain various fillers, some products designated as thin layers (but lacking a non-porous support) are, in fact, papers. Various porous or gel membranes and surface structures can also be used in types of chromatography similar to PC or TLC, but which are neither paper nor layers. Paradoxically, thick layers are considered to be special types of thin layers.

All these reasons make it a matter of practical importance to have a collective term which would encompass PC, TLC, thin-film chromatography, membrane chromatography and other types in which two dimensions prevail in the shape of the chromatographic medium, one of which is parallel and the other perpendicular to the direction of flow—in contrast to columns, capillaries and threads.

In the English-language literature, the term "flat-bed chromatography" has gradually found acceptance, but occasional warnings have been given against its use. Thus, S. Hara said at a Symposium¹ that this expression sounded very funny when translated into Japanese. In answering his comment, I pointed out that in this context, a bed is not a piece of furniture used (mainly) for sleeping (Fig. 1a), but is more like a river bed (Fig. 1b).



(a)



(b)

Fig. 1. Beds (see text).

However, I stressed that it should be left to English-speaking workers to retain the term or to introduce a better one. The term possibly need not be translated into Japanese in order to sound odd, judging from a letter by E. Heftmann to K. Macek, quoted here with their kind permission:

"By the way I don't like flat-bed chromatography at all and I have already taken the liberty of removing all beds from all chapters. What would it lead to if the authors used such expressions as double bed, bed wetting or bed efficiency?"

In fact, bed-wetting in the sense of the clinical syndrome of *enuresis nocturna* is very far from what the chromatographer has in mind.

I would therefore appeal to English-speaking workers to suggest a suitable collective name for the "planar", "flat", "sheet" (as suggested by H. H. Strain) or "layer" (in the broader sense of the word) types of chromatography. German writers need not bother about beds, they say "in Flächenanordnung".

The problem is not limited to flat-bed chromatography. The difficulty with chromatographic beds in general is that the term is sometimes used for the stationary phase (including the carrier, if present) through which the mobile phase flows (as in the case of the river bed, Fig. 1b) and sometimes for the whole volume of the column or sheet *including* the mobile phase.

An outsider can hardly anticipate the associations likely to emerge to the native speaker. Thus, for example, I would never have thought that the term "tank" is preferable to "chamber" before the British-born supervisor of my IAEA Fellowship advised me on the connotations of the latter term.

*Department of Biochemistry,
Faculty of Pharmacy,
Charles University,
500 27 Hradec Králové
(Czechoslovakia)*

I. M. HAIS

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I Discussions following the introduction by K. Macek, *J. Chromatogr.*, 78 (1973) 1.