"the only way to teach thinking is with concrete 'special' problems"

which occurs in Newton's '*Principia*'. Their original solutions quite often led to important theories, e.g. the optical-mechanical analogy used by Bernoulli in his elegant solution of the brachistochrone problem was the forerunner of the Hamilton-Jacobi theory, and the wave mechanics of de Broglie. The author's account of these original arguments is careful, pointing out gaps, and simplifying assumptions made, if any.

All these famous extremal problems, and also some others, are later solved anew in 'Part Two', in the thirteenth and fourteenth 'stories', this time by using the general

methods of analysis mentioned above. The book concludes by some remarks of a pedagogical nature in which the author argues forcefully that "*the only way to teach thinking is with concrete 'special' problems*". Equally, the compulsion to organize is characteristic of all science: making the right general definition, or weaving an elegant and useful theory out of some known but only vaguely related facts, is also 'problem-solving' of the highest order! This book does an admirable job of emphasizing this duality: without its cute and easy-to-state problems mathematics would become boring, without its powerful general theories it would become sterile.

K S Sarkaria, Department of Mathematics, Panjab University, Chandigarh 160 014, India.

Addendum

The Indian edition of the book "*Mathematical Analysis, A Straightforward Approach*" by K G Binmore, Cambridge University Press, Second Edition, which was reviewed in *Resonance*, April 1999, p.96 has been published by Foundation Books, New Delhi, 1998.

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