

occasional personal anecdote or quotation. It requires detachment, selectivity and an explicit understanding not just of the building of the science and its subsets, stone by stone, but of the styles of the different institutions where the science was done, and of the evolution of the structure of the field, both intellectually and as that network of interactions.

The history of molecular biology is marked above all by a radical shift in the nature of the central problems and by a concomitant transformation of the research networks. By 1970, the founding fathers had erected an elegant, overarching outline of the nature of the genetic material and the relationships between genes and their products, between DNA, RNA and proteins, with prototypical forms of genetic regulation. So the chief task became, in Crick's phrase at the time, to do molecular biology all over again for eukaryotes. This has meant turning at last to what has for centuries been biology's great intractable, the working out of what used to be called embryology — development and differentiation.

The other aspect of the transformation has been, of course, the splintering of the research into multiple lines and the high-exponential proliferation of the numbers of workers and research centres. Yet all those lines and most of those workers must be concerned primarily with the control of the expression of genes — not just in elegant outline but in full and stupefyingly complex detail. Stent published his narrative textbook on the cusp of the transformation. His future was Echols' and Gross's past. The bulk of their book treats a selection of these mechanisms of control. This treatment is right in principle, yet the selection is skewed by its tight dependence on Echols' own research background. The result, if it qualifies as history at all, is internalist to an extreme, presenting the science narrowly and technically — just what textbooks do.

We are indeed told who did what. But operators and promoters? That could be piquant. Science at its creative best is as dependent as, say, sculpture or theatre or pop music on the styles of individuals and groups. The double meaning of the title was deliberate, yet Echols and Gross reveal little of the individuality of scientists. They tell us virtually nothing about where they worked, or how they interacted with colleagues and competitors. Nor do they address its societal context, how the science described in the book has affected and been affected by its rise to its present dominance of the headlines and of public policy. Instead, those wide margins are decorated by pencil portraits of molecular biologists — 76 of them, including three women. I know 43 of them: only about six are recognizable. But they're smiling. ■

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Science in culture

Bee string theories

Humble Boy, a play by Charlotte Jones.

Sara Abdulla

"I have been doubly unlucky in life: to marry a biologist and give birth to a physicist." So says Flora Humble, the linchpin of Charlotte Jones's gentle new comedy. Flora's astronomer son — the 'Humble Boy' of the title — is home for her entomologist husband's funeral. For one long, hot summer, mother and son grope through grief towards an understanding of their own and the dead man's life, motivations and legacy.

Humble Boy is an entertaining celebration-cum-send-up of the personal and professional quest for immortality through science, love and children. More a laid-back buffet in the manner of Yasmina Reza's recent *Lifex3* than an earnest essay à la Michael Frayn's *Copenhagen*, it is a likeable domestic drama. It contrasts the personal satisfactions of amateur research (unbeknownst to his family, the late James Humble discovered a new strain of bee) with the gallery-playing antics of the academic life (Felix Humble's febrile pursuit of Cambridge kudos). The play pits the palpable beauty of the natural sciences (the garden setting is lovingly Latin-labelled by James's ghost) against the poetry of mathematical astrophysics (Felix transcends his stutter to enthuse on the equations describing the Universe's coiled dimensions).

Magpie-like, Jones picks shiny bits of grade-school science in a shameless but irresistible attempt to graft on gravitas. Her characters inter-

relate like the insects in James Humble's centre-stage hive. The indomitable Flora is the queen bee — life-giving and languid. Her husband, lover and even her son are drones bent to her bidding. Her childless female friend — her worker.

Similarly, the play's emotional journey skims off superstring theory's easy-to-digest cream. Professionally, Felix Humble is searching for a 'Theory of Everything' that will reconcile general relativity with quantum mechanics. This is echoed by his personal struggle to understand how the big events in life — births, deaths, marriages — are informed by the seemingly inconsequential stuff. It may sound trite but, thanks to Jones's facility with dialogue, it works.

Less successful is her recourse to tired tropes, such as the socially inept researcher evading his emotional shortcomings through a life of the mind. That her women find creative fulfilment and make their mark solely by having babies also jars. Jones redeems herself by painting parenthood as "full of Eureka moments", thanks to the insatiable — scientist-like — curiosity of children. Profound? Not really. Pleasurable? Definitely. ■

Sara Abdulla is editor of the Nature News Service.

Humble Boy is at London's Cottesloe Theatre.

Visualizations: *The Nature Book of Art and Science, a collection of essays edited by Martin Kemp, is published by Oxford University Press (£20) and the University of California Press (\$35).*

Simon Russell Beale as Charlotte Jones's Felix Humble.

