

pockets of the company. Midas never had it so good. There is a bright new language for this brave new world, such as "God mode" to mean total control, as in "we're in God mode".

Boger assembled a team of bright minds from Harvard and Merck and elsewhere. But the company was snookered before sinking the 8 ball. The coalition of magicians coaxed from academia or seduced from industry turned out to be as illusory as the glass walls enclosing Marcel Marceau. The academics go their own way. The betrayed parent companies fight back with their own research programmes. Vertex hides information from its academic consultants. The consultants hide information from the company. Harvard gets concerned that it's losing control over profitable technology. The company continues to haemorrhage money like a politician up for re-election. It is rescued temporarily by white knights with Japanese faces, in the form of the Chugai company. Apollo is transformed into Dionysis as Vertex swerves into tantrums, fights, sleepless nights, drunkenness and traffic accidents. Success of a sort, however, does come in the fourth act of the drama. But ironically it comes by the method Vertex set out to eschew; the serial synthesis of compound after compound, ringing the changes on the carillon of structure. The three-hundred-and-sixty-seventh compound tested, V-367, has activity; here are the echoes of the Dengel's compound D-365 (verapamil) or Ehrlich's first success with the antispasmodic compound 606 (Salvarsan).

Illusion is the motif of this story. It

impresses by the amount of show rather than substance. From the molecules that exist on computer screens but not in test tubes, to the expectations of investors that correspond to no reality in the world of dimensions, to the negotiations with Chugai in Japan and Glaxo in England, this is a world in which honesty and straightforwardness seem as out of place as gonorrhoea in a nunnery. It is all flickering shadows in Plato's cave with no fire at the entrance. The only reality is the perception.

The book is up-to-date, covering events of barely a year ago. It is so up-to-date, in fact, that the fifth act, the resolution of the drama, is missing. The reader is left hanging like a car on an earthquake-shattered freeway. The storyline is not clear, and time, as befits the world behind the looking glass, does not adhere to chronology. The book, however, rattles along. During the unravelling of the story, the reader will learn a fair bit of the history of drug discovery and the rise of the pharmaceutical industry in this century. Many familiar names such as L. Pauling and R. B. Woodward make cameo appearances. Appropriate to our times, the story is an ambiguous one. Is it a story of success or failure? Or something in between? Is it a morality tale, and should "East is east, and west is west, And ne'er the twain shall meet" apply to academics and their journeyings to the industrial orient? □

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Hidden enemies, foreign invaders

W. F. Bynum

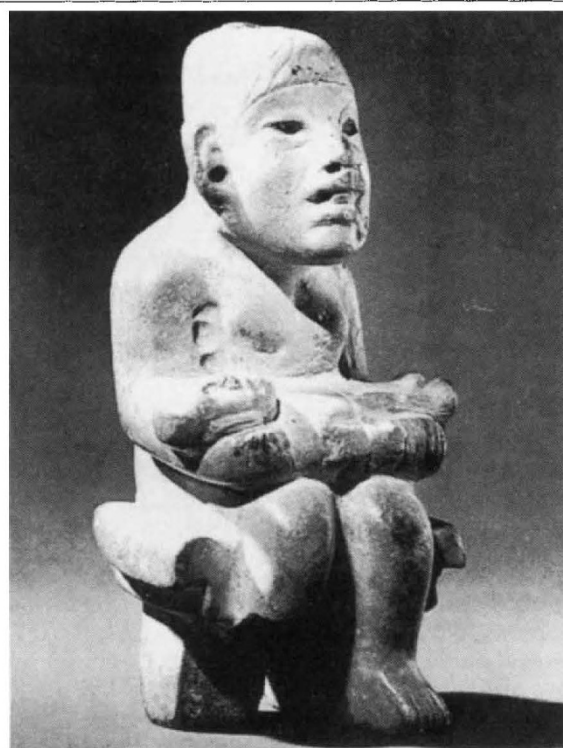
Silent Travelers: Germs, Genes, and the Immigrant Menace. By Alan M. Kraut. *BasicBooks: 1994. Pp. 369. \$25.*

Living in the Shadow of Death: Tuberculosis and the Social Experience of Illness in American History. By Sheila M. Rothman. *BasicBooks: 1994. Pp. 319. \$25.*

My forebears crossed the Atlantic, probably from Holland, sometime before 1820, when the family genealogy falls silent. Most of Alan Kraut's immigrants went to the New World later, and from less prosperous countries: Ireland, southern Italy, eastern Europe, the Far East. The great wave of immigration spanned the period from the Irish potato famine of the 1840s, through the pogroms in eastern Europe of the late nineteenth century, the continuing poverty of Asia and the Mediterranean basin, and the disruptions of the Great War. Most emigrants were poor, taking little with them but their ambitions, language, traditions, genes and germs. For most, the language was not English.

The Great Melting Pot theme in American history has often been recounted, though not before with Kraut's medical slant. *Silent Travelers* weaves together two stories — the medical inspection that greeted would-be Americans on arrival, and the health problems that faced those who were allowed in. His subtext is the increasing concern of those born in the United States with foreigners, fears which led to tough immigration laws in the 1920s and made it difficult even during the Nazi period for refugees to count on the United States to become home ("the place where, when you have to go there, they have to take you in").

Periodical medical inspection of travellers and migrants has been around for a very long time, forming the administrative rationale for quarantine since the Middle Ages. It gradually became ritualized during the nineteenth century, and the depot on Ellis Island, New York, opened in 1894, was where millions of immigrants first encountered New World bureaucracy. Medical officers sought to identify those with dangerous or 'loathsome' diseases, the insane and 'idiots', and individuals thought likely to become a public charge. The rhetoric was pretty Draconian and Ellis Island figured prominently in the memories and memoirs of many who passed through. Nevertheless, the doctors made little impact on the immigration itself, never rejecting more than three per cent of those they examined. Despite the long list of conditions



SMALL stone figure of a woman and child from the Olmec, the most ancient Mexican civilization (Middle Preclassic, 1200–400 BC; 11.4 cm). The Olmec style is typified by small jade sculptures and other objects that emphasize human infants with snarling, jaguar-like features. It takes its name from the 'Olmeca', the mysterious 'rubber people' described by Sahagún and his Aztec informants as inhabiting the jungle country of the Gulf coast, to which many of these artefacts can be traced. In fact, nothing is known about the originators of Olmec art. This photo appears in the fourth edition of *Mexico* by Michael D. Coe (Thames and Hudson, £8.95 (pbk)), widely hailed as the classic introduction to the region's ancient civilizations.

that could exclude entry, only trachoma and favus were diagnosed with much regularity.

Kraut's second theme deals with the majority who got through Ellis Island and the other port screening centres. Except for a chapter on the Chinese in San Francisco, Kraut's focus is principally New York City, a quarter of whose population in 1860 had been born in Ireland. Half a century later, a quarter of the city's population was Jewish, and mostly first generation. Those who were not Jewish or Irish often came from Italy. Kraut analyses some of the health problems faced by each of these groups: exploitation in the workplace, poverty, overcrowding and insanitary living conditions, inadequate access to medical and

1910, but a few pages later are presented as the reverse in 1890. Why? The answer probably has to do with the reliability of the figures rather than the living conditions or health care of New York Italians, but we are never told. Throughout the volume, statistics are there to illustrate the social picture rather than to provide the starting point for analysis. Nevertheless, Kraut has a sharp eye for poignant detail and brings to life the individual stories of a few of the millions who made the journey.

In the 1903 *Book of Instructions for the Medical Inspection of Immigrants*, tuberculosis was a "dangerous contagious disease". Available methods of detection meant that few people were turned away because of it, but tuberculosis rates were high among immigrants and first-generation urban Americans. Some of these feature in Sheila Rothman's moving account of what it was like to live in the shadow of death. By the early twentieth century, Robert Koch's discovery of the tubercle bacillus had transformed perceptions of the disease from a constitutional, familial one to a contagious disorder best dealt with through isolation. In the transformation from consumption to tuberculosis, invalids became patients.

Rothman structures her narrative into three parts. The first, from 1800 to about 1870, deals with middle-class New England consumptives coming to terms with the probability of a shortened life of invalidism. Medical advice and conventional wisdom led the men to seek recovery through a sea voyage or wintering in warmer climates. Moderate exercise and fresh air were also deemed good for

weakened lungs. A few women also went along the same path, but travel for women with domestic responsibilities was difficult. Rothman captures the varieties of the male experience through the diaries and correspondence of many young men; the female is encapsulated through the brilliantly constructed story of Deborah Vinal Fiske (1806-44), whose confidante and fellow sufferer Harriet Webster Fowler followed her to the grave six weeks later.

Fiske's daughter, Helen Fiske Hunt Jackson, lived longer than her mother but she, too, was consumptive. She died in Colorado, where, along with Texas, Arizona, California and other western states, tubercular health-seekers settled in large

numbers after the American Civil War. They were generally tended by doctors who had gone west for the same reason: consumptives caring for consumptives. The promotional literature encouraged those with weak lungs to head west: "the Texas air I think beats any fattening compound I have tried for the last ten years", wrote Dr Boyd Cornick, who eventually set up his medical practice in San Angelo, Texas, a few miles from where my ancestors ultimately drifted.

After the voyage, and the west, came the sanatorium, as tuberculosis became a public health issue. The sanatorium movement incorporated many of the older notions of the relationship between climate and lung disease, but the new perception of the contagiousness of tuberculosis transformed social attitudes and underlay new medical powers of commitment. By 1925, there were more than 650,000 sanatoria beds in the United States, many funded by charities or municipal health budgets for immigrants.

Eminent doctors or reformers occasionally surface in these two books: Maurice Fishberg, Jacob Riis, Alfred Loomis, Edward Trudeau. For the most part, however, Kraut and Rothman seek to resurrect history's silent majority, to convey what it was like on Ellis Island or in the Adirondack Cottage Sanatorium. Inevitably, perhaps, each volume ends with the historical reverberations of AIDS and the salient reminder that meliorism is a hollow philosophy in 1994. □

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High-tech riches

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Profits of Science: The American Marriage of Business and Technology. By Robert Teitelman. *BasicBooks: 1994. Pp. 258. £23.*

IN the 1960s, Wall Street called it the "sonics and tronics" boom — the rush for shares in companies radiating prospects of mammoth returns from the new gold fields of the United States, laboratories in the service of electronics and its associated industries.

Some early arrivals on the industrial scene, such as Texas Instruments, Xerox and Digital Equipment Corporation (DEC), fulfilled the high-tech investment dream, at least for many years, and others followed, such as Apple, Microsoft and Intel. Within a decade, DEC's initial backers reaped a 5,700 per cent return on investment. Unable to compete with this new way of creating wealth, some of the

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From *Silent Travelers*



Tuberculosis sucking the breath from a Jewish tailor's body (*Sanatorium, 1907*).

nursing services, anxiety and disillusionment (almost half the Italian immigrants ultimately returned to Europe). He examines strategies taken by and for new Americans to cope with disease, from imported traditional remedies to hospitals and health visitors.

Immigrant groups usually suffered excessive morbidity and mortality when compared with those born in the United States. Kraut's volume is littered with figures and the occasional table, but he seems less interested in trends than in snapshots of particular mortalities at random times. Sometimes the numbers cry out for probing, as when Italians are quoted as having much lower mortality rates than native-born New Yorkers in