

being challenged by a new awareness that living systems have been shown to be far more complex and interdependent than ever imagined.

Conclusions

The human world was optimistic on 12th September 1978, when the nations' representatives signed the Declaration of Alma Alta. It was a fundamental human right to be attained by the year 2000 that disease and infirmity be reduced so that a level of health was achieved enabling people to lead a socially and economically productive life. Governments were called upon to develop financially and geographically accessible primary health care facilities for all their people. Garrett, writing nearly 20 years later, concludes that 'as the world approaches the millennium, it seems, from the microbes' point of view, as if the entire planet, occupied by nearly 6 billion mostly impoverished *Homo sapiens* is like the city of Rome in 5 B.C.'. At that time only about one of every three of its citizens reached the age of thirty compared to 70 per cent of their rural counterparts many of whom reached the age of eighty. Recent figures provided by WHO estimate that 17 million people die each year (a third of the total deaths) from infectious diseases. As human population swells the opportunities for pathogenic microbes multiply. The rapid reproductive rate of microorganisms over that of their animal hosts provides them with an unassailable advantage to adapt to any preventive measures we may devise. If as some have predicted, 100 million people might become infected with HIV, 'microbes will have an enormous pool of walking immune-deficient Petri dishes in which to thrive, swap genes, and undergo endless evolutionary experiments'. Joshua Lederberg posed the question in 1994 'are we better off today than we were a century ago?', and concluded that 'in most respects, we are worse off. We have been neglectful of the microbes, and that is a recurring theme that is coming back to haunt us'.

The conclusions of Garrett's book are based on carefully researched data. It has been described by another reviewer as 'encyclopaedic in detail, missionary in zeal and disturbing in its message'. Although some of the examples given are dramatic, the importance of the message justifies the style of presentation. Garrett in her role as an investigative journalist has attempted to bring a balanced view of the problems facing both developed and developing societies in relation to emerging infections. Its warning should be heeded by medical professionals, politicians and civil servants charged with development of health policies. Politicians must be reminded that scientific problems are not amenable to the solutions applied to political issues: that they will not go away with time, spindoctoring, kind words and a little money. Unfortunately Nature does not respond to that agenda. Garrett by describing the appalling consequences of neglect puts on record the reasons we need to reassess our priorities in disease surveillance and in the environmental changes brought about in the name of progress; and she is right.

ACKNOWLEDGEMENTS

Grateful thanks are due to Dr Caroline Blackwell and Dr Jonathan Bard for helpful criticism and comments.

Letter from Australia

THE IMPORTANCE OF A-MAIL

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At first sight, hospitals and slime moulds may not seem to have much in common, but second sight often affords a better view. It's all to do with entelechy—the becoming actual of what was previously only potential, and with what happens when a group of individuals suddenly becomes an individual group.

Cellular slime moulds, officially known as acrasiomycetes, inhabit warm, dark damp, places such as the leaf litter of rain forests. For those with no local rain forest, a compost heap, or American bison dung are promising alternatives. These strange organisms cause classificatory consternation, as sometimes they look like animals, sometimes like plants. Botanists first claimed them as fungi, until a few distinctly carnivorous habits were observed. The fascinating feature of slime moulds, however, is their dual existence and their response to hard times. They are usually to be found as single amoeboid cells, stealthily slithering around the forest floor, frightening the neighbourhood bacteria, and eating any that look particularly tasty. When food is scarce, or the bacteria learn to duck and weave, a remarkable change occurs. Individual cells congregate in their thousands, and fuse into a highly organised multicellular organism, with a stalked front end, a sporing rump, and a bright orange coat. The invitation to join the party goes out not by e-mail, but a-mail; by the release of the chemical messenger, acrasin, a whiff of which says, in essence, 'Food's scarce chaps, let's stick together'. Analogies with football crowds or carnival congas are not really apt—this transformation is more akin to a bag of blood on a drip stand suddenly turning into a circulatory system and setting off down the ward in hunt of supper, a fight, or a little procreative sport. Perhaps the analogy with football crowds is apt after all. A wonderful example of entelechy—the whole suddenly becoming more than the sum total of the parts, and in the process, acquiring quite different behaviour. This is a characteristic also shown by swarming insects, and humans that live in other warm, dark, damp, places such as hospitals. A suitably nasty external threat is liable to transform an apparently harmless rabble into a mean machine, as Dr Andrew Refshauge recently learned to his discomfort.

A few weeks ago Dr Refshauge, the Minister for Health in the State of New South Wales, seemed to share with his counterparts around the world, the notion that large inner city teaching hospitals only have two problems—they are large, (and thus expensive) and they are in the inner city, (and thus removed from where most of the suburban voters choose to live). Let us leave aside for the moment the question of just what is the right size for a teaching hospital, and whether it makes more sense to move hospitals a few kilometres, or to improve public transport. Let us accept that Dr Refshauge was right to decide that St Vincent's Hospital, an old and venerable institution in the inner city of Sydney, should be transplanted to Kogarah in the outer city, the site of another, younger teaching hospital, St George. Perhaps the names should have been warning enough, in a country in which the underground rivers of the Protestant-Catholic

or Anglo-Irish, divide, still bubble up unexpectedly as hot springs. St Vincent's, a centre renowned, amongst other things, for its high technology medicine, such as transplantation, and for its services for AIDS patients, has been run by the Sisters of Charity, an order of Irish nuns, since 1857. St George, on the other hand is nun-free, but clearly, as we were to learn, willing to take on dragons.

As any management consultant will tell you, there are two approaches to handling unpleasant change in large organisations—gradually, with discrete bribery, consultation, counselling, coaxing, and relaxation tapes. Or not gradually. Dr Refshauge would seem to have been trained in the SAS school of change management, and presented his decision as a *fait accompli*, with no option for debate. The reaction of all concerned resembled, in the Australian vernacular, the famous stunned mullet. Then, just as the acrasin was being intensively secreted, just as the usual uneasy alliances of external threat were assembling—doctors, nurses, Australian Medical Association, Trade Unions, just as the newly coalesced beast was rearing up on its sporing rump, and with the ink on the protest placards still wet, the mullet was once again thoroughly stunned. Dr Refshauge had changed his mind—the status would, after all, remain quo. From daring ambush to rout in 3 weeks. All were left wondering just what had gone wrong, or right, according to your point of view. The Sisters of Charity were the first suspects—they are renowned as mean political street fighters when threatened, and Sister Maria Cunningham's public statement that 'we were not railroaded into this' did not entirely remove all suspicion. She did not convince us that the meek would really inherit the earth. The transplant surgeons were also high on the list—those whose daily work is transplantation, presumably know how to make one fail if they want to, but doctors are not readily organised into a unified fighting force at short notice. Herding cats has been fittingly described as an easier task. As far as anyone is letting on, the opposition came primarily, not from the heavy artillery of St Vincent's, but from a sudden fusion of cells at St George. And from without, as much as from within,—the local community was not at all impressed with the prospect of saint swapping. The prospect of Catholicism-constrained fertility control might also have been a consideration. The local Labour Member of Kogarah was soon perspiring freely, as he was left in no doubt of the views of his electorate. He forcefully reminded his Labour Premier, Mr Carr, that they ruled by only a very slender majority. Realpolitik was restored as Refshauge retreated.

It is possible to see teaching hospitals in another light—as the capital ships of the health care fleet, large, heavily armed, expensive, slow to get up to speed and difficult to manoeuvre in shallow water. In the fast changing healthcare battleground, they may find themselves in the wrong place, and with their guns pointing in the wrong direction, but turning them round and re-cycling their weapons requires a variety of skills. Ability to sense the likely community reaction is high on the list. A substantial reward awaits the developer of an acrasin dipstick.

The virtues of a liberal education have long been applauded, but this has usually been taken to mean an Arts degree, to balance the dull pragmatism of the professions, or the tiresome precision of science and technology. For those who aspire to a career in politics, or other forms of leadership, a BSc in Biology, or at the very least, a few hours in the rain forest, studying the ways of the humble slime mould would not be wasted.

MISCELLANEA MEDICA

GASTROENTEROLOGY IN MADRAS

Dr N. Madanagopalan, a Fellow of the College, has sent us a bound volume of photocopies of his publications during his thirty years of distinguished service in the Madras Medical College, much of the time as Professor of Medicine and Head of the department of gastroenterology. This has been deposited in the Library. The majority of the papers appeared in Indian journals but many in international ones. While some contributions on subtleties of the clinical examination and on preventive health concerns reveal him as the 'complete physician', the greatest gain to the reader outwith India would be derived from the accounts of his voluminous experience of alimentary diseases. This includes analysis of 221 cases of primary liver cancer, 78 cases of the Budd-Chiari syndrome, 165 cases of calcific pancreatitis, 473 deaths from viral hepatitis in Madras 1968-70, 486 children with acute sporadic hepatitis and the course of hepatitis in 127 pregnant women. The author is a person of great energy and natural curiosity and much admired by the several physicians from the UK who have been visiting professors to his department, a lively place in 'Madan's' time.

W.S.

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KEEPING BODY AND SOUL TOGETHER

Physician read your Rabelais,
And be prepared to grin,
Improve your bedside manner,
By indulging in some sin.

Your patient in the meantime,
Will improve by leaps and bounds,
His preferred medication?
Your laughing, gleeful sounds!

The prophylactic benefits,
Will appear for all to see,
And Rabelais, the doctor's friend,
Will be provided free.

Large waiting lists will disappear,
Some wards will need a buyer,
And every third physician,
Will put on the robes of friar.

JIM ANDERSON