be shocked by the total absence of a distinction between science and religious belief, between devotion to mathematics and a literal reading of the Bible.

As Force amply documents, Whiston (as did Newton, incidentally) belonged totally to that world; yet 15 or 20 years ago scholars barely understood it. In possession at that time of well-formulated modern distinctions between science and religion, they simply ignored Newton's manuscripts on the apocalypse or dismissed Whiston as a crank. It is not immodest to say that in *The Newtonians and the English Revolution* (Cornell University Press, 1976) I was one of the first to argue for a literal reconstruction of early-eighteenth-century discourse, and in many places Force is in dialogue, generally a sympathetic one, with that book. In general I am delighted by the astuteness of his observations, although one question must be addressed.

What is the general reader to make of a book such as this? It is beautifully researched and nuanced, scrupulous in its refusal to apply modern categories to the early modern mind of either its subject or Newton himself — in short, a model of the serious new history of culture that can now be written. Yet it remains a monograph, narrowly focused, intent upon reconstructing the religious thought of Whiston, and indeed the millennarianism of Newton, resolutely uninterested in the larger world of church preferment or the social uses to which Newton's ideas were put by the early-eighteenth-century church. Indeed, at moments scholars such as myself are taken to task for painting on too large a canvas, for being too general.

Yet such books must be written and read. They advance scholarship through the sheer depth of their research; they make us feel as if we are eavesdropping on one of those early-eighteenth-century conversations. For that reason the general reader should peruse Force's book and similar works. How else can we recapture a world where the founder of modern science believed that God would destroy that very natural world explicated in the *Principia*, who also urged his followers, as Force shows, to preach both his science and his religion from the pulpit and in the end, given the reality of his desire for power, repudiated Whiston because he said too much in print as well as in those coffee houses? Books like Force's can humble us before the extraordinary capacity of the past to refuse to be like the present, before its ability to violate our most cherished assumptions about the nature of modern science, not least its very origins. □

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The dangers of being discovered

Tim Halliday

Immigrant Killers: Introduced Predators and the Conservation of Birds in New Zealand. By Carolyn King. *Oxford University Press:1985. Pp.223. £29.50, $34.95.*

OVER the past few hundred years, the pattern of largely isolated communities of endemic plants and animals that was the legacy of continental drift and island formation has been radically altered, in some places destroyed, by human colonization, which invariably involves the introduction of a variety of animals to areas where they previously did not occur. Introduced animals frequently are serious predators, parasites or competitors in an indigenous fauna that has had no opportunity to evolve effective defences against them. While European starlings, sparrows and rats now flourish in many parts of the world, many birds that previously lived on isolated islands have become extinct.

Nowhere is this process more apparent than in New Zealand, where once vast forests have been reduced to relic patches of woodland in an agricultural landscape deliberately intended to resemble that in Britain, complete with European deer, rabbits, weasels and rats. Carolyn King focuses on predatory species that have been introduced to New Zealand, since it is often they that have been blamed for the demise of many of New Zealand's endemic birds. In a thorough and well-researched account of the history of its fauna and flora, she evaluates all the factors that have contributed to the upheaval in the ecology of New Zealand that began with colonization by Polynesians about 1,200 years ago, so that the effect of introduced predators on contemporary populations of endemic birds can be accurately assessed.

What emerges is that the impact of weasels, stoats, cats and other predators is appreciable, but relatively minor compared to direct human activities such as deforestation and hunting. The author also emphasizes the intrinsic vulnerability of New Zealand's endemic fauna, a result of its long history of geographical isolation. Until human beings introduced them, there were no indigenous mammals, and animals of different kinds evolved to fill the niches occupied by mammals elsewhere; the weta, a giant cockroach, is the equivalent of a mouse and the kiwi is like a rat in many of its habits. A general feature of New Zealand's animals, like those on islands throughout the world, is their lack of defences against mammalian predators. To varying degrees, many birds lost their powers of flight and became pathetically unafraid of human beings and their fellow immigrants; both European settlers and the Polynesians that preceded them were able to slaughter them with ease. Of more significance, however, was the reckless and relentless destruction of the native forests to make way for agricultural land. One would like to think that such catastrophic practices would not be countenanced in today's more ecologically conscious world but, as Carolyn King describes, where there are powerful economic forces at work, natural habitats are probably never secure.

This book is well-written and beautifully illustrated; some of the photographs of the destruction wrought by early European settlers are particularly striking. The tone of the book is inevitably somewhat gloomy but the author avoids being self-indulgent in her sense of loss for the wildlife of her adopted country. If the human species is to avoid extinction at its own hands, it needs to be constantly reminded of its past follies and excesses. The work and writings of biologists such as Carolyn King provide such a reminder and should be heeded by those who have any concern at all for the future of life on Earth. □

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From *Immigrant Killers*

On the rampage in New Zealand — hunters use one introduced species, the dog, to chase another, the pig. (An engraving from The Illustrated New Zealand Herald, *1868.)*