—NEW JOURNALS—

Use of the common denominator

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IMA Journal of Mathematics Applied in Medicine and Biology. Editor R. W. Hiorns. *Oxford University Press. 4/yr. UK £54, North America $138, elsewhere £69.*
Communications in Statistics — Stochastic Models. Editor Marcel F. Neuts. *Dekker. 3/yr. $110 (institutional), $55 (individual).*

THE EARLY numbers of the *IMA Journal of Mathematics Applied in Medicine and Biology* have papers (all handsomely printed and illustrated) on human genetics and population genetics, neurobiology, demography, ecology, exploitation of living stocks, epidemiology, parasitology, morphology, chemotherapy, radiotherapy, chemotaxis and human physiology.

What brings these articles together is their common use of mathematical language, just as the common use of English brings a wondrous pot-pourri of scientific topics together under the covers of *Nature*. The mathematical language is as diverse as the subject matter. The first issue alone uses diffusion equations, maximum likelihood, partial differential equations of continuum mechanics, stability theory of non-linear difference equations, computer simulations based on generating functions and matrix theory.

The declared statement of purpose of the new *IMA Journal* is to seek "to stimulate research in which mathematicians are seen to be tackling problems which those in the medical and biological fraternities would like addressed". In its aims and its achievements, it joins a sibship of journals that present mathematical analysis of biological and medical problems. Among these are the *Journal of Theoretical Biology, Bulletin of Mathematical Biology, Journal of Mathematical Biology, Biophysical Journal, Ecological Modeling, Mathematical Biosciences, Theoretical Population Biology, Journal of Mathematical Population Studies, Computers in Biology and Medicine* and many with a more statistical slant, such as *Biometrics, Biometrika, Biometrische Zeitschrift* and *Statistics in Medicine.*

A question suitable for discussion in the corridors of scientific meetings is how much these journals influence biology and medicine. It is at least a plausible conjecture that most researchers in biology and medicine are reached and influenced primarily by the mainline journals of their fields. If this is so, then mathematicians who study biological and medical problems will find the new *IMA Journal*, and its siblings, useful for communicating with one another and for developing their wares to a point where they command the attention and space of the mainline biological and medical journals.

Reproduced photographically from the authors' final typescripts, *Communications in Statistics – Stochastic Models* offers a visual diversity as great as the substantive diversity of the new *IMA Journal*. The emphasis is entirely on the theoretical analysis of models. Articles in early issues deal extensively with queuing theory. Scattered papers discuss reliability theory, self-similar processes, flows in networks with random capacities and parallel processors. A lone stochastic model of cancer metastases represents the only overlap with the *IMA Journal*. No data of any kind appear and numerical illustrations of results are rare.

The mathematical level of the exposition is advanced and sophisticated, as if the authors aspired to *Annals of Probability, Zeitschrift für Wahrscheinlichkeitstheorie und Verwandte Gebiete*, or the Russian journal *Theory of Probability and Its Applications*. The editor's preface emphasizes "the stimulating new problems generated by the modelling of computer and telecommunication systems, of inventories, queues and biological popu-

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lations". If papers in future issues reflect a wider range of these problems, *Stochastic Models* will move away from its purer brethren, mentioned above, towards such journals as *Advances in Applied Probability, Stochastics, Journal of Applied Probability* and *Stochastic Processes and Their Applications.* □

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