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Health Care in Colombia c.1920–c.1950

A Preliminary Analysis

Christopher Abel

HEALTH CARE IN COLOMBIA *c.*1920–*c.*1950: A PRELIMINARY ANALYSIS

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Christopher Abel
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Health Care in Colombia, c. 1920-c.1950: A Preliminary Analysis

Health care is seldom studied by historians of contemporary Latin America. Issues of death and disease have been the subject of both fruitful debate and fruitless polemic among students of the colonial period.[1] Most research into Colombian health care in the twentieth century has been conducted by social scientists and public health specialists with very specific foci: social anthropologists have investigated such themes as indigenous healing and curing practices among Amerindians and the beliefs and attitudes of rural-urban migrants regarding illness and disease;[2] economists have enquired into topics such as the fiscal ramifications of institutional provision and the impact of the debt crises and adjustment programmes upon the size, distribution and efficacy of health spending;[3] and public health specialists have pioneered studies of subjects ranging from the extension of primary health care in the countryside and the urban slums and shanty-towns to parasitical diseases among children in zones of tropical agriculture and the problems of the elderly.[4] These writings have done much to enrich understanding, but have been conspicuous for two omissions which the contemporary historian can help to rectify. One is an integrated view of health care, relating processes at the national level to external influences and central initiative to regional and local variations; the other is a long-term perspective that is sensitive to the cumulative significance of small shifts, both advances and reversals.[5] The aim of this project is to examine the period from c. 1920 to the late 1980s, placing transitions in health care within their political, socio-economic and demographic framework. This project would be unmanageable in countries of the size and complexity of Brazil and Mexico, but is feasible in a country of intermediate rank like Colombia.[6] The objective of this preliminary paper is to outline themes that merit close examination for the decades between c. 1920 and c. 1950. The author has, however, departed from his prescribed period more often than he might prefer, because this is a subject upon which some themes can be rendered intelligible only by reference to earlier experience.

Periodisation is especially difficult in the study of this subject. No sharp chronological subdivisions that give shape and interpretative value to historical analysis can be identified in health care. Sequences of small, sometimes significant shifts, punctuated by reversals, can be observed. Few of these were nationwide in impact. Thus the choice of the years c. 1920 - c. 1950 is to some extent arbitrary, though it is more than a matter of mere chronological convenience. During these decades there was growing

confidence in Colombia that, in spite of the crises of the World Depression, the Second World War and *la violencia*, problems of disease could be more effectively combated. The state was acquiring greater competence; and Colombia enjoyed continuous civilian rule. Major advances were taking place in 'tropical' medicine, and the numbers of qualified medical and paramedical personnel were rising significantly. The range and quality of advice from international agencies, both philanthropic and official, expanded considerably. Articulate elements in the middle class and organised labour were alert to the desirability of both an active policy in public hygiene and sanitation and education in health and nutrition. Meanwhile, Colombia, a Latin American latecomer to insertion within the international economy, enjoyed from the early 1920s the advantages and disadvantages of an increasingly thorough incorporation via the coffee export sector. In the realm of health, these were seen in trends to modernise professional education and practice, especially through the exposure of individuals to specialist study abroad; in an emphasis upon improving sanitary conditions, notably in the sea and river ports, that was intended to remove obstacles to movements in international trade; and in the first campaigns to control disease like tropical anaemia (*uncinariasis* – hookworm) that reduced the quality of life and the productivity of the workforce.

By about 1950 Colombia was irreversibly inserted into the world economy. Several transitions were occurring simultaneously. An overwhelmingly rural country was soon to become mainly urban. A sparsely populated country where entrepreneurs lamented a labour scarcity was about to experience the 'demographic explosion'. (It should be added that in 1950 there was hardly a premonition of the impending population explosion, even less a precise apprehension of its gravity.) Patterns of mortality and morbidity were altering significantly. Whereas in the 1920s diseases associated with infancy, childhood and malnutrition constituted a permanent scourge in all regions, and 'tropical' diseases that killed, maimed and debilitated were either endemic or recurrently epidemic in the lowlands, by 1950 the epidemiological profile was even more complex than before. On the one hand, urbanisation, industrialisation, the beginnings of modern agribusiness, new patterns of internal migration and the opening up and consolidation of new rural frontiers gave rise to unforeseen environmental and occupational hazards and diseases. On the other hand, economic growth financed a significant expansion of incomes and improvements in nutrition and sanitation that extended life expectancy. The mortality profile adapted correspondingly to include chronic, degenerative and cardiovascular conditions principally among the steadily growing elderly population. At mid-century Colombians were experiencing the genesis of a modern social security system, the impact of incipient transnational pharmaceutical enterprise and changes in patterns of social stratification that had profound consequences for popular expectations regarding family size, the quality of life and the possibility of reaching an old age.

Recent historiography of social policy, especially in the spheres of primary, secondary and technical education, has drawn attention to the fragmentation of social policy and the extent to which policy was determined by crisis management.[7] Health care was no exception to the generalisation that after 1930 a pragmatic openness to experimentation and continuity in policy were vitiated by personnel changes which hampered the evolution of carefully formulated policy. A formal commitment to a broadening of the social responsibilities of the state was written into the amended constitution of 1936, was enshrined in progressive legislation in areas like minimum standards of hygiene and safety at the workplace, and was later embodied in agreements with international organisations such as the ILO.[8] Yet recurring political and fiscal crises and a high turnover of social policy ministers often narrowed the scope of initiative to the implementation of the modest pet projects of senior personnel; and in important areas routine bureaucratic practice prevailed. In many respects, especially at departmental level, the state in health care was, as elsewhere, the junior partner of private and philanthropic initiative; in some spheres it was the referee and arbiter, establishing norms and dispensing advice; in few was the state decisive. Thus leadership was delegated to professional leaders, to Catholic and secular charitable organisations which operated hospitals and orphanages, to progressive enterprises owned by foreigners and nationals which undertook experiments in company-administered health care provision, and to external agencies, like the International Health Board (IHB) of the Rockefeller Foundation. From the 1920s the IHB undertook campaigns against specifically 'targeted' diseases and encouraged the modernisation of public health laboratories to manufacture serums and vaccines. In the 1940s it helped to found the first professional nursing school.

Private consultancy enjoyed more prestige than public hygiene and sanitation; medical education in the public sector trained graduate doctors for private consultancy and specialist surgery; and legislative changes in professional training and practice were often the consequence of private pressures to enhance professional esteem. By interest, education, family and connection the professional elite in medicine formed part of a relatively unified propertied elite which opted for civilian rule and gradualism, and which assured the partial satisfaction of the ambitions of intermediate social strata while aiming to contain and, at intervals, to suppress the demands of the peasantry and urban and rural labour. The medical establishment put up few obstacles to the professionalisation of pharmacy, nursing and sanitary engineering, so long as its own interests and prestige were not jeopardised. Pragmatic in their approach to policy, professional leaders encouraged enlightened experiments where these enhanced their reputation and could be argued to be in the public interest. Professional leaders publicly lamented the low priority attached to health policy. Only during crises – epidemics, war against Peru and insurrection (the *bogotazo* of 9 April 1948) – did health issues temporarily acquire a high priority. Crisis revealed the urgency of an

administrative overhaul that could not be undertaken while resources were overstretched by the crisis itself. A professional awareness of the gravity of inherited problems was not matched by the political will and competence or the funds to confront them.

The nature of popular pressures is still unclear: how far popular classes opting for the attention of popular practitioners resisted the influences of more and more medical and paramedical professionals on the grounds that they formed part of a pattern of advancing elite domination that disrupted popular culture; how far the popular classes accommodated change from above where it occurred, mainly in the cities; and how far they pressed in their own interests for change to be accelerated and access to its benefits made more general. *Prima facie* evidence suggests some shifts between these positions that was consistent with a growth in awareness of the benefits of 'modern' health care combined with a defensive adherence to tested methods. The pattern of change in health care was thus consonant with other broader patterns in Colombia. Before the 1960s there was little expectation of radical change and more experience of slow improvements punctuated by frustrating setbacks.

This paper places a particular stress on the role of the state and the evolution of the medical and, to a lesser extent, the paramedical professions. It is written on three assumptions. First, the evolution of health care is to be understood in terms of the relationship between domestic change and external pressures, between the private, philanthropic and public sectors, and between those processes specific to the health care sector and those (like incomes and growth) exogenous to it. Secondly, comparative data from other countries, both 'developed' and 'underdeveloped', is useful to clarify some aspects of an unfamiliar subject. Thirdly, nothing is to be gained from a re-cycling of the ageing polemic played out in other areas of the historiography between the champions of the study of 'great men' and scientific breakthroughs and the advocates of the study of the connections between the health care sector and its broader political and socio-economic environment. The range of data available for health care changes significantly over the three decades considered here. In the early 1920s statistical data, even basic indicators for mortality and morbidity, were sparse and unreliable. By the early 1950s there was a clear sense within central government that impressionistic evidence was insufficient to formulate effective policy, and some effort was made to collect and generate data based on the first 'modern' censuses of 1938 and 1951. Qualitative data, some of which is used here, is accessible in public legislation, policy documents (both national and departmental), professional periodicals and other specialist publications, the reports of international agencies, the press and elsewhere. Some of the writings of the minority of physicians who pursue the history of medicine as an amateur interest are useful. Various of the participants in the processes of the 1930s and 1940s remain alive and available for interview.

Disease and the Epidemiological Profile

During the nineteenth century disease impeded the consolidation of the national market and political integration. Endemic and recurrent disease in the lowlands posed obstacles to introducing transport improvements and also to travelling by existing routes. Disease deterred immigration from overseas and internal migrations, especially between the relatively salubrious uplands and the disease-ridden lowlands. (Indeed, modern epidemiological theory indicates that adults moving to a new disease environment suffer a lack of immunities.) The complexity of the Colombian topography was parallelled by the complexity of her epidemiological profile. Given the lack of salubriousness of the environment, epidemic was commonplace in the nineteenth century but tended also to be localised and therefore containable. From the 1880s and 1890s Colombian medical practitioners shared in a growth of international knowledge of preventive hygienic measures that were practical in the struggle against particular diseases.

In the present state of research no confident statistical picture of epidemics and mortality for the 1920s can be supplied. Yellow fever, which, according to Humboldt, appeared at all altitudes below 2,500 feet, posed grave problems.[9] Outbreaks of epidemic proportions had been recorded in the Caribbean coast region since the eighteenth century: in Cartagena in 1804 and again in 1815, in Barranquilla in 1871, and in Ciénaga and Riohacha in 1904. The last cases of the illness were recorded in 1906 in Santa Marta and in 1912 in Cartagena and Barranquilla. In the last quarter of the nineteenth century yellow fever had posed a serious obstacle to the French inter-oceanic canal project in the Panamanian isthmus (before the secession, with US backing, of Panama from Colombia). The growth of river traffic in the Magdalena Valley and the beginnings of new settlements associated with tobacco cultivation provided scope for several outbreaks of yellow fever in the interior lowlands: in Honda and Ambalema (1823), Mompos (1856), Girardot (1865), Penaliza (1866), Espinal (1880), Tocaima (1884) and Guaduas (1885). Other epidemics occurred in the north-east, near the Venezuelan frontier, in the Valley of Cúcuta between 1880 and 1888. Five municipalities of Santander, including Bucaramanga, were subject to an epidemic between 1910 and 1912. Experience in the British Caribbean colonies indicated the difficulties of escaping from yellow fever: some of the British troops who took refuge from an epidemic in Jamaica in 1867-8 by moving to the hill stations carried the virus in their blood, where it lived perfectly well as long as the temperature remained above freezing.[10]

Mosquito-borne transmission of yellow fever was established in 1881 by the Cuban medical scientist, Carlos Finlay. The vector *Aedes aegypti* that transmitted infection in urban environments, inhabiting housing and incubating in stagnant water, had flourished in the confusion of the Second

Cuban War of Independence (1895-8). Thus the Yellow Fever Commission in Havana during the first US occupation (1898-1902) pioneered campaigning measures to control the vector of the *Aedes aegypti*. Aiming to protect US military and civilian personnel, to attract US investment and trade, to placate Cuban critics of the occupation regime and to forestall the spread of epidemic yellow fever by ship to the ports of North America, the Yellow Fever Commission applied its measures so rigorously that not one case was recorded in Cuba in 1902.[11] In 1923 practices well tried in Cuba, Panama, New Orleans and elsewhere were applied in Colombia as a second epidemic caused loss of life in Bucaramanga. The last urban epidemic in Colombia occurred in 1929 in El Socorro, Santander, with 34 deaths among 150 recorded cases in an urban population of about six thousand.[12] Urban yellow fever ceased to be a scourge.

Smallpox was another major killer. It was subject to classic epidemic swings, by which one generation which survived an epidemic enjoyed a degree of immunity not shared by the next generation which in turn was victim to the reappearance of the disease. In spite of the gravity of the smallpox epidemic of 1803-5 the first moves to confront it had met with both political resistance on financial grounds from the Cabildo of Santa Fé de Bogotá and popular indifference, problems that were exacerbated by a problem of damaged vaccine that made innoculation rather than vaccination necessary.[13]

The humid isothermal lowlands proved an ideal medium for the propagation of malaria, which prospered when flooding occurred and mosquitoes proliferated. The greatest virulence of malaria was recorded after the draining of forests. Recurrent flooding meant a recurrent problem of malaria among the populations of mixed race in Urabá, the Magdalena and Cauca Valleys, the Guajira Indians and, especially, the poor blacks of the Atrato Valley. According to James J. Parsons, the Antioqueño homesteaders of the late nineteenth century on the Caldas and Tolima frontier acknowledged the risk of malaria in the lowlands by building new settlements in high, well-ventilated ridge sites generally at an altitude above the anopheles belt.[14] Tackling malaria was exceptionally difficult. On the one hand, Colombia enjoyed easy access to supplies of the established prophylaxis against malaria, quinine, which Joseph Pelletier and Joseph Caventou had isolated, with other antimalarial alkaloids, from cinchona bark in 1820. (They had also isolated emetine from the Brazilian root, the ipecacuanha, which was extensively used as an emetic and, in modified form, as an antidysenteric.) On the other hand, mosquito control by drainage of swamps, the clearing of undergrowth, the protection of water deposits and the spreading of larvicides over stagnant water was a costly and administratively complex matter which involved several distinct regions. Gradually foreign and upper class travellers became accustomed to the use of mosquito nets and screened accommodation along the lines introduced by

the US occupation forces in Cuba, Puerto Rico and Panama; and they became careful to choose mosquito-free sleeping quarters. Yet campaigns against the anopheline genus (undertaken in Colombia in particular in the mid-1930s) had none of the permanent success of the campaign against urban yellow fever.

Hookworm, an iron-deficiency anaemia, was the main intestinal parasitical disease associated with the coffee-producing zones. Poor sanitary conditions – usually the complete absence of modern lavatories – and rotting pulp from coffee berries contributed to infection. Larvae penetrated the bloodstream through uncovered hands and the shoeless feet of workers and their children, giving rise to permanent lesions, blisters and sores along with swellings of the legs. Intestinal parasites were little tackled by 1920, not least because they caused few deaths *per se*. Their greatest impact was in debilitating rural populations, reducing their capacity for work and their quality of life, and weakening them so as to increase their vulnerability to killer diseases. A high incidence of intestinal parasites was not surprising, given the proportion of rural homes with dirtfloors.

Children were especially subject to mortality through gastrointestinal diseases (diarrhoea, gastritis, enteritis) in coffee and non-coffee producing areas of high bacteria counts caused by poor environmental sanitation, and were especially vulnerable where they suffered malnutrition, in particular a low protein intake. A stress on practices of breastfeeding and milk pasteurisation which reduced risk was barely visible until the early 1920s. Baby and infant mortality from tetanus neonatorum caused by umbilical sepsis resulting from the custom of placing cowdung on the healing umbilical scar was widespread. It was perhaps reduced by the slow expansion of hospitalisation for childbirth during the inter-war period.

Leprosy posed other problems. There was no evidence that it was a major killer; but there persisted the attitude founded in biblical precedent that leprosy constituted a divine punishment. The exponents of this orthodoxy demanded the segregation of lepers to colonies remote from the remainder of society, including the victims of other diseases. Thus leper colonies were founded at Agua de Dios in Tolima (1870), Contratación in Santander and Cano de Loro near Cartagena. At Agua de Dios lepers were attended from 1891 by Italian and Dutch Salesians, and also by nuns from the orders of La Presentación and the Sacred Heart. The colonies were supported by the charitable societies of St. Lazarus. Enlightened members of the Academia Nacional de Medicina argued strongly in 1892 against official proposals to create a leper colony on the deserted island of Coiba off the Panamanian coast, and in 1928 argued again that the obligatory isolation of leprosy victims in three colonies was deplorable. Lepers, they contended, should be placed at liberty, enjoying access to a dispensary in an isolation hospital at Bogotá, which would also serve as a centre for the study of Hansen's bacillus. But enlightened academicians who believed that the aim of policy

should be the reintegration of sufferers from leprosy into society, not punitive ostracism and cruel outcast treatment, were defeated by public opinion and private interests in spite of the burden upon the exchequer represented by the colonies.[15]

Other diseases, notably venereal diseases and tuberculosis, were associated with steady urbanisation in the early decades of the twentieth century and, in the case of tuberculosis, poor nutrition from childhood, and overcrowding and lack of cleanliness at home and the workplace. A lack of vigilance regarding tuberculosis was always a risk, since it was still commonly believed by physicians that tuberculosis was less deadly in the tropics than in Europe. Typhoid posed great problems, which were slowly overcome by modern sanitary engineering in the cities. But in the absence of sanitary knowledge regarding the disposal of human excrement and the washing of clothes, drinking water was frequently fouled. Consumption of filthy water was probably the most common cause of infection in some coffee municipalities.

Colombians suffered too from diseases known to the New World that had proved unexportable to the Old: *verruga peruana* (often known in the English-speaking world by its Spanish name but otherwise referred to as bartonellosis), whose main symptoms were great ulcers, which was known only in Peru, Colombia and Ecuador; *oroya* fever, which strikes only in Andean countries; Chagas' disease, which can sometimes be fatal; and the skin disease, *pinta*, which, according to Crosby, has never crossed oceans, unless it is considered as merely another form of treponematosis.[16]

Death from infectious diseases was commonplace and only slowly displaced by a trend towards death by degenerative diseases. After 1945, as incomes rose and urbanisation took place on a massive scale, the volume of food staples expanded and the quality of diet tended to improve. Significant improvements in housing and sanitation occurred, along with an expansion in access to a steadily growing range of modern medicines and public health facilities. Life expectancy rose as higher literacy rates and more frequent health education campaigns made an impact. At the same time more efficacious disease-fighting measures were applied. And a better popular appreciation of the causes and consequences of such infectious and communicable diseases as measles and whooping cough was acknowledged.

The Evolution of Science, the Medical Profession and Popular Alternatives from Mutis to 1930

Colombia enjoyed a slender but significant tradition in medical education, scientific inquiry and public health innovation. Several generations of physicians spun a heroic myth around the main protagonist of scientific change, José Celestino Mutis, who arrived as a member of the Botanical Expeditions sent to New Granada by Charles III to identify, classify and investigate the properties of medicinal plants.[17] Mutis and his team composed a *de facto* faculty of the natural sciences in which many Creoles were trained.[18] Mutis was (and is still) venerated as the founding-father of modern science and medicine in Colombia, admired as a symbol of public spiritedness combined with a determined demystification of stale orthodoxies, and invoked as a reference-point for new entrants to the medical profession. Mutis played a vital role in the struggle of enlightened intellectuals against the status quo; used his considerable influence to press for the modernisation of medical education; was active in advancing the study of botany; and pressed for changes in policy on public hygiene and sanitation. He was remembered for his conscientious assimilation of European examples to the circumstances of New Granada, and also for his determination to transmit to the colony a complete digest of current scientific ideas, rendering them comprehensible without distorting them by oversimplification. Thanks largely to Mutis and Alexander Von Humboldt, New Granada shared in scientific debates raging in Europe at the turn of the eighteenth and nineteenth centuries.

With Miguel de la Isla, Mutis revised the medical curriculum. Their Plan General de los Estudios Médicos, devised in Bogotá, which appeared in a preliminary draft in 1802 and in its definitive version in 1805, embodied Mutis's advocacy of practical training as well as theoretical studies in medical education. Containing features derived from both the Spanish and French Enlightenments, the Plan General stressed surgery in the curriculum at a time when this was available in only three *colegios de cirugía* in Spain itself (Cádiz, Barcelona and Madrid). For Mutis it was essential that the curricula of study be carefully defined and thoroughly enforced, and that they should embody best current practice, combining clinical studies linked to the teaching of mathematics and natural sciences with theory. He was equally unyielding in pressing for the professional exercise of medicine to be regulated effectively, and for the system of examining of practitioners to be controlled. Forceful in stressing the urgency of establishing a chair as the first stage to the solution of immediate public health needs in Bogotá, Mutis envisaged the establishment of further chairs in areas like anatomy and clinical and botanical medicine. Careful not to underestimate the resources of talent in New Granada, Mutis rejected the argument that medical professors should be dispatched from Spain to Santa Fé de Bogotá, and

argued that local educators had the competence to reform medical education. While emphatic about the need for medical practice to be regulated within a judicial framework and for a system of professional recognition, Mutis was at the same time pragmatic in acknowledging that popular curers (*curanderos*) and midwives (*parteras*) performed an important role so long as there were insufficient medical practitioners to attend to the needs of the entire population. He did not condemn outright surgeon-barbers of humble social origins who had no theoretical knowledge, arguing instead that some *cirujanos-romancistas* that he had seen did a good job.[19]

Mutis was recalled too as a champion of experimental Newtonian science, Copernicus, Galileo and the heliocentric theory against the sterile and obscurantist scholasticism of the Dominican Thomists. He was admired as the most eminent of the nucleus of scientists identified with enlightened learning at the Patriotic Society, as well as with revolutionary Creole agitation and resistance to peninsular oppression, especially the decision to dismantle the Botanical Expedition.[20] Like Alexander Von Humboldt, Mutis symbolised a dedication to systematic recording and observation, that included the collection of quantitative data;[21] and he enquired conscientiously into the use of vegetable oils and resins in the struggle against endemic diseases and the properties of quinine and its uses against malaria. The first scientific publication in New Granada following the arrival of the printing-press was the work of Mutis, *Método para curar las viruelas*, in which he examined the impact of high altitudes on human organs, and reviewed vaccination practices and diagnosed the relationship between variations in temperature and wind direction and trends in illnesses. Mutis, however, was not only the disinterested scientist: alert to the politico-religious environment, he interpreted the smallpox epidemic following the *comunero* revolt of 1781 as divine retribution.

Mutis stood out as an advocate of prudent rationality while reforming Crown bureaucracies were active. Observing that economic growth could be achieved only if the population grew faster, and by implication, if the death rate were reduced by effective measures to counter epidemics, reforming bureaucrats attempted to found a military hospital. Mutis acted as spokesman for a rational organisation of sanitary and hygienic services to support the military. Meanwhile, colonial administrators attempted to reassert Crown control over the finances and administration of hospitals, leaving only patient care to the religious orders.[22] Most important among public health initiatives were the early attempts by Francisco Salvany to vaccinate children against smallpox in 1803. Salvany, assistant of Francisco Javier de Bulmis, who led an official expedition to vaccinate the populations of Puerto Rico and Caracas, followed the procedures that Edward Jenner recommended after making the first experimental vaccine in 1795.

During the century after Mutis, scientific inquiry, medical education and public health policy were subject to cycles of initiative and setback associated both with civil wars and disturbances and with uncertainties of funding before the ascendancy of the coffee export sector was assured. Circumstances were inimical to scientific inquiry: material resources (hospitals, equipment, etc) were destroyed and expertise (practitioners, professors, students) was dispersed. The small number of physicians who tried to sustain the investigative traditions of Mutis, to enlarge the profession and raise its competence, to expose Colombia to the genesis of modern medical science and to make some informal medical services available to the destitute, are recalled in the professional literature as titans in a heroic struggle against ignorance and chaos and as *médicos-apóstoles* and *prototipos de caridad*.[23] But *españolismo* – a convenient shorthand for obsolete practices – was slow to die.

Although Bolívar had invited a French chemist, Jean-Baptiste Boussingault, to undertake studies of the chemistry of plants, further research into their locations and the collection of data and systematic information on their appearance, medical properties and economic uses were little developed before the inter-war period, mainly for lack of resources to establish research laboratories. One exceptional Colombian botanist, José Jerónimo Triana, who aimed to show European audiences the medical and economic value of Colombian plants, made a thorough collection of species and mailed large quantities of specimens to Europe, sending a monograph together with a collection of 6,000 plants for the International Exposition in Paris in 1867.[24] One maverick Colombian researcher investigated medical geography and, in particular, the poison *niarra* in the Urabá region in the late 1910s. Such scientific endeavours were unique, and, in Colombia, regarded as eccentric. Only when the National Herbarium was founded at the end of the 1920s was an impetus given to continuous and systematic research; and samples of the rich diversity of plants emanating from contrasting Colombian habitats – the Andean highlands, Amazon rainforest, tropical valleys, etc. – were collected. Ethnopharmacological investigations followed slowly.[25]

The early decades of the nineteenth century witnessed some institutional innovation in medical education. The foundation in Bogotá of the Escuela Médica by Isla and Gil de Tejada in 1810 and of the Academia de Medicina in 1817 constituted important landmarks. There followed the decisions of Santander to open the Universidad Nacional in 1826 and the Facultad de Medicina in 1827. An adaptation of a French hygiene text was then published in 1828. In mid-century a new wave of liberal reform gave a further impetus to medical education. The Plan of Studies of 1868 reflected a clear attempt to locate Colombian medical education within the vanguard of European practice while adapting it to Colombian needs and incorporating specifically national features into the curriculum. The reform of the university in 1867

and the opening of a School of Medicine in 1868 stimulated a vital debate about curriculum content. In the first three years of training students encountered a heavy stress upon pathology and anatomy and were introduced to pharmacy and operative medicine; and in their fourth they attended three courses, one each on obstetrics and 'special pathology of women and children', on public hygiene (general and Colombian) and private hygiene, and on forensic science. Theoretical courses were complemented by practicals in which students accompanied the professor on hospital visits and took part in minor operations. In the 1890s a thesis was added to requirements for students.[26]

Medical education was subject to serious setbacks. Recurrent warfare destroyed buildings and equipment, dislocated the professorial body and disrupted the careers of students. As in France between 1792 and 1794, medical practice was deregulated, medical education disturbed and inhibitions upon empirics removed, by one Radical government in the mid-nineteenth century.[27] The steady evolution of medical education was obstructed even by small but significant difficulties like shortages of cadavers for anatomical dissection.[28] Sometimes the national syllabus was ahead of the institutional framework. Although, for example, paediatrics was a recognised part of the curriculum from the late 1860s, only in 1906 was a pediatric hospital, the Hospital de la Misericordia, inspired by the London-trained José Ignacio Barberi, opened in Bogotá. Its foundation reflected the emulation in Colombia of French and British trends towards medical specialisation. A struggle for intellectual recognition of a specialism could be resolved by the return of a specialist trained in Paris, but the struggle for its place in the syllabus could last a decade. Thus, to take one example, competition for a place in the curriculum meant the relegation of clinical studies in infant medicine to an optional subject, vying for student attention with clinical studies of the senses or clinical studies of dermatology and syphilis.[29]

A trickle of immigrant physicians and surgeons – British, French, Spanish, Swedish and Virginian, lured by the fresh air of liberty and independence and the pursuit of professional success – brought both competent men and charlatans.[30] Some were military surgeons with the British Legion, others worked at the mines of Marmato, and others still received short-term government contracts on scientific missions. The case of Ninian Richard Cheyne exemplified a general pattern. Cheyne, a Scot and a graduate of Edinburgh University, arrived in Bogotá in 1824, where he attended Bolívar, served the British colony of merchants and soldiers, and was later employed by a gold-mining company at Santa Ana. Cheyne overcame much of the resistance to the teaching of surgery that French doctors contracted by Santander encountered, and awakened in the medical profession an interest in acquiring surgical knowledge by being the first to undertake a vesical lithotomy in Colombia.[31]

Only in the last two decades of the nineteenth century and especially between 1902 and 1930 did the provision of health care in Colombia acquire a permanent shape and an irreversible momentum. The first decades of the twentieth century constituted the formative period of the medical elite, an incipient *técnico* group with specialised knowledge, that set out to bring about orderly, gradual change through an elite consensus within the fabric of the existing civilian order. The new medical elite encountered no frontal challenge from other elite groups because it was a group apart only in professional terms. In other respects, the medical 'establishment' identified with and formed part of the ruling national and regional elites, and shared their perception of a profession, like law, as an enterprise.

The prestige of the medical elite was owed largely to its claim to professional status. The early twentieth century saw growing sophistication in imported medicine and surgery. To a modestly sophisticated descriptive anatomy and pathology and a probing of bodily malfunctions that was possible with the technology of the previous century – the thermometer, stethoscope and laryngoscope, for example – were added the beginnings of a trend towards 'laboratory medicine' founded in a cellular view of the patient, and the more active intervention by the medical practitioner, especially in pathology and histology, in physical processes. Surgeons won prestige in the early twentieth century thanks to the slow adoption of an antiseptic approach. Indeed, the antiseptic principle proved as fundamental to the 'surgical revolution' (the historiography of medicine uses the term 'revolution' over-frequently and over-casually) as in Scotland where it was pioneered. Both hospitals and the expectations of patients of hospitals were irresistibly altered.[32] Increases in the rate of success in surgical work and an expansion of its scope were accompanied by the impact of a slow diffusion of anaesthetics, antiseptics and aseptic techniques. A rise in the social status and public esteem of physicians was enhanced by the help they gave patients with pain – leg ulcers, abscesses, rheumatism, dyspepsia – so that medicine was increasingly understood to be more than a mere placebo. Physicians won admiration among all social classes for the magical qualities of their work and their professional insignia, the white coat and surgical instruments.

Anxious to be seen as European, Latin American medical elites adopted a European view of science as a 'civilising' force and the universal agency of change. French influences were very powerful. The French language played an important part in the curriculum of secondary schools. Indeed, through study in France the Colombian medical elite were imbued with a French confidence in the capacity of science to dominate the environment and were introduced to the potential efficacy of a centralised medical policy as practised in Algeria and Indochina.[33] Through subscriptions to European periodicals Colombian medical leaders came to identify with the international confraternity of professional physicians (especially those battling against tropical diseases), absorbing new trends in medicine and surgery, and

filtering new ideas developed in France, Britain and elsewhere. Differences in emphasis in the teaching, research and practice of tropical medicine between France and Britain or, indeed, between London and Liverpool might seem significant in the French and British Empires; but from the perception of the Latin American recipient of the body of European scientific knowledge they were little more than nuances of difference.[34] Like their counterparts in Australasia, the Latin American medical elites looked to the metropoles for authority, training and recognition, and set out to adapt metropolitan institutions and practices to their own circumstances. External recognition enhanced the prestige of the medical profession. Its authority, which was upheld by legislation, was reaffirmed in medical emergencies.

French thinking reinforced domestic traditions in shaping the dominant medical ideology, whose exponents saw themselves as crusaders against superstition, ignorance, oppression and fatalism. French influences were seen in the medical syllabus, the use of French textbooks and the nature of the relationship of doctors with the religious orders that did much of the nursing. French priorities were visible too in the forty volumes of the *Revista de Medicina de Bogotá* published between 1873 and 1922 by the Academia Nacional de Medicina, and in the slow formalisation of medical analysis observed in two studies by a (later) Dean of the Medical Faculty, Luis Cuervo Márquez, *La fiebre amarilla en el interior* and *Geografía médica y patología de Colombia*.[35] Even the Hospital San Vicente de Paúl in Medellín, a philanthropic endeavour intended to serve both the city and the region of Greater Antioquia, had a French architect, and could be mistaken easily for a French provincial hospital. Because bacteriology played an important part in its early stages, French influences were visible too in the beginnings of modern veterinary medicine in Colombia. It seems likely that Colombian physicians were influenced by male French practitioners, who were defensive because their number fell by one-third during the last quarter of the nineteenth century and were determined that the success of women religious and of illegal pharmacies should not squeeze them out of business.[36] The use of France as a reference-point carried disadvantages. In Antioquia, for example, the application of quinine in malaria cases was delayed until a protracted debate among French colonial doctors over its prophylactic efficacy was resolved in 1914.[37]

As in Europe the prestige of the medical profession was enhanced by its claims to possess scientific knowledge. This was based in a bacteriological explanation identifying living organisms as agencies of diseases. Colombia received from Europe the major bacteriological discoveries of the late nineteenth century: the bacilli and micrococcus of gonorrhoea, typhoid, leprosy, malaria, tuberculosis, cholera, diphtheria and tetanus, and the beginnings of vaccination against rabies. Through training abroad members of the medical elite came to share in a post-Pasteurian medicine that aimed

to protect society from 'invisible actors', the microorganisms that cause disease, by isolating the protozoa or bacteria, by undertaking protective vaccination and by developing curative serums. Thus the microorganism was the object of scientific concern, rather than the socioeconomic environment in which it flourished. Science came to be seen as a liberator once germ theory, discovered by microbiologists in the 1880s, transformed the foundation of scientific medicine in Western Europe and the United States and placed it on the experimental basis that survives to the present. Gradually Colombian professional leaders came, like their French and British counterparts, to see the main intellectual challenge of medicine as residing in its experimental features. A largely descriptive anatomy and pathology slowly lost prestige to histology and physiology, areas that required more active therapeutic interventions in physical processes by physicians. The medical profession grew in confidence as new surgical practices were successfully applied between 1900 and 1930, like a heart suture operation conducted upon a young victim of a stabbing or a nefrectomy for a malign tumour of the kidney.[38]

Training overseas proved from the 1890s to be the critical variable in the importation of the 'bio-medical model' shaped in Western Europe and the United States. This had several main features of which the most important was an allegiance to the broader framework of modern science. To this was added an emphasis upon specialisation throughout medical education and a relative lack of prestige attached to general practice, plus a mainly urban conception of public health. A propensity to prefer spending on flamboyant, high-publicity campaigns directed at particular diseases to developing an 'unheroic' interest in cleaning the water supply and food inspection was clearly visible. There was also a tendency to opt for the more prestigious work of healing rather than the less esteemed but often more valuable work of prevention. (Healing was attractive for its potency, but could not handle malnutrition, pneumonia or diarrhoea.) Progressive integration of medical practice into an expanding market economy was achieved through the payment of fees for services rendered and through the commodification of drugs. Some charitable attention to the poor took place.

Between 1880 and 1930 medicine was projected by some of its practitioners as a vocation comparable to that of a priest, a divine mission with defined obligations towards God. Frequently the medical doctor received a reverential obsequiousness. A pattern evolved by which the medical profession was accepted as having equal or even, because of the relative scarcity of physicians, superior status to the clergy and lawyers. Medical practitioners and surgeons pursued a private income while enjoying a high degree of individual clinical freedom that was consonant with the freedoms that the state bestowed upon other groups, such as entrepreneurs. The medical profession was as individualistic as any other, its members depending on private fees for their income; and its pursuit was combined with

other activities like politics, public administration, the investigation of local history and folklore, and the ownership and management of land or of pharmacies. Private practice prevailed, qualified by a recognition that collectivistic strategies were desirable in particular emergencies or for specific purposes and that some charitable palliatives were necessary to assist groups too poor to pay private fees. Individual doctors undertook a combination of consulting-room treatment, domiciliary visits and hospital attention; and, in normal circumstances, one person assumed the entire responsibility for patient management. Preferring voluntary action to state intervention (and no major political group urged a comprehensive state policy), the profession sought to impose regulations to protect recognised practitioners from commercial competition.

The professional leadership sought a rational and harmonious relationship with the state that was replicated at the regional level with departmental and city government. This was consistent with a ruling ideology that blended economic individualism, private initiative, a gospel of self-help and Catholic paternalism. Initiatives in public health policy were undertaken only with the prior approval or encouragement of the medical profession. The profession oversaw the operation of medical regulations; for the most part it looked to limited reforms, not sweeping changes; and it promoted prophylactic measures. The accreditation of the profession and controls on medical practice were controversial matters when they were rigorously applied. Measures that were ostensibly designed to protect the patient were sometimes believed to be instruments whose main function was to defend narrow professional interests. An Antioqueño proposal in 1917 to impose special taxes upon medical practices established by foreigners aroused much concern. So too did a departmental resolution in Caldas in 1929 that only midwives licensed by the Departmental Directorate of Hygiene should be allowed to practise, which was introduced because there were high rates of maternal and baby mortality as well as of infant blindness and disabilities arising from infectious diseases of puerperal origins.[39]

Some change in medical education occurred between 1902 and 1930. The main limits to its modernisation were threefold. One was the weakness of secondary schooling, especially in mathematics and the sciences; biology existed in the curriculum in the 1920s only to be suppressed in the 1940s. Secondly, there was the university context. The lack of mature faculties and departments of the natural sciences with a research tradition in physics, chemistry and biology left the medicine faculty in something of an intellectual vacuum. Essential disciplines were relegated to the status of 'basic sciences', mere tools in the pursuit of medicine rather than autonomous studies with their own momentum; and the universities were committed to diffusing the benefits of the sciences without taking an active part in shaping their content. Thirdly, there was a widening gap between professional pressures associated with advances in scientific medicine and public health needs. Premature

specialisation was attacked as early as 1915: 'Students specialise in urinary tracts, organs of the senses and gynaecology, without notions of external pathology'.[40] Emilio Quevedo and his colleagues have identified a discrepancy between medical education, professional practice and public health needs in the late 1920s. They have questioned how far public resources in the national Faculty of Medicine were allocated to the training of private sector practitioners serving a mainly middle-class clientele and how far to the training of public health personnel capable of handling urgent matters of multi-class concern.

At the onset of the World Depression of 1929-33 the Colombian position in hygiene and sanitation was significantly different from that in 1902 when the civil wars ended. A modest but continuous flow of Colombian students returning from Paris and, to a lesser extent, London, Liverpool, Edinburgh, and Montpellier, gave professional leaders opportunities to absorb and to diffuse the expanding stock of preventive and curative knowledge acquired in the British and French colonies and in other Latin American countries, most notably Brazil.[41] Simultaneously, the presence of missions of the Rockefeller Foundation meant that Colombia had access both to the accumulated technical knowhow of conducting campaigns against tropical diseases in the US South and to the distilled experience of sanitary reform measures in Cuba, Puerto Rico, Jamaica and Panama.[42]

A small core of reformers embodied the importation of the 'sanitary revolution' from Western Europe. Fighting against immobile elements in local government and entrenched interests, they strove to secure a preventive approach to disease control and to disseminate an environmental theory of disease. Just as experimental and scientific medicine was slow to take root, so too a strenuous sanitarianism was still exceptional in the early 1920s. Yet there was cause for some optimism – because the language of scientific method and administrative rationality was slowly percolating most areas of political debate – as well as good reason for pessimism because scientific method could be put to pseudo-scientific purposes.

In the late 1910s and 1920s the articulate minority of educated Colombians was embroiled in a protracted debate about eugenics, crime and public hygiene in which leaders of the medical profession gained in stature by playing the main protagonist roles. These discussions, like the linguistic debates of the 1890s, reaffirmed the validity of *santafereño* cultural traditions and satisfied a hunger for intellectual activity,[43] helping to reanimate the circumscribed intellectual life of the *altiplano*, where by the 1920s the most familiar topics of public argument – religion, linguistics, the law and constitution, plus the relative merits of free trade and protection – had lost much of their freshness. Eugenics provided a pseudo-scientific rationale for a stratified society and underpinned the thesis of racial and cultural pessimism advocated most forcefully by one of Colombia's first psychiatrists,

Miguel Jiménez López, who was minister of government for President Pedro Nel Ospina (1922-6). According to Jiménez López the degeneration of *nuestra raza* that resulted from the mixing of Spaniards, Amerindians and Africans was the cause of widespread problems like suicide, mental illness and alcoholism, for which the only remedies were hygiene campaigns aimed at better nourishment and personal cleanliness combined with European immigration and educational reform. The discussion that ensued focused on whether the progress of the 'race' could be achieved through improving the environment. Would the application of preventive medicine have regenerative results, or would it enable the allegedly feeble-minded to struggle on and, indeed, to multiply, thus damaging the 'national stock'?[44]

Within the nucleus of physicians that was prominent in the broader movement for social improvement and evolutionary reform that gained strength in the 1920s one publicist, Jorge Bejarano, was outstanding. Bejarano rebutted the fashionable pseudo-scientific theories that Colombians were subject to racial degeneration. Anxious at the growth of crime in Bogotá especially among male juveniles, Bejarano rejected the contention that juvenile crime was a consequence of the degeneration of *nuestra raza* and set out to demolish pseudo-scientific notions that Colombians were, as a mix of Spaniard, Amerindian and African, more likely to succumb to criminal temptations than Europeans. For Bejarano the causes of crime in Colombia lay elsewhere, in particular in the Cárcel de Menores in Paiba where boys of under ten years of age were kept fettered. The use of shackles – 'that inquisitorial instrument of torture' – had disappeared in even the most rigid of prisons for adults. Yet its use persisted in the prison for minors, eliciting behaviour patterns that were contrary to the basic principles of rehabilitation of offenders, in particular a profound hatred of authority and of adults. Bejarano heaped praise upon the exemplary *casa de reforma* at Fontidueño in Antioquia, where, he claimed, conditions compared favourably to those in institutions in Switzerland and Belgium. In keeping with Law 98 of 1920, which created courts for minors (*juzgados de menores*), the children at Fontidueño were placed in the care of a director and a physician both of whom had studied neurosurgery. Their home was orderly, a savings habit was encouraged, and the work tasks that were appropriate for children to perform were carefully defined. Identifying abandonment and vagrancy as the main causes of delinquency among children and attacking lotteries as undermining a habit of saving among the *pueblo*, Bejarano looked for legislation to abolish child employment on the grounds that the child who gained a daily wage became a rebel emancipated from parental tutelage.[45]

Bejarano dispensed easily comprehensible but scientifically-based advice through pamphlets and later the press. It was as early as 1919 that, alarmed at high death rates among women in childbirth and high levels of infant mortality, Bejarano alerted literate public opinion through the press to the

risks of death by tetanus which arose from the application of dirty substances and undisinfected rags to the umbilical cord. At the same time he advocated rigorous examinations of midwives. Emphasising the desirability of breast-feeding, the nutritional qualities of mother's milk and the imperative of sterilising cow's milk, Bejarano was probably the first prominent Colombian to warn against giving babies heavily advertised brand processed foods. Some, like powdered milk, he stressed, should be used very sparingly. Others, like oats, tapioca and arrowroot, should be used only after taking appropriate precautions.[46]

Bejarano had a clear perception of public health. Speaking to both his students and a broader public of the influence of poverty and misery upon hygiene and communal wellbeing, he observed ubiquitous problems of malnutrition, venereal diseases and alcoholism, and argued that a close connection should be established between the practice of preventive medicine and the formulation of public health policy. The main architect and the first incumbent of the hygiene ministry founded in 1947, which he managed almost like a private *hacienda*, Bejarano combined leadership qualities, a sharp awareness of the changing international environment in hygiene questions and a commitment to public health rather than private practice.[47]

Another influential figure was Roberto Franco, who pioneered the study, prevention and treatment of tropical diseases, pressed for the application of scientific method, and played a central part in some early sanitation campaigns. After graduating in Bogotá, Franco did postgraduate work at the Medicine Faculty in Paris between 1898 and 1903, going on to take specialist courses at the Institut de Médécine Coloniale and the London School of Hygiene and Tropical Medicine. In Tunisia Franco studied cases of exanthematic typhus for his Paris thesis; in London he trained in tropical pathology, especially the role of laboratory work in diagnosis, prophylaxis and treatment. He visited a French veterinary scientist in Argentina to experience laboratory studies of veterinary medicine, and began a collection of microscopic laminas. Soon recognised as a leading educator of rare versatility, Franco was Rector of the National University for two years, founder of the Clinic of Tropical Diseases in Bogotá, a pioneer of microscopic examination in parasitological investigation and a collaborator in laboratory development. The instigator of national campaigns against tropical anaemia, Franco wrote extensively on both tropical anaemia and yellow fever, travelling widely especially in Francophone Africa. Franco identified the virus of jungle yellow fever near the Colombian emerald-mining town of Muzo, thus complementing the discovery of the virus of urban yellow fever by Finlay. Franco's contribution to science won both international and national recognition.[48]

Private lay philanthropy played an important part in initiatives in public health, notably the opening of the first adequate public health laboratory in

Colombia.[49] The Samper family imported antidiphtheria serum which they preserved in simple refrigerated cases for use without charge; and Bernardo Samper Sordo set out to solve the problem of reduced efficacy resulting from delays in importing serum from Europe and the United States. After study at the School of Public Health at Harvard and MIT, the London School of Hygiene and Tropical Medicine and the Royal Institute of Public Health, Samper and a microbiologist colleague, Jorge Martínez Santamaría, returned to Bogotá, where, determined to apply technology to biological products, they founded a laboratory that produced vaccines against typhoid and rabies. In the mid-1920s they branched out, producing other serums, making bacteriological and parasitological analyses of water and milk, and launching a laboratory of pathological anatomy. Bogotá was clearly the most appropriate location for the Laboratorio Nacional Samper Martínez since information from abroad and from the regions could conveniently be filtered there and transport facilities existed for the distribution of vaccines across most of the country. The Director of the Rockefeller Foundation, Frederic Russell, commented that the laboratory was a model for the continent, with which only the laboratories of Rio de Janeiro and Buenos Aires compared in completeness and quality of organisation.[50]

The history of the relationship between 'official' medicine and popular healing practices rooted in Hispanic, Amerindian and black traditions has barely received scholarly attention. From the Conquest the Spanish authorities in New Granada showed a contempt for the healing and curing practices of the defeated Amerindian tribes. Determined to impose patterns of conformity among the Amerindians, the colonial authorities attempted to destroy the religious beliefs and ceremonies of Amerindians that constituted the basis of the political power of the shamans. This campaign was complemented by a drive to root out the medical 'heresies' of Amerindians – curing rituals and therapies – which formed part of their belief system and further upheld the power of the shamans.[51] It was characteristic of the colonial rulers that they interpreted consumption of the fermented alcoholic drink, *chicha*, simultaneously as a problem of public health, an offence against God and a contravention of the public order, and that in 1699 the penalty of excommunication was threatened by the diocesan Chapter of Popayán against users of *guarapo*, fermented sugar-cane liquors.[52] The incomplete evidence available indicates that Amerindian medical traditions survived among both the Amerindian minorities living in the barely populated and lightly governed jungle and desert regions on the periphery of the colony and the majority of the population of mixed race inhabiting the core of the country. Black medicine was similarly the object of official derision and of attempts at suppression. The association of the use of medicinal plants by blacks in Cartagena with witchcraft, magical ceremonies and the consumption of hallucinogenic drugs was cause for the intervention of the Holy Inquisition.[53]

Amerindian and black curing and healing traditions proved powerfully durable, because they formed an important part of the broader system of popular beliefs, because they embodied a covert protest against the dominant order, and because much of the population had no access to 'official' medicine as a result of a shortage of recognised practitioners. Access to professional status as a physician was ethnically and, given the power of the religious orders in the education of physicians until the early nineteenth century, religiously exclusive. Legislation stipulated that medical doctors should be white; and evidence from Popayán in 1807 suggests that *limpieza de sangre* was, indeed, a prerequisite of medical practice.[54] It is unclear whether legislation regulating the profession of apothecary had comparable consequences.[55] Excluded groups could work as bone-setters, herbalists and surgeon-barbers, absorbing a blend of Amerindian, black and Hispanic popular traditions and transmitting orally the knowledge of their professional secrets within the family. Much of the population had recourse only to folklore traditions that embodied medical syncretisms, like warding off evil with plants and with prayers to special cults. These mirrored syncretic religious and food practices, and have survived to the present. The mediation of spirits was sometimes invoked for healing purposes. And medical and religious 'superstition' went hand in hand: an illness that was believed to have been caused by *envidia* required prayer before curing was possible. *Susto, empache, envidia* and other illnesses which exemplified Hispanic folk, nosological and etiological concepts proliferated. No one in Aritama, the community studied by the Reichel-Dolmatoffs in the late 1950s, believed that scientific medication as understood in Europe could cure a disease unless it was accompanied by magical remedies and practices.[56]

In the present state of research it is unclear whether hierarchies of traditional healers set out to forge a distinct cultural identity, to form bonds of solidarity, and to resist an increasingly cohesive medical establishment. It seems likely that most aimed to accommodate new challenges. It is clear, however, that in the first half of the twentieth century a growing number of graduate practitioners was competing in a relatively inelastic market for medical services with healers, charlatans, itinerant mountebanks and remedy vendors. There was no attempt to adapt to a pluralistic medical environment by creating traditional healers' associations that operated within national health services as part of the power-base of new ruling groups – practices that were to evolve, in contrast, in parts of post-independent sub-Saharan Africa.[57] Ordinary users of medical services, constrained by cost considerations, had in the light of experience to choose between 'modern' medicine, *medicina casera* and traditional healing techniques. Research has yet to be done into how far the public resorted to one or to a combination of these options, and into how far the choice of healer and medical practitioner indicated membership of a particular social class or ethnic group.[58] Gonzalo Sánchez has investigated attempts at criminalisation of some popular political

protest and syndical activities in the early twentieth century.[59] It seems probable that such moves were complemented by efforts to suppress the work of popular healers and curers, and that they struck at the core of mestizo and mulatto popular culture, violating communal values among Afro-Colombians and Amerindians.

Frank Safford has argued that one goal of white elites in Colombia during the nineteenth century was a homogeneous society.[60] The consolidation of official 'medicine' meant not only that black and Amerindian medical practices were frowned upon but that Hispanic folk medicine was regarded with a similar disdain. First recorded in Bogotá in 1835, homeopathic medicine received limited official recognition in the nineteenth century. Later, however, parts of the medical establishment looked askance at homeopathic medicine, probably because it influenced and interacted with Hispanic folk medicine. The limits to the political influence of the medical elite were indicated by the failure of a project to restrict the practice of homeopathic medicine by law in 1931.

By 1930 a clear momentum for incremental change had emerged in the health care sector. The upper and middle classes were demanding modern curative medicine along European lines, with some allowances made for local circumstances; and a minority of medical professionals trained in Europe enjoyed a rare prestige. Although the framework for scientific education was fragile and that for scientific research little short of nonexistent, the impetus to an expansion of professional training in medicine was irreversible, as the number of middle-class clients for private practitioners grew and organised labour became aware of the merits of modern medicine. An incipient professional network connected by training, shared attitudes and common interests enjoyed some influence upon decision-making. Yet in areas as diverse as improvements in urban public hygiene and investigations into the curative properties of medicinal plants, initiative depended on a few individuals usually working alone with few material resources. The 'sanitary revolution', mediated to a considerable extent by elements in the medical profession, had a piecemeal impact upon urban structures and attitudes, but its significance for the bulk of the rural population was still very limited. The total accomplishment in Colombia between Mutis and the World Depression was not considerable. The evidence available suggests that most improvements in life expectancy and morbidity and mortality after the end of the civil wars were due more to better nutrition and hygiene than to the actions of the medical profession. For articulate minorities with a clear vision of 'modernity' hygiene and sanitation constituted one priority among many that pressed upon limited resources, and were usually seen as of less urgency than public works construction, primary education and policing. The number of medical professionals remained too small to dent the impact of popular practitioners, who remained vital to the welfare of the urban and rural poor of all ethnic groups.

Growth, Disease, Property and the State, c. 1902-1940

Colombia was, by Latin American standards, late in achieving insertion within the international economy. Various explanations for this are customarily given: the political uncertainty caused by civil wars and disturbances before 1902 and fears that they might recur later; the adverse impact of political instability upon both foreign investment and domestic entrepreneurship; the character of the Colombian commodity profile and the high costs of transport caused by topographical fragmentation; and, not least, the prevalence of disease, usually labelled 'tropical', in the *tierra templada*, the middling altitudes, and the *tierra caliente*, the tropical lowlands, which contained most of the main river- and sea-ports. By the early 1920s, however, conditions were changing significantly. Political order seemed assured by an enduring pact between the Conservative and Liberal parties, which were the bulwarks of a limited democracy in which the minority party enjoyed a guaranteed place in Congress and semi-competitive elections were held at constitutionally prescribed intervals. A new economic vitality was observed, principally in the export sector, where a cautious buoyancy pervaded the production and commercialisation of coffee and bananas for export and an overconfidence surrounded oil production. Early railway development and the conversion of many mule-trails into cart- and then motor-roads lowered transport costs. Export expansion acted as a spur to some growth in domestic trade, and together they fostered some urban expansion. All these changes had consequences for the health sector.

Export growth had immediate implications for health conditions. Seasonal workers migrating from the *altiplano* to the coffee-producing lands of the *tierra templada* were gravely exposed to intestinal diseases.[61] Both the oil-producing entrepôt of Barrancabermeja and the banana-producing zone of Santa Marta were notorious for their disease hazards. Many workers building the coffee-transporting railway that connected Medellín and the river-port of Puerto Berrío were victims of tuberculosis caused by overcrowding and unhygienic living and working conditions. In 1919 striking workers on the Ferrocarril del Norte demanded medical attention in the event of an accident or illness and indemnisation for work accidents. Poor hygiene conditions gave rise to militancy and strike action on the Ferrocarril del Pacífico in 1926. During the late 1920s labour leaders began to display alertness to occupational risks and environmental hazards. Disease posed a disincentive even to seasonal labour migrations. Upland workers were often unwilling to move permanently to coffee-producing areas because they were unhealthy. The owners of the Santa Bárbara estate at Sasaima, Cundinamarca, took some precautionary action – vaccination, the whitewashing of buildings, the use of *aguardiente* with quinine and the application of *ácido fénico*.[62] These presumably had slight impact on the main scourge in coffee farms, intestinal diseases.

Urban growth gave rise to new concerns. The Bogotá city authority sought a foreign loan in the early 1890s to extend its sewage system and to enlarge the piped water supply; Medellín built a cement aqueduct and planned a sewage system; Barranquilla became more alert to the risks posed by the adjacent open swamps of the Magdalena estuary. Between the 1880s and the late 1920s the water supply and public sanitation were issues of acrimonious debate in Bogotá. In 1923 a city protest surfaced as a consequence of mismanagement of the water supply, drainage system and general grievances about sanitation and hygiene conditions in the Paseo Bolívar of the Barrios Orientales of Bogotá. A city-wide crisis erupted in 1929 as a consequence of a decision of the Governor of Cundinamarca to sack the mayor of Bogotá after he dismissed the managers of the city water-supply and tramway, who belonged to a deeply unpopular city *rosca* that also included two Cabinet ministers whose corruption and incompetence angered *bogotanos* of all social classes.

The dominant assumptions of the era of export-led growth were reproduced in the health care sector. It was believed that an orderly progress could be achieved by importing foreign technology (surgical and laboratory equipment), vaccines and organisational practices to combat and control endemic diseases like malaria, hookworm and yellow fever, by introducing skilled personnel from 'developed' countries on temporary contracts and training Colombians abroad to replace them, and by enlarging the access of national, departmental and city government to foreign loans destined for water-supply projects and public sanitation schemes. A stress upon the pooling of pre-existing national resources (and their upgrading) with complementary foreign funding that could bring about evolutionary improvement was entirely consonant with the broader model of *desarrollo hacia afuera*. The presence of transmissible diseases compelled a rudimentary state to establish at least the framework of systematic sanitary and medical services. Foreign assistance in the reform of the state apparatus, both at a national level and in strategic locations like the Caribbean port of Barranquilla – reforms that corresponded to both Latin American positivistic traditions and the thrust of progressivism in the United States – would assure a more efficacious use of human and material resources. No direct foreign investment in health care was contemplated, so that few profits would be expatriated. Foreign personnel would be hired only on short-term contracts, and would be displaced by a pool of national expertise that grew as medical education was professionalised. Thus international cooperation would be secured without awakening xenophobic feeling (of which, outside the small banana zone, there was little compared to Mexico, Cuba or Uruguay) or evoking more than the mildest of nationalist protests.[63] National health conditions would improve, so that foreign managers and technicians would be more willing to work in Colombia. And the anxieties of the US immigration authorities and of a broader North American public about the

transmission of disease on merchant shipping from Latin America (as from Europe) would be allayed, allowing the international commodity trade to expand without encountering setbacks from which Colombia's trading rivals could benefit. To adhere to international sanitary conventions and to be seen to be adhering to them were believed to be essential to cordial commercial relations. In 1924 Colombia was represented at the Seventh PanAmerican Sanitary Conference held in Havana, which agreed that governments in the Americas should control transmissible diseases so as to ease international trade and sea communications.

Against the optimistic assumptions associated with the *desarrollo hacia afuera* model were weighed pessimistic prognoses. Sustained improvements in the status of Colombian hygiene and sanitation were threatened by poverty and scarce domestic resources, especially outside the leading cities where most of the qualified physicians resided. Significant problems were posed by public ignorance, entrenched interests reluctant to surrender power to medical boards, the prevailing level of knowledge of tropical diseases and the difficulty of enforcing enlightened regulation that was imposed from above with slight regard for public consultation. A further obstacle lay in complacent upper-class explanations of social conditions, which, providing a convenient rationale for taking no action, placed most of the blame for death, disease and deprivation on the moral failings of the poor, and the remainder on social indiscipline, a lack of Catholic charity (or, alternatively, of humanistic altruism) among the prosperous and the ineradicable vices that supposedly corroded the political system. Unevennesses in the quality of public administration by department and municipality were aggravated by disorder and a high turnover of personnel in public administration, as the competition for government positions and contracts intensified and public revenues grew during the 1920s boom. Furthermore, there was no way of measuring how far irregular assaults on epidemics had an enduring impact on public health. Continuity in commitment to progressive policies could not be guaranteed, especially at departmental and municipal level. What seemed a significant legislative breakthrough could soon fall into abeyance or be reversed. Intractable too was the Colombian epidemiological profile.

Modern public health policy had its antecedents in the late colonial period. Issues that confronted policy-makers in the 1920s had been raised by a member of the Botanical Expedition, Pedro Fermín de Vargas, author of the *Memoria sobre la población del nuevo reino*. Among the themes he considered were sanitary conditions and prophylactic measures, the use of quarantine and the distribution of smallpox vaccine, the neglect of hospices and the problem of leprosy. In the 1920s political life was dominated by a propertied patriciate that lived cheek-by-jowl with the poor in cities where patterns of residential segregation by social class had yet to emerge. Because cities were still small, public health provision remained modest compared to

the Asistencia Pública in Buenos Aires, where the *porteño* elite had been the improbable 'harbinger' of welfare in the second half of the nineteenth century.[64] Even though the knowledge of diet, clothing, housing and hygiene was superior among patricians to that of the poor, they were exposed to many of the same health hazards, and, although anxious to safeguard their rights and keep taxes down, they recognised the need for some state intervention to contain emergencies. Thus the orthodoxy of the minimalist state that governed during the decades of Conservative rule was set aside. However, the assumption prevailed that through self-improvement and the purchase of education and property individuals rather than groups could enter and participate in the reigning order.[65] This applied to physicians, whose professional qualifications entitled them to influence policy at the level – national, departmental or municipal – where they worked. Individual influence was more commonplace than collective pressure.

Epidemic was an everpresent risk in the *tierra templada* and the *tierra caliente*. Colombia was spared epidemics on the scale of India, where at a modest estimate bubonic plague killed over eight million people between 1886 and 1914. Colonial officials panicked out of fear of riots, disorder and a possible embargo on Indian shipping which would damage Indian markets, disrupt flows of raw materials and disturb the intricate system for the multilateral settlement of the British balance-of-payments.[66] Yet the department of Antioquia alone experienced typhoid fever epidemics, most severely in 1913-4; polio from 1917; yaws was evident in all the Antioqueño river valleys in the 1920s; and diphtheria was a serious problem in the mid-1930s.[67] The lives of the propertied elite and their families could be at stake in an epidemic. Their interests were jeopardised if they could not visit their lowland properties, and their incomes threatened if their workforces were depleted by disease, not least because Colombia had little success in drawing immigrants and remained a profoundly underpopulated country. The Conservative and Liberal elites of the *centenarista* generation, like the medical professionals influenced by the French Third Republic, were imbued with a powerful republican ideology that demanded collective civic action to counter and, where possible, forestall outbreaks of epidemic. If most decisions regarding health care were rooted in the structures and experiences of daily life, epidemic posed a test for the propertied classes as to how far they were willing to countenance a growth of state intervention and to accept restrictions on the freedom to take their own decisions. For the most part the propertied classes were slow to endorse an expansion of the coercive and disciplinary forces of the state when these threatened their own interests. An outbreak of an epidemic in a Caribbean or Magdalena port could bring business to a standstill: shipping would be diverted or at best delayed by disinfection procedures and medical checks; migrant labourers deterred; and trade permanently lost to a rival port. Opponents of controls argued with some force that a breakdown in trade could signify a fall in the quantity and

range of available foodstuffs, and that this could contribute to the spread of disease by causing a deterioration in the diet of the population. Food shortages could lead, too, to riot and civil unrest. Ruling elites, in normal circumstances united by formal and informal structures and procedures and cemented by patterns of sociability, could be divided when the welfare of the port in terms of freedom from disease had to be calculated against its wellbeing in terms of trade and income. Medical practitioners could clash with merchants over which priority should be paramount. Caution about the transfer of power to a *médico-jefe* with mandatory powers in medical emergencies might seem justified to merchant elites if an epidemic were used by enlightened reformers as an opportunity to undertake an expensive hygiene offensive. There was the possibility of a challenge to the status quo from radical groups arguing both that epidemics demonstrated the need for more thorough state provision, and that the mobilisation of private sector expertise, philanthropic resources and emergency amateur competence was insufficient to meet the crisis. Though usually depicted as weak, impoverished and disarticulated (and at its weakest perhaps in the Pacific port of Buenaventura), the Colombian state of the early twentieth century did have the capacity to move decisively when crisis loomed, international pressures were applied and a consensus for action was found between the national, regional and port authorities and the main export-import interests. In the 1910s and 1920s yellow fever outbreaks at Buenaventura, Cartagena and Cúcuta were carefully watched by the Panama Canal Commission which enforced strict quarantine regulations and kept in close touch with the Dirección Nacional de Higiene in Bogotá. The likelihood that trading relationships would be severed when the Canal Commission threatened to exclude shipping from Buenaventura during an epidemic prompted hasty action by the Colombian government.[68]

Medical elites required little political skill to persuade the incumbent president of the desirability of a hygiene measure, to convince the propertied elites of the affordability, feasibility and efficacy of a proposal, and to push it through a Congress with whose members they were connected by family, schooling and social class. Just as Gaitán enjoyed a certain deference because he had been trained in law in Italy, medical leaders trained abroad commanded the deference that was considered due to rare expertise. The presence of a respected group of *médico*-politicians usually smoothed the passage of legislation through Congress between 1910 and the 1940s. Because hygiene and sanitation were not issues like education around which the debate over the powers of the Church and State crystallised, public health reformers were able to keep a distance from some of the more destructive debates conducted at all levels of articulate society. Most features of sanitary reform (not the handling of venereal diseases) could be debated without repetitious polemic, and sequences of improvements could be introduced without active pressures to dismantle and reverse them. Yet this very distance from the mainstream of policy discussion carried disadvantages: only in crises was

public hygiene at the centre of the policy-making agenda; and only in the hospital subsector did health care feature as a significant part of the institutional thrust of powerful institutions like the Church and the military.

The legislative and institutional framework for health care, hygiene and sanitation changed significantly between the 1880s and 1920s. In some ways Cuba provided an appropriate model for Colombian policy-makers. During the second US occupation of Cuba (1906-9) a public hygiene ministry with nationwide responsibilities was established to which all municipal hygiene authorities were required to report daily on the prevalence of mortality and morbidity; and by the early 1930s each *municipio* employed at least one physician to provide medical services and supplied a dispensary plan. Cuba, however, differed from Colombia in significant respects. The Cuban epidemiological profile was less complex, owing, in part, to the nature of the soil; Cuba had a lower malarial endemicity than Venezuela and Colombia. Cuba was more prosperous, smaller and less regionally fragmented. She also had the advantages of a new influx of Spanish immigrants in the early twentieth century who strengthened a tradition of mutualist health associations, and then in the late 1930s a wave of Spanish Republican refugees, some of them health professionals.[69]

In Colombia legislation was introduced, codified and refined that governed such areas as the quarantining of ports and the organisation of leper colonies and lazarettoes, the exercise of the medical profession, and the sanitary inspection of meat and the management of slaughter-houses. A Junta Nacional de Higiene that had been superimposed in 1886-7 on the *juntas seccionales de higiene* that functioned spasmodically in the aftermath of independence, was given such responsibilities as impeding the propagation of bubonic plague from Peru. The expansion of the brewing and soft drinks industries was accompanied by new legislation regulating the production of soft, alcoholic and distilled beverages.

Political order in the 1910s and 1920s rested heavily on the assumption that a resumption of civil war could be avoided if national decisions were taken only after processes of bargaining and compromise between regional interests were completed. Indeed, there was a marked reluctance to establish new institutions which increased taxation, concentrated power and resources in the capital, and could jeopardise or suffocate initiatives taken at regional or local level that were better attuned to local circumstances. Health issues illustrated this conundrum well. As in the city of Guayaquil in Ecuador, the spread of medical advances was uneven in Colombia; new unfamiliar methods met with some elite and popular resistance; prophylaxis was unevenly applied; and fears of vaccines, like inoculation by variolation and Jenner cowpox vaccine, were commonplace.[70] Yet the case for national initiative was powerfully illustrated by the formation of a Junta Nacional Organizadora de la Lucha

Antituberculosa in 1918-9. This had the functions of guiding and co-ordinating the campaign against tuberculosis, pooling information and diffusing knowledge. This Junta exemplified a pattern that became the norm. Central government provided co-ordination and information for the departments and municipalities and established norms in areas as diverse as food inspection and cemetery management, while assuming broader regulatory responsibilities in matters of supra-regional concern, for example, hygiene on river shipping and immigration checks.

The main aim of the Dirección Nacional de Higiene founded in 1918 was to break the mould of cumbersome sanitary organisation that was operated by police forces and was notoriously slow to respond to epidemics. Medical authorities were now empowered to make prophylactic dispositions. Each departmental capital was to have its own hygiene service, with two doctors trained in public hygiene, one bacteriologist, one chemist and one municipal engineer. The four Caribbean ports of Puerto Colombia, Cartagena, Santa Marta and Riohacha and the two Pacific ports of Buenaventura and Tumaco were each to have medical personnel assisted by sanitary police. In spite of the possible damage to commercial interests, each case of yellow fever, smallpox and typhus was to be notified publicly.[71] However, the enlightened legislation of the early twentieth century should be treated with caution. It was at most times and in most regions no more than a declaration of political intention. Some legislation was probably unenforceable from its enactment. Ley 46 of 1918 proscribed the renting out of rooms that failed to meet basic hygiene requirements, and obliged all municipalities of over 15,000 inhabitants to devote two per cent of their income to the building of 'hygienic' housing for the 'proletarian class'. Decreto No. 632 of 1920 required modern bathrooms and the provision of hot water for employees of meat-packing depots and slaughter-houses.[72] A resolution in 1920 outlined regulations for hygiene in stables, made the building of latrines compulsory in all new urban and rural dwellings, and provided for domiciliary visits by sanitary inspectors.[73]

Debate about the powers that a central agency handling sanitation and hygiene should enjoy was complemented by uncertainty about where it should be placed. The presence of the Consejo Superior de Sanidad in 1913 within the ministry of government reflected the orthodoxy that sanitation was principally a question of public order, a view that was confirmed in 1914 when the successor of the Consejo, the Junta Central de Higiene, was similarly attached. Indeed, because public hygiene was interpreted as a policing issue, the municipality of Medellín employed not only a hygiene inspector (*inspector de aseo*) invested with police powers, but also sanitary police. During a reorganisation of the public administration in 1918 the Dirección Nacional de Higiene was relocated in the ministry of public instruction, public hygiene being reinterpreted as one of the pedagogic functions of the state. But, fitting uncomfortably here, the Dirección

Nacional was moved to the catch-all ministry of agriculture and commerce, until it was returned in 1923 to the ministry of public instruction. The importance of public hygiene was confirmed; but conceptual uncertainty was underlined in 1925 when the ministry was renamed the ministry of public instruction and *salubridad pública*. Further schemes of reorganisation culminated in a decision in 1936 that issues of sanitation and hygiene should be shunted off into a new ministry of work, hygiene and social insurance (*previsión social*), whose main function lay in arbitration and conciliation of labour and employers.[74]

Questions of health, hygiene and sanitation assumed a prominent, if not a primary position, on the national agenda. Domestic forces combined with external pressures to promote a series of incremental changes. Foreign entrepreneurs who sought a positive image as enlightened pioneers battling against the odds to open up the tropics and as allies of progressive national businessmen in the pursuit of national development preached the desirability of habits of hygiene and sanitation along with those of work, discipline, thrift, and co-operation, especially among skilled workers.[75] Entrepreneurs, foreign and domestic, combined with workers to push for sanitary changes in ports, especially on the Caribbean coast; and improvements in standards of hygiene and health care were a recurring demand made by unionised banana workers in the inter-war period.[76] There were long-standing pressures too from the military (and also veterans from the civil wars) for improved pensions and health care provision, especially for the war-wounded and for highlanders who succumbed to tropical diseases when posted to the lowlands.[77] The argument for improved welfare for the military was strengthened after the First World War by the knowledge that health care systems in Europe were designed specifically to meet the needs of veterans. The case for more regular medical inspection of troops, improvements in their diet, living and working conditions, and better hospital treatment was made emphatically. At the same time civil bureaucrats sought to emulate the social security systems in Western and Central Europe designed to forestall revolutionary and radical unrest and to counteract the appeal of the Soviet goal of a universal, free health care system. Since dissident military and bureaucrats had a proven capacity to disrupt the political order, modest welfare extension to them seemed prudent in a period of growth.

If the hoped-for gains from incorporation into the international economy were to be realised, the propertied classes acknowledged, albeit incompletely, that issues of hygiene and sanitation must be tackled. A reputation for lack of salubriousness especially in the sea- and river-ports and for epidemic in the lowlands posed a deterrent to foreign investment that outlived the national reputation for civil war. High morbidity and mortality rates diminished the quality of the workforce and raised employer costs. Problems of hygiene and sanitation were increasingly perceived as aspects of social disorganisation that frustrated growth by liberal merchants, and as

obstacles to the realisation of individual dignity and a healthy family life by Catholic activists. Nevertheless, economic growth facilitated more infrastructure spending. The building of a telegraph system connecting all provincial capitals, sea and river ports with Bogotá made possible the rapid notification of medical emergencies to the central authorities. The precocious development of aviation in the 1920s speeded up the movement both of personnel to handle emergencies and of essential supplies like vaccines and syringes.

The uses of business welfarism – mainly some modest provision in housing, health care and education – were acknowledged by foreign and domestic entrepreneurs. US experience of the 1920s indicated that the image of a benevolent employer who stood in the vanguard of social progress and strengthened the family life of the worker was a convenient protective device that kept the state at bay and deflected trade union militancy. The employment of a doctor could be justified on the company balance sheet in terms of social efficiency, so long as the application of preventive medicine assured a healthy and productive workforce, the use of medical examinations excluded unhealthy applicants from jobs, and malingering was combated.[78] The US banana enterprise, the United Fruit Company, prioritising the efficiency of workers, organised and maintained a sanitary service, and campaigned vigorously against malaria. The Colombian-owned sugar-cane estates at Sincerín, south of Cartagena, likewise recognised the benefits of enterprise welfare. The firm built a clean town where workers were housed in carefully screened dwellings raised from the damp ground. Obligatory medical inspection was extended to include the children of workers. Company doctors examined workers and their families for evidence of tropical anaemia and malaria, a disease where there was a constant risk of reinfection, by contrast with yellow fever, which, though more deadly, appeared only in epidemic form. A modest business paternalism was rooted in self-interest: 'A good doctor...' wrote P. L. Bell, the US Trade Commissioner, in 1921, '...is the best asset a(n oil) camp can have, and his services will go a long way towards the efficiency of the work and the success of the enterprise.'[79] Because the entire personnel of US dredging enterprises had been wiped out in a few weeks, US enterprises in mining and forestry were cautious. US and British mining firms tried to keep the threat of malaria within check by clearing the jungle for a considerable distance around their encampments and dredgers and by draining or spraying with oil the stagnant water where mosquitoes bred.[80]

In the public and private sectors alike the revenues from export-led prosperity in the 1920s financed innovations like the appointment of the first official doctors in the coffee municipalities of Antioquia and Caldas and of physicians attached to companies building railways and roads. There were career openings too for young doctors in the cities dealing with port inspection, food inspection and forensic investigations. But the benefits of

these innovations were not generally or evenly spread. Urban growth gave rise to a patchwork of initiatives to establish plazas and promote sport for recreation and leisure, and to protect children – mostly within the framework of existing charitable organisations like the Sociedades de Mejoras Públicas. Thus, for example, in Bucaramanga, in 1915 senior medical figures opened a medical dispensary that provided free medical attention for the poor as a dependency of the Sociedad de San Vicente de Paúl; and a *gota de leche* was established in 1922.[81] Because the growth of cities increased the risk of adulterated foodstuffs and a reduction in their nutritional value, elements from the middle class pressed for protection of consumers from adulteration and falsification of foodstuffs by retailers hoping to undercut the prices of their competitors by including additives in staples like bread and milk. Some action was taken against the contamination of foodstuffs sold in street-markets that could cause infection, and to promote the sterilisation of milk and reduce the risk of infection from tubercular cows. At the same time better public hygiene became part of the agenda of the mutual aid societies of city artisans.[82]

As early as 1914 some of the first environmental health measures were taken, in particular the proscription of fouling drinking water by depositing waste in it, like bagasse from sugar-cane and de-pulped coffee beans. In 1922 legislation was introduced that was designed to provide the medical authorities with the necessary powers to handle emergencies. Procedures were established for declaring a disease infectious; and the occasions when such a declaration was mandatory were specified. Local authorities were given coercive powers to remove inhabitants of a dwelling that was deemed a threat to public health. Headteachers were required to demand official vaccination certificates from parents, and a similar obligation was placed upon prisons. Vaccination against smallpox was made obligatory for every child under seven years of age and revaccination was required again at eleven and twenty-one years. The sanitary authorities were instructed to draw up demographic data. In built-up areas the planting of crops like bananas and maize where mosquitoes could breed in stagnant pools was prohibited within 200 metres of homes. Similarly, such buildings as tanneries, distilleries, soap factories and pigsties were to be located at least 200 metres from human habitations.[83] A resolution in 1939 summarised and enlarged upon earlier decisions that imposed responsibilities upon municipalities to provide adequate sewage and drainage systems and upon property-owners to connect buildings to the mains water-supply and to sewage and drainage outlets. One bathroom was to be built in every new home intended for up to twelve inhabitants, and an additional one for the thirteenth. No new house might be built on sites that lay below the nearest drainage and sewage outlets.[84]

However, much of this legislation went unenforced. The Colombian state tended to recoil from intervention, and was so fragmented and inefficacious that there was never a motive for opposition to the hygiene authorities of the

scale and significance of the Brazilian *revolta contra vacina* in the city of Rio de Janeiro in 1904. This was the movement of resistance to the programme of Gonçalves Oswaldo Cruz to eradicate yellow fever, smallpox and bubonic plague: its hallmark was an obligatory vaccination programme; 'mosquito inspectors' were employed to spray mosquito larva and to mark for demolition buildings they deemed unsanitary; and a campaign to counter the spread of yellow fever provided a rationale for compulsory rehousing.[85] Whereas rebellion in Rio was posited on the assumption of the sanctity of the rights of the individual against the coercive power of a relatively authoritarian state in which Jacobin radical-republicans played an important part, in Colombia individualistic attitudes were entrenched and positivism assumed a less thorough and a less authoritarian form. Similarly, Colombian politics ruled out the kind of response to epidemic that occurred when yellow fever broke out along the coast of northern Peru between 1919 and 1922. The authoritarian idealism of the sanitary campaign of Henry Hanson, 'the Pied Piper of (northern) Peru', who exercised a 'sanitary dictatorship' complete with cavalry backing and a cruiser, was unthinkable in Colombia, where the balancing of regional and local interests aborted any possibility of a dictatorship like that of Leguía.[86]

The failure to enforce well-intentioned health measures continued to deter some areas of business even in the 1920s. During the inter-war decades modern tourism crystallised; and various enterprises, including the United Fruit Company, which sought new profitable outlets, diversified into cruise-liner tourism in the Caribbean.[87] But the major tourist enterprises were wary of Cartagena, preferring stopping-points of known salubriousness like Havana and Kingston, Jamaica: '....if there were sewage and pavement in Cartagena itself, if the suburbs were cleaned up, if the shallow waters were filled in with silt dredged from the harbor, and if a campaign were instituted among the lower classes of people, forcing them to use covered garbage cans and screened doors and windows (as at Panama and Colon) the town would be transformed into one of the healthiest places in the Tropics. It would attract thousands of tourists annually, if good hotels were provided for the winter season, by reason of its great ancient forts and other features of historical interest, which would well repay a visit of a week. Tarpon and robalo fishing is very plentiful in the protected bay, and there is an extraordinary ocean beach over which an automobile can be run for miles, stretching away to the northeast of the city and terminating at a picturesque headland. However, under present conditions, without sewage, paving, etc., Cartagena's possibilities cannot be realised and the place certainly cannot be recommended as a health or tourist resort now'.[88]

Accelerated involvement in the international economy after the First World War was accompanied by the contracting of foreign missions from diverse countries to advise on policy. Swiss advice was sought on the military; Belgian on education; the US professor Edwin Kemmerer visited Colombia

to advise on monetary, fiscal, taxation and banking reforms twice in a decade. Paul W. Drake has argued that economic missions represented transfers of technology and institution building, and that they created opportunities to demonstrate a determination to 'rationalise' economic organisation by embracing foreign economic models, updating economic techniques, fortifying institutions, and bolstering the financial management and capacity of the state. Foreign missions promoted fiscal order and a broader international economic stability that awakened creditor and investor confidence. Drake contends that offspring of the Progressive Era like Kemmerer, who recoiled from the belligerent expansionism prevailing in the United States during the 1900s and early 1910s, believed strongly that socioeconomic improvements of mutual benefit to the Americas could best be brought about by technical and scientific advances in institutions managed by apolitical, public-spirited experts. They should be helped by tactful, industrious, neutral foreign advisers, who should in no circumstances be employees of federal agencies in Washington.[89]

There were clear similarities between the Rockefeller missions which visited Colombia continuously from 1917 and those of Kemmerer. Rockefeller advisers helped raise the capacity of the national and city authorities to handle problems of hygiene by taking part in the launching of public health laboratories in Bogotá and Barranquilla. They transferred organisational models and also technology when they were asked to determine the presence of yellow fever in Colombia and to advise upon any needed modifications to quarantine arrangements, and also when they undertook campaigns against hookworm in Cundinamarca and elsewhere.[90] Rockefeller advice was pragmatically valuable in providing external and apparently neutral validation of diagnoses of public health problems by local officials. In 1923 the confirmation by Foundation advisers of a diagnosis of yellow fever by *bumangués* doctors during an outbreak of the disease in Santander prompted the disbursement of funds to counter its spread.[91]

The general thrust of Rockefeller advice was to encourage trends among the embryonic body of public health expertise in Bogotá and several departmental capitals to rationalise sanitary organisation, to strengthen incipient public hygiene institutions, and to establish criteria of cost and viability in policy making and of competence rather than partisan political allegiance in personnel selection. In a context where national private and philanthropic initiative habitually co-operated with public policy-makers, foreign advisers were readily absorbed so long as they worked with discretion. The International Health Board of the Rockefeller Foundation was contracted as a philanthropic foundation with a valuable distilled experience in countries with problems comparable to those of Colombia in Latin America and the Caribbean as well as the US South. Whereas Kemmerer made recommendations on all essential aspects of economic policy, Rockefeller advice was available only in those areas, like the diffusion of

scientific knowledge through laboratory development, where the Foundation had a recognised specialist knowledge. Thus the pressing problem of reform in medical education was the subject of a report which the Medicine Faculty contracted from a mission of French advisers, led by Professor André Latarjet, in 1930.

The propertied classes financed charitable institutions – hospitals, orphanages – that made social inequalities palatable for some and legitimate for others. Patriarchal in their conception of government, the propertied elites were not averse to more regulation of the disfranchised poor or to prescribing authoritarian solutions to groups that lay outside the 'political nation', especially if regulation was cheap and, as with European-inspired campaigns against venereal diseases in the 1920s, was depicted as an instrument promoting and enforcing social discipline. Where an elite consensus might be imperilled by a debate over education between freethinkers and Catholics, stern clericals were known temporarily to unite with unbending anti-clericals in demanding that the state extend its powers of moral supervision over conscript soldiers and prostitutes on public hygiene issues like syphilis that were alleged to be threatening the national moral fibre. Similarly, there was scant resistance to brutally coercive treatment of socially stigmatised groups, especially lepers.

The main charitable institution was the hospital. Hospitals were at the heart of traditions of lay and ecclesiastical philanthropy. As in other Catholic countries hospital-care grew out of a movement of charitable giving rooted in an equation between Christ and the pauper and the commitment of the hospital to the suffering poor rather than the charitably sick.[92] For Catholics the hospital was a means of honouring God, even part of the preparation for the afterlife, so that it was appropriate for the religious orders like the Hermanas de la Presentación to serve as nurses. In Bogotá early republican hospital traditions had been connected with military needs.[93] In Bogotá secular philanthropy played a major role, with the wives of anti-clerical Liberals providing some of its leadership. In Medellín traditions of Catholic welfare provision still dominated in the 1920s, and embraced schools and orphanages too. Loosely organised, a system of philanthropy in which upper-class women took a leading part in fund-raising and management was seen by Catholic leaders initially as an answer to secularism and later as a means of resisting the challenges posed by early anarchism and socialism. Liberal leaders saw private philanthropy as compatible with a growth model stressing private enterprise. These differences should not be overdrawn. Philanthropy was considered a convenient agency relieving social tension by anti-clericals and Catholics of the upper and middle classes, for whom charity was a status-conscious activity. Philanthropic giving was consistent with a broader stress on the personal stewardship of wealth. Hospitals under secular management relied heavily on nuns to provide nursing assistance. The relationship of the secular and Catholic charities with the civic authorities was roughly the same,

with charities relieving the public sector of many of its responsibilities. And philanthropists played a major part in the selection of staff and management of hospitals, in particular the new specialist hospitals, especially for children in the first decades of the century. The functions of hospitals were repetitiously debated. Was their role only to attend the 'deserving' pious poor? Was assisting alcoholics and prostitutes merely perpetuating *la mala vida*? Should the hospital deny aid to poor people who committed sins akin to idolatry?[94]

The foundation of the first maternity hospitals reflected the beginnings of an awareness imported from France that as knowledge of hygiene and antiseptics spread so mothers during pregnancy and childbirth could enjoy some freedom from discomfort and protection from illness. The early maternity hospitals set as their goals a safe and painless delivery for mother and child combined with healthy growth and normal development of the baby before, during and after birth. The new maternity hospitals were complemented by *gotas de leche*, child welfare centres modelled on the *gouttes de lait* founded at Fécamp in France in 1894. (These had been preceded by the pioneering *L'Oeuvre de la Maternité* at Nancy in 1890, that owed its origins to elite concern at the low French birth rate.)[95] The motives behind the foundation of the first Colombian maternity hospitals and *gotas de leche* – pro-natalist in an underpopulated country, eugenic (i.e. 'improving the stock' in order to bring about economic development) or humanitarian – remain to be investigated.

Outside the hospital sector the most important single voluntary initiative was the National Red Cross, which, obtaining legal recognition in 1916, was founded by a small group of enthusiasts, three of whom had run an ambulance that served the wounded in the Battles of Peralonso and Palonegro during the War of the Thousand Days. The national organisation soon won international recognition. Though fragile financially, the society survived in Bogotá and established regional groups of volunteers in Medellín, Cali, Manizales and, later, Barranquilla, which from their inception assumed a special role in emergencies.[96]

From the 1900s some incremental improvements in the education sector had repercussions for health care. The use in secondary schools of French teaching manuals in the sciences and mathematics, often imported by French teaching orders like the Christian Brothers, suggested that medical students might obtain a better training in essential disciplines before reaching university. The Ministry of Public Instruction acknowledged the importance of child hygiene by distributing 9,570 brochures on the subject in 1921 (compare 19,899 catechisms; 15,600 reading books; and 11,431 arithmetic books). From 1913 the ministry also circulated brochures for schoolchildren warning against the abuse of alcohol, especially *chicha*. Notions of hygiene

were added by some teachers in the course prescribed in the curriculum on moral and social conduct and civics. The path-breaking private secondary school in Bogotá, the Gimnasio Moderno, pioneered sports and swimming education. The *normales* (teacher-training establishments) set out from the 1910s to persuade schoolteachers of their 'sanitary mission'. And a connection was established between the secondary schools for girls and the hospitals by the Hermanas de la Presentación, the most important single female religious order involved in both secondary education for girls and hospital nursing. Particular regions took specific initiatives, notably Boyacá, where in the late 1920s an enlightened Conservative reformer, Rafael Bernal Jiménez, like Gaitán trained in penal law in Rome, founded a school meals service, stressed school hygiene and appointed school doctors as part of a broader impetus to public education. The limits to these changes were manifest: legislation to make primary schooling compulsory for both sexes could not be enforced because there were too few schools and teachers, and because the income of many families depended upon child labour; many teachers were unqualified; school equipment was poor; salaries were low (the school doctors in Boyacá had to double up as criminal pathologists); and the impact of reforms in the countryside was felt more in the administrative centres *(cabeceras)* than in the hinterland *(veredas)*. Yet by 1933 even the poor department of Boyacá was furnishing medicaments to schools and taking the first steps to creating a school dental service.[97]

Institutional development in Antioquia illustrated the problems confronted by the most prosperous departments. In Medellín a Faculty of Medicine was founded in 1871, a mental hospital in 1885, and the municipal cemetery in 1889. The partial assimilation of a bacteriological model of infectious disease was seen in the foundation of a chair of biochemistry in the University of Antioquia in 1896. The Academia de Medicina de Antioquia, founded in 1887, soon acquired a leadership role in the region, establishing norms on the handling of epidemics, the construction of dispensaries and the organisation of hospitals, and the management of institutions for the mentally ill and leper colonies. In one smallpox epidemic, confronted by a shortage of good quality vaccines, the Academia required that all public meetings, bullfights and other entertainments, processions and religious functions be suspended. Advising that practising Catholics should seek good-quality foodstuffs, the Academia called too for the suspension of religious vigils and fasts. The aim of the Academia was prevention as well as treatment and cure. Subsequent epidemiology confirmed that direct contact was the most important means by which infection was contracted; but the Academia, determined to protect its reputation from criticism, acted prudently to meet traditional beliefs that smallpox could move considerable distances through the air.[98] The Academia also first recommended the pasteurisation of milk in 1896. Institutional development was complemented by certain forms of entrepreneurial endeavour. Manufacturing growth meant the evolution of new consumer products, and urban growth a ready market for cheap manufactured

goods. Medellín had a soap workshop from the 1870s and a soap factory from 1885.[99]

The limits to the Antioqueño performance in health care were outlined by the energetic publicist Manuel Uribe Angel, who was recalled in the 1930s as the precursor of modern public health policy. He wrote of the Medellín hospital in 1881: 'We lack an anatomical amphitheatre, we do not have a surgical pavilion; vivisections are unknown among us; laboratories arrive among us with peace and depart from us in war...'.[100] Even cadavers for anatomical teaching were in short supply. Uribe Angel agitated to improve conditions on various fronts. He set out to bring an element of permanence and institutionalisation to public hygiene and sanitation and to identify the appropriate locale for a slaughter-house and impose good hygienic conditions upon it. He made a study to determine an appropriate site for a leper colony which was not established. He set out to improve the quality of justice by forming a group of trained forensic scientists capable of conducting post-mortem examinations, and worked to establish a permanent medical faculty in Medellín where young male Antioqueños without the funds to work in Bogotá could study. Uribe Angel fought to advance scientific medicine by publicising research that indicated that the active agent transmitting malaria was the mosquito. And as early as 1872 he sought to instil the habits of recording vital public health data by drawing up a simple table of mortality and morbidity statistics in the general state hospital in Medellín that showed the numbers of patients entering and leaving the hospital by sex, and by rates of cure, improvement and death. Yet in 1896 Medellín still possessed no library of books on medical subjects, no museum and no natural history collection. A climate that favoured a modest expansion of scientific inquiry (mainly clinical observations and laboratory work that assisted in the diagnosis of disease), a continuous flow of scientific publications and the formation of municipal *juntas de higiene* was possible only when peace became permanent after 1902.[101] The Academia remained active, making its first studies of the contamination of the Río Medellín in 1914, winning the support of *alcaldes* in 1917 to prevent medical students from opening surgeries before graduating, and proscribing the practice of professors of medicine granting certificates of knowledge and aptitude to pharmacists and popular healers.

The myth of the Antioqueño frontier crystallised in the 1900s and 1910s. It rested heavily on an implicit association of the health, superior nutrition and vigour of the *raza antioqueña* and its role in region- and nation-building. Any upward trend in nutrition was probably brought about by a broadening of the range of commercial and subsistence food products available to frontier populations – beans, plantains, yuca, sugar-cane, rice, cacao and coffee. This broke with a tradition of overdependence on maize consumption that had arisen among mineworkers (*mazamorreros*) living in areas where the cost of

living was high because food had to be brought in from outside.[102]

Progress in the diagnosis of disease was gradual too. The *idée fixe* that malaria was the consequence of breathing the air was for a long time unassailable; and the revisionist orthodoxy that in the marshlands mosquito bites were the sole means of transmission of the disease was slow to take root. At times the symptoms of malaria, typhoid and paratyphoid were confused. One physician diagnosed the symptoms of beriberi in a patient correctly, indicating that the specific cause lay in foul water, but adding that alcoholic drinks predisposed an ill-nourished patient to illness. A second physician accepted the diagnosis of beriberi, but rejected the view that dirty water was its cause, arguing instead that the main victims of the disease were low-wage day-labourers without the resources to vary a monotonous diet based on maize, meat and chocolate and deficient in fresh vegetables.[103] (Beriberi is now recognised to be caused by Vitamin B deficiencies.)

Sporadic growth provided some opportunities for modest changes in the health care sector. Growth on an export-led model meant that external pressures provided an important impetus to institutional changes that were vital to the flow of exports and imports. State initiative, limited by restricted budgets, rested upon a slow and incomplete professionalisation of the national administration that was not complemented by a professionalisation of departmental and local administration. The institutional focus of care remained the hospital. The changing performance of hospitals over the period is difficult to assess, though some cause for optimism rests in the gradual diffusion of antiseptic and aseptic techniques and procedures and the beginnings of maternity hospitals. Otherwise performance was very patchy. Official provision of hygiene centres, nurseries and orphanages was uneven in the cities and almost unknown outside them. They were the easy victims of closure when fiscal retrenchment was demanded. The responsibilities of the public sector expanded to include health-provision for the military, some state employees and selected groups of skilled urban workers. The limits to public provision meant that private provision was crucial. Some private firms made health care provision for their workers. Foreign-owned enterprise used welfare provision to deflect economic nationalism, improve worker output and productivity and project a favourable public image, and national enterprise to keep the state at bay, hold onto skilled workers and appease worker protest. Hygiene conditions were, like safety conditions at the workplace, an important feature of worker struggle in the 1920s; but it seems probable as incomes fell and unemployment rose during the World Depression that hygiene was a low priority for workers compared to guaranteeing survival wages. National philanthropic initiative, seldom efficient or effective in its coverage and increasingly unable to respond adequately to growing urban populations, was complemented by international philanthropic initiative, especially the projects of the Rockefeller Foundation whose campaigns against targeted diseases in selected regions consisted of

packages developed in other countries, which Rockefeller officers tried to adapt to local circumstances. Rockefeller-assisted campaigns were imposed from above once the approval of local elites had been obtained, without consulting the small farmers and rural labourers who were supposed to be their main beneficiaries.

The State, Domestic Trends and External Factors in the 1930s and 1940s

During the 1930s Colombia possessed the advantages of stability and continuity of political management, which sharply contrasted with the upheavals experienced in countries like Cuba and Peru. The crisis of the World Depression caused alarm about a possible retreat in social expenditure, but did little to slow down trends towards insertion into an international political economy of health care and medicine. The largely peaceful transition from Conservative to Liberal rule in 1930 gave rise to some optimism that when economic recovery occurred the pace of change in social policy could be accelerated in line with a reappraisal of spending priorities, not least because the governments of Presidents Enrique Olaya Herrera (1930-4) and Alfonso López Pumarejo (1934-8) encouraged a climate of open, informed debate, fostered the careers of progressive reformers, especially of the younger generation, and perceived social reform as an instrument for consolidating Liberal support among newly enfranchised sections of the electorate. The early 1930s witnessed a scramble for resources. The limited evidence suggests that the public health sector was pushed, albeit temporarily, onto the defensive. While public education was a cornerstone of the programme of the incoming Liberal administration, health care and housing played a smaller part in the plans of Liberal reformers. Though it could be a vote-loser during an epidemic, public health was probably not going to be a vote-winner; and decision-makers were momentarily tempted to divert resources within the ministry of education and *salubridad pública* from public health to education.

One major and under-studied crisis of the 1930s – the Leticia War against Peru (1932-3) – exposed how national security could be jeopardised by poor health conditions. Levels of nutrition and general health prevailing among conscript troops were inadequate. The armed forces were not ready for combat in frontier regions where malaria and beriberi were endemic and posed a greater hazard than the Peruvians. Problems of sanitation and hygiene in military camps were general. The medical corps, which provided temporary employment for young medical graduates in the southern capitals during the trough of the World Depression, was too small, untrained and ill-equipped to be equal to the tasks of warfare. In spite of claims regarding the

professionalisation of the Colombian army since President Rafael Reyes (1904-9) imported an advisory Chilean military mission, there was cause for doubting whether the Colombian military had digested the flow of information from the 1860s about military hygiene in European specialist journals reflecting the experience of the British Army, especially in India, and of the French marine infantry, especially in Algeria. The Leticia War, together with public protests against falling incomes, high food prices and hunger, brought health issues clearly back onto the national agenda; and circumstances were propitious to institutional innovation in the military. Military hygiene, especially the question of venereal diseases among conscript soldiers, had been a matter of public concern and a topic of theses by medical students since the 1900s. But from the late 1920s other issues, such as civilian fears of a military coup and the oppression of the strike of banana workers, had relegated *sanidad militar* to a minor concern. Civilian leaders reticent about increased military spending were persuaded by the Leticia War of the need for improved military hygiene. Thus the aftermath of the War gave opportunities for specialists in military medicine to press for change. One, in particular, rose to prominence. Colonel Jorge Esguerra López had entered the army as a sanitary officer in 1910, had studied military medicine at the Hospital and the Ecole Militaire du Santé de Val de Grâce in Paris in 1925-6, and had written on the treatment of knee fractures. Now in the late 1930s he founded both the Hospital Militar Central in Bogotá and the Hospital Naval Esguerra López in Cartagena.

Recovery from the Depression placed the public health sector back on the offensive. The expansion of artisan and factory industry in the mid- and late 1930s was accompanied by both a growth in worker pressure for improved safety and hygiene at the workplace and a growing recognition among political and entrepreneurial elites of the desirability of a healthy workforce and disease-free cities. A preliminary analysis suggests that public hygiene policy during the Liberal Republic was not designed as a major manipulative device to incorporate a working-class electorate, except perhaps among port and railway workers. The overall trend was probably towards some limited tempering of individualistic orthodoxies through paternalistic but permissive legislation. The Liberal elite perceived greater efficiency and reorganisation rather than an expansion of resources as the key to social amelioration; and the viability of collectivistic alternatives was hardly broached. Successive Liberal regimes began from the assumptions that private self-reliance should be encouraged, that voluntary effort and public charity were solutions for personal suffering and family misfortune, and that the role of the state and local authorities was strictly limited. The World Depression exposed the fragility of an incipient system of public sanitation and hygiene that relied heavily on private charity. During previous decades bequests and endowments had multiplied, and miscellaneous relief agencies had evolved. Policy-makers who in the 1920s had begun to question the wisdom of an unregulated flow of misdirected charity and indiscriminate almsgiving that

could signify a wasteful duplication of effort and competition between agencies in one area and a vacuum of initiative in another were alarmed when poorly managed charity institutions looked to public support because the flow of funds was curtailed during the Depression.[104]

The mid- and late-1930s were years of cautious clarification and consolidation of trends established in the 1920s, not of revolutionary advance. In health issues the first López administration signified no more than an attempt to build upon and extend past experience. Food inspection practices were further institutionalised. Campaigns against malaria were conducted in the Magdalena Valley. More stress was placed on the care of mothers and children. State employees received some social security and hospital-care assistance through the establishment of *cajas de previsión social*. A programme of *salubridad* for Chocó, a Liberal power-base upgraded to the status of a department, was announced. Public health initiatives, however, remained at the mercy of political considerations: indeed, a trend towards devolving the selection of appointments to the departments and municipalities was claimed by ministry bureaucrats in the mid-1940s to be responsible for a deterioration of the service provided by the urban health centres founded in the 1930s.[105] The practices of the period were well exemplified by the recommendations of the commission of the Academia Nacional de Medicina which acted as a consultative body on public hygiene to the incoming López administration in 1934. The recommendation on alcoholism and drug addiction (one of ten recommendations), had a cautious and prudent thrust, and imposed no new obligations upon the state. Industrialists were encouraged to produce a nutritive, lightly stimulant popular drink containing no toxic substances. A study of sugar-cane was proposed with a view to diverting production from alcoholic drinks to industrial purposes. The government was urged to enforce legislation on drunkenness vigorously, and also to reduce or suppress taxes on soft drinks and beers containing less than five per cent alcohol.[106]

In 1936 the National Department of Hygiene acknowledged that public policy was systematic only with regard to 'unilateral' campaigns designed to combat a particular disease like tuberculosis or 'a cause of racial degeneration' like syphilis. The 'unilateral' campaign was valuable in raising public awareness about one disease but not others. Hence the desirability of forming 'sanitary units' that, using national, municipal and, at intervals, departmental resources, would perform a valuable propaganda function. 'Sanitary units' set out, for example, to stress the imperative of protecting children with *salas cunas* (nurseries) and *gotas de leche*; to awaken a consciousness of the connection between shortages of latrines and the existence of tropical anaemia; and to press for the ventilation of classrooms, basic hygiene in restaurants and clean tools in hairdressers' shops. The salaries of *médicos-jefes* with broad responsibilities was now devolved to the

departments; and the importance of appointing qualified social visitors and nurses was urged on the local authorities.[107]

By 1940 national legislation, enforced and unenforced, covered such themes as dog licensing, the killing of rabid dogs and the treatment of their victims; the quality of the water supply; hygiene, sanitation and ventilation arrangements in breweries and soft drinks factories; the custom of watering vegetable gardens with dirty water; basic hygiene in secondary schools and the appointment of school doctors; and clean stables. Particular departments took additional measures. Antioquia, for example, in 1934 laid down that all factories employing more than fifty workers should appoint a doctor with supervisory functions. Some municipalities also took unilateral action. By the 1940s the city of Medellín had a wide range of resolutions covering such themes as waste disposal, milk pasteurisation, washing clothes in the Río Medellín, hygiene in the market places, the cleanliness of bars, hotels and commercial buildings, the sale of perishable and non-perishable foodstuffs, and sanitary conditions in the food-processing sector. Yet a full range of progressive legislation was insufficient to preclude the need in 1944 for emergency measures to counter the appearance of malaria in recently built urban areas of the city.[108]

The Director of the National Hygiene department introduced resolutions that indicated both a consciousness of the health problems attendant upon poor housing and an impotence in handling them. Thus, for instance, in 1934 owners and tenants were required by law to paint or to whiten the external walls of their homes with chalk or sand and to plaster façades on public thoroughfares. Floors, doors and windows were to be washed, and paper removed from the walls. Washable tile or brick floors fixed by chalk, cement or asphalt were to replace floors made of flattened earth and adobe. Regular disinfection was called for, and waste conduits were to be properly constituted and kept in good working order. Skylights were to be installed where ventilation was poor. A clean bill of health *(patente de sanidad)* was required, and a visiting functionary was empowered both to decide whether a home was suitable for occupation and to impose fines for non-compliance. As a set of desirable aims and recommendations these resolutions had many merits; but as legislation they had few. The authoritarian content of the resolution was likely to estrange from the state the many Colombians who lacked the resources to act upon it. There were few municipal functionaries to implement it, so that enforcement was likely to be exceptional, and at times to be interpreted as vindictive and oppressive. The difficulty of enforcing this resolution was underlined by another in the following year that placed the obligation of enforcement upon national sanitation offices in those cities and towns (mainly sea- and river-ports) where they existed.[109]

The crisis of the World Depression did much to awaken a concern about malnutrition and an awareness of the ways in which malnutrition and an ill-

balanced diet rendered their victims more vulnerable to other, sometimes killer diseases. As Contralor-General, Carlos Lleras Restrepo gave an impetus to nutrition awareness by establishing cost-of-living indices and encouraging modest worker nutrition studies. Innovative studies of the 1930s and 40s indicated that while some importance could be attached to culturally determined food preferences in explaining dietary deficiencies that lowered weakness to disease, pauperism and poverty were more important. Lack of regularity and steadiness of employment, fluctuations and differentials of wages, and changes in the price and availability of food staples featured among the determinants of nutrition levels. So too did shifts away from food purchases in the distribution of family budgets which were caused by rising rents.[110] The more enlightened employers of the 1940s took some *ad hoc* nutrition initiatives for employees, like the provision of balanced meals for workers by one furniture factory in Bogotá and the supply of school meals for the children of oil-workers by Shell.

The genesis of a modern interest in nutrition was located in the Laboratorio Nacional de Higiene. Modern laboratory analysis of foodstuffs and of the nutritional composition of diet was possible from 1929. The gravity of simple goiter, the main consequence of nutritional deficiency disease, had been acknowledged by Boussingault in the 1840s. He had identified the central problem, the absence of iodine from salt. Despite the endemicity of goiter in an advanced form among the peasantry and rural labour in all Colombian regions, no action was taken until Congress legislated in 1947 for the addition of iodine to salt and authorised a small increase in its price. This increase was intended in part to defray the costs of iodisation and also to support the work of the nascent National Institute of Nutrition, which was charged with the function of promoting nutritional education and the production of nutritionally desirable foodstuffs through regional committees. In the countryside nutrition was especially poor. The total calorific intake of rural labourers was both insufficient (1,800-2,000 calories per day) and inappropriately balanced (80 per cent carbohydrates, 12 per cent fats, 7-8 per cent protein). Regional patterns of diet varied considerably but a universal scarcity of meat, fish, dairy products, fruit and fresh vegetables was observed. Nutritional disorders indicated by surveys conducted by the National Institute of Nutrition underlined the significance, in descending order, of simple goiter, anaemia among children, nutritional oedema caused by low protein intake, dental caries caused by fluoride deficiency, scurvy (especially in coastal zones), some pellagra and skin and eye manifestations of Vitamin A deficiency.

One particular issue focused elite concern about nutrition, social discipline and the labour supply. The heavy consumption of the maize-based drink *chicha* by rural and urban workers in Cundinamarca and Boyacá made for high rates of alcoholism, work absenteeism and mental illness. Early nutrition studies exposed a diet that lacked both proteins and vitamins and in

which *chicha* played an important calorific part because of its maize content. As minister of hygiene Jorge Bejarano used the extraordinary faculties available after the *bogotazo* of 1948 to suppress the *chicherías*. But just as an earlier attempt to convert the *chicha*-drinking public to the consumption of a mild maize-based drink produced in hygienic conditions had failed, so too the use of the law to suppress *chicha* consumption was interpreted as an authoritarian offensive against popular culture and proved unenforceable in large areas of the country.[111]

The impetus given by the first López administration to public education and to a climate that fostered a spirit of inquiry into Colombian realities (meteorology, topography, economic conditions, *cultura aldeana, indigenismo*) stimulated a resurgence of interest in medical education. At the same time the range of health publications expanded: the national newspaper *El Tiempo* ran regular health columns in the 1930s and a health page from 1946; a scholarly periodical published by the Universidad Nacional acquired national prestige and circulation among its graduates; and public health specialists edited both a specialist journal and a popular magazine. At the regional and city level there were other publications, like the *Boletín clínica* (later superseded by *Antioquia médica*) in Medellín. Otherwise, limited initiatives were taken by municipal elites. Several, during an upsurge of civic pride, undertook beautification projects in the plazas that, if aesthetic in intent, had incidental health benefits, such as a decline in infectious diseases after the removal of obvious filth and a reduction in the number of insects.

The formation of a public hygiene ministry was several times discussed, and, owing largely to war-imposed fiscal constraints, several times deferred. In 1947 the ministry was finally established, its first minister being Jorge Bejarano, a Liberal widely respected by Conservatives. As minister, Bejarano sought out overseas-trained public health specialists who were neither politically partisan nor committed to private practice. He emphasised the need for appointment of nonpartisan specialists at a departmental level, but had little success as political debate became increasingly polarised in the late 1940s.[112] The ministry assumed the health care functions previously discharged within the ministry of work; and Bejarano undertook certain specifically targeted campaigns. One such campaign was directed at coca production. Seeing the grave consequences of the trade and consumption of the coca-leaf, Bejarano sought the cooperation of Bolivian and Peruvian colleagues with a view to destroying coca plantations in the Colombian south-west. The results of this campaign were limited. Traditions of the ceremonial use of coca and of open and free sale of dry, toasted coca leaves in Popayán, and of part-payment of rural workers in coca leaves were difficult to break. Entrenched interests in Cauca pointed to the economic damage inflicted by the campaign and to the failure to promote alternative crops as sources of income and nutrition.[113]

The Bogotá hospitals were totally unprepared for an emergency on the scale of the urban insurrection of the *9 de abril* in 1948. The *bogotazo* sorely tested health arrangements: a besieged government could not co-ordinate an emergency medical care programme. On learning of the assassination of Gaitán and the crisis that ensued, nurses put on uniforms for protection before walking to the hospitals. There was no time for autopsies, only for the identification of the dead. One hospital had only one eighteen-year old soldier for protection. Some physicians and nurses were unable to reach the hospitals: and young doctors and nurses who succeeded in reaching the hospital had to learn to cope with the emergency, to take snap, solitary decisions, and to handle traumas, not a subject emphasised in medical and nursing education. However, the hospital crisis was less severe than was feared: the supply of clean water was not disturbed, because no damage was done to the aqueduct; there were no electric power cuts; and telephones continued to function. Because 9 April was a Friday and purchases were habitually made by one hospital on Friday mornings for the following week, it at least had sufficient food to provide patients with a small meal and for staff to survive on bread and *agua de panela*.[114] The lack of trained hospital administrators posed special problems during the *bogotazo*. One medical practitioner found the informal training in administration, commerce and decision-making that he had received from his father, a banker-businessman, invaluable in managing the Hospital San José, which alone received over one thousand wounded suffering machete, revolver and Mauser wounds during the emergency.[115] The military command ordered that the streets be cleared of the dead because of fear of epidemic; and Red Cross expertise followed.[116]

External factors played a major part in the changes of the 1930s and 1940s, which were decades of deepening international specialisation in medicine. New methods of clinical investigation, new surgical techniques and major advances in therapeutics (the beginnings in Europe of insulin in 1922, sulphonamides in 1935 and blood transfusion services in 1937), offered enticing opportunities for enterprising Colombian physicians, who were alert to the possibility of career enhancement through pioneering new methods in the national milieu, but did not always fully appreciate their cost implications. Colombia was further incorporated into the international market in health care through membership by Colombians in international societies, like the International Leprosy Association, the American Public Health Association and the American Society of Tropical Medicine. International congresses, which acted increasingly as fora for the diffusion of medical knowledge, and occurred with growing frequency during the 1930s, were attended by Colombian delegates. To take some examples, Colombia was represented at the Congress on Military Medicine and Pharmacy at Madrid (1932), the Second InterAmerican Congress of Cardiology at Mexico City (1936) and the South American Congress on Tuberculosis at Buenos Aires

(1937); at the Fifth International Congress of Radiology at Chicago (1937) and the Sixth in London (1950); the First, Second and Third InterAmerican Congresses of Radiology in Buenos Aires, Havana and Santiago respectively in 1943, 1946 and 1949; and at the World Health Organisation meeting in Geneva in 1952. Colombian participation in broader international trends was indicated too by the introduction of new surgery. One specialist, for example played a vital part in diffusing knowledge of silicosis. Another innovation was to form a commission to go abroad and report back on health conditions and institutions in other countries, such as leprosy provision in Hawaii.

The connection with the United States and Canada was strengthened during the Second World War. As the Good Neighbor Policy of President Franklin D. Roosevelt acquired momentum, some inter-American projects in areas like public health and rural colonisation were undertaken as part of a broader strategy of hemispheric security that aimed to thwart Fascist, Nazi and Francoist aims.[117] Until the early 1940s the PanAmerican Sanitary Bureau had been mainly concerned with the maintenance of inter-American quarantine regulations and was accused, with some justice, of doing little but make noncommittal pious recommendations - for example, that passenger ships should be provided with a physician when it was considered necessary. In 1940, however, the Bureau acquired teeth. Having arranged internships for some Latin American medical students in US public hospitals in 1939, it obtained US government funding to establish a programme of fellowships for Latin Americans. Eleven Colombians were fellowship beneficiaries between 1939 and 1943. The Bureau rapidly expanded its activities to promote nursing studies and improvements in nursing services, to finance field assignments, to take part in bilaterally sponsored campaigns against epidemic diseases, and to give a broader stimulus to improvements in Latin American public health services. Thus, for instance, the PASB financed the work of a US doctor who collaborated with the Colombian hygiene authorities as they tackled an outbreak of poliomyelitis.[118] Meanwhile, the Servicio Cooperativo Interamericano de Salud Pública (SCISP), the local agency of the Institute of Inter-American Affairs, under the umbrella of the US Department of State, was established in 1942-3. It assisted in building the National Nursing School, water treatment plants and hygiene centres, initiatives that were undertaken on the understanding that Colombian agencies would later assume financial and administrative responsibility for them. One such scheme was the Model Hygiene Centre of the river-port of La Dorada, which was founded in 1943 and transferred to the hygiene ministry in 1951. The Model Hygiene Centre campaigned against parasitical diseases, expanded access to pure drinking water, introduced both housing controls and food inspection practices, and undertook a campaign to drain infested swamps.[119] Funding was available from US sources that was complemented by Colombian funding for three further urban hygiene centres, port cleansing, techniques of control of rickettsian diseases and bartonellosis and some nutritional projects.[120] During the Second World War a handful of Colombians, like other Latin

Americans, were lured to the United States to fill vacant hospital positions, in part owing to a lack of career openings in Colombia.[121]

Another shift was in the pattern of imports. Before the Second World War medical instruments (such as pincers, and even hospital beds) were imported mainly from France and occasionally from Britain. But by 1946 Antioqueño purchases were made in the United States: in some respects the US medical instrument was an imitation of the French.[122] The external ascendancy of France was by 1946 clearly in dispute, and the slow recovery of France from the Second World War did not restore her pre-eminence in medical education, practice and technology in Colombia, not least because the Flexnerian model of medical education that prevailed in the United States and became general in Latin America by the mid-1950s was applied too in France herself.

Education and Practice in the Health Sciences: the 1930s and 1940s

The significance of the French mission advising on the structure, organisation and functioning of the medical faculty in Bogotá in 1931 is often understated. The French mission was preceded in the 1900s by a German mission to the Universidad de Cartagena invited by a German rector, which had no enduring nationwide significance.[123] Led by André Latarjet, the stress of the French mission was upon a pragmatic combination of the best of the revised French teaching practice of the 1920s and distilled Colombian experience. The overall aim was to shape a 'professional culture' and not merely a professional competence in medical graduates. A heavy emphasis was placed upon converting the Colombian medical establishment to a stress upon biological inquiry and laboratory techniques in line with the recent modernisation of French teaching practice. Arguing that a spirit of investigation was formed mainly in the laboratory, Latarjet and his colleagues laid a special accent upon a more intensive use of laboratories, improvements in the quality of equipment, better preparation of scientific personnel and the evolution of a spirit of inquiry. They did not, however, challenge either the primacy of clinical studies or the practice of ward-rounds. A stress was placed too upon the connection between study in the laboratory and in the operating theatre, and also upon the need for professors to receive salaries sufficient to allow them to spend an adequate part of their working week discharging their faculty and hospital functions.

The mission made recommendations regarding the standardisation of patterns of recruitment and promotion and pay-scales, in line with the needs of hospitals and mental institutions. The role and functions of the team led by

the university professor were also defined - the assistant professor, laboratory assistant, the *preparadores* and junior personnel like laboratory technicians and monitors required in operating theatres. A Plan of Studies was drawn up that sought to achieve an effective balance of theoretical, practical and clinical studies. Professors were advised to teach by urging students to reflect upon their personal knowledge and experience, and not merely to comment upon texts. A system of written and oral examination was outlined; and a recommendation was made that scholarships overseas be placed on a regular basis.

The content of the syllabus contained several features that merit attention. One was a care to stress the biological sciences throughout the education of students. Another was an emphasis in the third year on parasitology, dermatology and venereology that reflected Colombian conditions, along with radiology and physiotherapy. Tropical pathology, radiotherapy, obstetrics and child health and hygiene were emphasised in the fifth year, and forensic science, toxicology, general hygiene, mental health and the pathology of the organs of the senses in the final year. Further recommendations included the abolition of one or two chairs in 'infant medicine' and one in obstetrics, with the work being done by the new assistant professors of clinical obstetrics. These recommendations perhaps reflected a male-centred view of medicine that underestimated the significance of the health problems of women and children. They may too have embodied a low importance attached to paediatrics among French specialists arising from the low birth-rate in France. They may even have reflected the relatively low population growth in Colombia before the 'demographic explosion'. Instead, the Latarjet mission recommended the establishment of a chair in the study of respiratory diseases which it justified in terms of the scale of the tuberculosis problem, the importance attached to it at the teaching Hospital San Juan de Dios, and the social significance of the struggle against tuberculosis. The mission recommended too the creation of diplomas of higher studies in radiology, bacteriology, parasitology, hygiene and tropical diseases, with a view both to diffusing a more precise knowledge of common diseases, like childhood infections, leprosy, tuberculosis and venereal diseases, and to intensifying theoretical and practical knowledge of hygiene, bacteriology and parasitology. The overall aim was to produce the several hundred (no more precise figure was specified) practitioners needed to fill positions as directors and section chiefs of hygiene at all levels, school and military doctors, and specialists to handle questions of sanitation, sanatoria, dispensaries, leper colonies and port cleanliness.

Some ancillary recommendations are also worthy of mention. Advances in bacteriology, biochemistry, physiology and radiology created a need for laboratory accommodation and servicing so that the hospital was no longer only a series of wards and an operating theatre. Better conditions, especially carefully focused electric light, were needed in the operating theatre of the

Hospital San Juan de Dios. The study of social anthropology was encouraged, embryology should be taught, and an anatomical museum established. And there was no need for two professors of descriptive anatomy; one was enough for one thousand first-year students in Paris. Meanwhile, the manner in which cadavers were transported between the teaching hospital and the faculty revealed a grotesque casualness in attitudes to death and the dead in Bogotá. Latarjet and his colleagues did not share the Colombian appreciation of the Mexican popular culture of the *danse macabre* and its icons - cadaver, skull and crossbones. Cadavers were carried through the streets without a coffin or crate naked in a cart with their entrails exposed. For Latarjet a change in the mode of transport was essential in the interests of hygiene, decency, respect for the dead and science - the preservation of the cadaver. Furthermore, a decent burial was imperative. The custom of placing the remains of dissected corpses in sacks, taking them to the cemetery and burying them without any formal ceremony or service should be abandoned.[124]

The French ascendancy in medical education was reinforced. In the 1930s a period of six years of study followed by one year as an intern was required. In order to graduate the intern had to demonstrate his skills in the management of patients who were located in designated beds under his supervision and to write a thesis that he had to defend before a jury. The student had the right to choose a hospital or clinic before its preparation. Textbooks in French were widely used; the prevailing French terminology, for example 'external practitioner', was adopted. Colombians even used the expression *pathologie exotique* (*patología exótica*) in referring to 'tropical' diseases. The impact of Latarjet was to reinforce and acclerate existing trends, especially the upgrading of medical practice in the provinces by maintaining a flow of graduates of regional origins who returned to the provinces on graduating.

Medical education had clear limitations. Much learning was by rote and recitation. All subjects were secondary to descriptive anatomy; and in physiology there was no contact with the living human body, only with hamsters. The professor actively engaged in research was a rarity (and a prominent paediatrician educated at Harvard University lacked the modern facilities necessary to pursue his specialism). There was some disquiet too that, despite the broadly scientific thrust of the Latarjet recommendations, there survived a powerful tendency to sacrifice a spirit of scientific inquiry to the pursuit of *sabiduría*, and for intellectual scepticism and doubt to be suffocated by an unimpeachable professional *mística*. Entrenched attitudes had a peculiar obduracy; thus, because the study of anatomy continued to enjoy a high esteem, the discovery of a muscle similarly enjoyed prestige. Meanwhile, the absence of a selection procedure in the 1930s meant that all student applicants successful in the school-leaving examination (*bachillerato*)

were admitted. The number matriculated rose from less than one hundred in the early 1930s to four hundred a decade later, a figure that placed impossible pressures on restricted laboratory space. In the early 1940s no clinical histories were written in the teaching hospital, and only the names and temperatures of patients were recorded. To be recognised as a professor of the National University was the highest honour for a medical practitioner and invaluable in building a clientele. Because infallibility was inextricably associated with professorial status, no autopsies could be conducted on hospital patients because professors feared a loss of their authority among students when an autopsy contradicted their earlier diagnosis. Political and social liberalisation in the 1930s did not extend as far as any relaxation of discriminatory attitudes against stigmatised groups like alcoholics and prostitutes. Lack of access to French exports from 1940 meant that professors had to look elsewhere for books. To some extent Argentine texts, often based on French, German, British, Italian and Spanish works, filled the gap.[125]

Entry to the medical profession presupposed a good secondary education and sufficient resources to study in Bogotá, Medellín or Cartagena for longer than for law or pharmacy. Thus physicians came with barely an exception from the middle and upper classes, and young men – and, from the 1940s, young women – constrained by financial considerations chose to enter less prestigious and less costly careers like pharmacy and nursing. Older generations of medical doctors, who were concerned that young graduates should obtain gainful employment commensurate with their qualifications, were also anxious that the profession should not lose status by lowering entry standards to the faculties, shortening the period of study before qualifying, or reducing the scientific content of teaching. The theme of the social origins of the professions should be treated with caution, because Colombia was as regionally divided in terms of social structure as in patterns of wealth and power. Some considerable social fluidity was seen in areas of economic dynamism, like the Antioqueño frontier, the major ports and Bogotá itself. Here the new professionals – physicians, engineers and architects – found limited opportunities for employment and for social ascent in phases of growth like the mid- and late 1930s; and those who had established a niche retained it, if with difficulty, in periods of stagnation such as the early 1940s. By contrast, regions of little growth with rigid social and ethnic barriers, like Cauca, Nariño and most of Boyacá, offered few opportunities for young professionals. Here the middle classes were smaller, less secure, often disunited and heavily dependent on the upper class for employment. They were not uniformally progressive. Official positions which were created in periods of expansion were left unfilled or suppressed in phases of contraction. Private practice required a certain entrepreneurship which many physicians lacked; and the economic basis of private practice outside the departmental capitals was extremely precarious. Thus *boyacense* physicians sometimes decided to remain in Bogotá, or, as rail and road communications improved, kept surgeries in Bogotá and a *boyacense municipio* and commuted

between them. *Caucano* medical graduates too, especially from the 1940s, migrated to the lusher pastures of the Valle del Cauca, and occasionally to Bogotá.

No one nationwide pattern in the evolution of the profession can be identified. But certain trends can be detected. While large urban enterprises were required by law to employ a medical graduate, *hacendados* seldom employed a physician. They were not required by law to do so; they saw few financial gains in employing physicians, and felt few social obligations towards tenant farmers and rural labourers. Some considerable social distance separated the physician from the landed interests. A defensive indifference among large landowners was compounded by a priority among most governments that intricate rural power structures should not be disturbed by intruders and that the agricultural sector upon which export revenues and urban food supplies depended should not be offended. Health professionals were often in the vanguard of middle-class coalitions that struggled to overcome obstacles to social change; and where they succeeded, this was often because they co-operated with other professions that were similarly struggling for recognition. Gradually medical doctors saw the benefits to be gained from employing a professional architect to design a hospital and a professional engineer to oversee the construction of its water supply and its arrangements for electric energy, sewage and drainage. Similarly, architects and engineers used the services of medical professionals, with whom they had complementary professional interests in the cleansing and reconstruction of the water supply in the cities, the building of new housing with good ventilation, adequate bathrooms and hygienic kitchens, as well as the extension of drainage and sewage arrangements to new suburbs. Engineer-entrepreneurs on the railways came by the 1940s to see the advantages in hiring a young physician to assure that scarce skilled workers were healthy; and physicians co-operated with sanitary engineers, and in the 1930s, with the first generation of 'social visitors' (later social workers), in campaigns to curtail diseases. In their attempts to promote values of personal and collective sanitation and hygiene especially among labour and schoolchildren, urban and rural, the medical profession worked cordially with the traditional professions - lawyers, military officers and especially teachers and the parish clergy - when their involvement in local issues was not interpreted as an interference or an irrelevance. In their struggle for recognition physicians could depend upon the support of the more far-seeing members of the upper class, represented in power by such pragmatically progressive figures as Presidents Pedro Nel Ospina (1922-6), Enrique Olaya Herrera (1930-4), Alfonso López Pumarejo (1934-8 and 1942-5) and Eduardo Santos (1938-42), who allowed them a wide measure of discretion within small budgets. But physicians complained bitterly at the obstructive myopia of entrenched interests in the municipal governments of Barranquilla, Medellín and especially Bogotá, and also among *latifundistas*

and mine-owners whom they held responsible for various avoidable outbreaks of epidemics.

The practice of medicine graduates taking specialist studies abroad after qualifying from the medical faculties of the Universidad Nacional and the Universidad de Antioquia grew. An occasional graduate studied abroad after qualifying at the Universidad de Cartagena; and young men from the south-western departments opted frequently to study in Ecuador at the Universidad de Quito before returning to practise their profession in Cauca and Nariño. Some graduates of regional origins, especially those from Antioquia, returned from the Universidad Nacional to practise in their home departments; but a significant number, especially from the eastern departments, opted to settle in Bogotá, given the lack of opportunities to practise specialisms except in tropical medicine outside the capital city.

At intervals there were moves to promote professional cohesion among medical doctors by instilling a professional ethic in students, redefining professional values in the light of changing circumstances and diffusing professional publications. Nevertheless, there evolved profound differences within a highly stratified profession: between those trained overseas and the majority that was not; between the prestigious figure in the capital city attending the upper class and the small-town practitioner; between generations; and between specialisms. There were not the clear hierarchies that existed among the clergy and military, which avoided some of the bad-tempered public wrangling for which the clergy were renowned. However, there was certainly more professional coherence than among lawyers and probably more than among engineers and architects, so that the medical profession was able to make a more coherent impact on policy than other professions within its own area of competence but had slight impact elsewhere. Usually recoiling from public agitation, which medical leaders saw as inconsistent with their status and likely to boomerang, the professional elite tended to opt for quiet lobbying combined with judicious and unhistrionic press coverage. Generally physicians, like military officers until the mid 1940s and unlike lawyers and the clergy, stood apart from day-to-day politics. A prudent aloofness opened them to charges of introspection, which seemed confirmed as 'medical families' took shape.

An analysis of career patterns[126] indicates that until the Fall of France in 1940 Paris was the preferred destination of most ambitious young would-be medical specialists. A few studied and undertook internships elsewhere: at, for example, the Royal College of Surgeons in London. One studied at Lyons before specialising in tropical illnesses and urinary tracts at the Instituto E. Marchafera in Rome during the Second World War; a handful studied bacteriology and tropical medicine in Brussels, a secondary centre of the subject thanks to the Congolese connection; one Antioqueño studied surgery at the Martin Luther Hospital in Berlin in 1942 while completing his studies

at the university; another from Bucaramanga studied in Frankfurt, Berlin and Munich, specialising in gynaecology. Spain had few attractions, in spite of a treaty recognising professional qualifications as equivalent.[127] A few medical practitioners studied urology at Barcelona; and particular professors acted as magnets to disciples: Gregorio Marañón, a prominent pathologist, in Madrid; and later José and Ignacio Barraquer and Hermenegildo Arruga, ophthamologists, in Barcelona. But Spain was seldom a destination of Colombian students (the dictum *No hay ciencia en España* is still to be heard). Some students combined studies in different countries: undertaking undergraduate studies in Belgium, Spain or the French regions before specialising in Paris; studying both at the Tropical Institute in Hamburg and the IberoAmerican Institute in Berlin before moving to the Institut Colonial or the Institut des Maladies Tropicales in Paris. By the 1940s there was some disquiet that French and Spanish qualifications were often specious, that it was possible for a student to return with *certificados de asistencia* that carried more prestige than they merited.[128]

New trends can be observed in the early 1940s. One was a growth of study in the United States. A trickle of students took postgraduate studies of their own volition in the United States in the 1920s and 1930s. But the closure of European, especially French study opportunities, combined with the growing, if admittedly limited, availability of scholarships and fellowships for Latin Americans, especially from the Rockefeller and Kellogg Foundations and the PanAmerican Sanitary Bureau, to study in the United States, expanded numbers in the late 1930s and especially the 1940s. Their destinations varied considerably.[129] A small number of students, in, for example the pathology of tuberculosis, studied elsewhere in Latin America before studying in the United States. One distinguished exception, later a minister of hygiene, studied in Canada at the Montreal Neurological Institute before moving to the Neurological Institute of New York; and a radiologist (not a graduate of medicine) studied at the School of Tropical Medicine at the University of Puerto Rico which was affiliated to Columbia University.

Exposure to new external models deepened anxieties. One concern, evident especially among US-trained medical specialists, was the level of science prevailing amongst the older generation of surgeons and professors. There was a disquiet that surgical technique took priority over patient care and surgical results. One pathologist, trained at Johns Hopkins University in Baltimore, who has sometimes been claimed to have placed pathology in Colombia on a scientific basis, returned to the Universidad de Antioquia to campaign from 1944 for the need to verify clinical observations through laboratory examination. He examined discarded appendices to establish whether the patient had suffered from appendicitis or an inflamed appendix, or to clarify whether a patient was suffering from typhoid fever, colitis or amoebiasis, the last of which did not appear in French textbooks. He tried to rectify the anomaly that, despite the centrality of anatomical diagnosis in the

curriculum, medical students were more conversant with working with cadavers than pathological anatomy. In a series of lectures on clinical pathology he insisted on the need for study of all the organs of the patient, regardless of knowledge accumulated in prior examinations and surgery, and the collection of precise information – clinical histories, autopsies, the dates of laboratory tests.

A new generation of graduates could challenge the presumed infallibility of prestigious surgeons, whose claims could be refuted with scientific evidence; and a more accurate assessment of patterns of disease based upon more precise statistics of mortality and morbidity could be reached.[130] In the mid-1940s recipients of scholarships abroad returned to work in the epidemiology service, the phytopathology (plant disease) service and the experimental agricultural station at Roldanillo, Valle. Yet there was concern that scholars in public health trained abroad were not contractually bound to practise it on their return, and that some were even compelled to enter private practice for lack of public employment resulting from wartime fiscal stringency.

A major secondary trend of the 1940s, the significance of which was probably underestimated in the 1960s and 1970s, was to study elsewhere in Latin America. Particular institutions in Argentina, Brazil, Chile, Mexico and Uruguay, which had acquired a continent-wide celebrity for their specialist work, flourished within the framework of reformist and populist experiments. Colombian students of middle-class origins and with few opportunities to learn foreign languages more difficult than Portuguese were drawn to study paediatrics and neurosurgery in Santiago, nutrition, orthopaedics, traumatology and the study of digestive and genito-urinary tracts in Buenos Aires, yellow fever studies in Rio de Janeiro, and cardiology, obstetrics and gynaecology in Mexico City.

The impact of study elsewhere in Latin America, especially the Southern Cone, was profound. Postgraduates educated in Argentina, Chile and Uruguay encountered a medicine that was less elaborate than that in the United States and that some believed provided a more appropriate model for Colombia. Paediatricians, for example, admired what some described as a 'Latin American pathology' well adapted both to the limited resources of Colombia and to social conditions in which parasitical diseases and malnutrition were rife and therefore merited emphasis. In the eyes of Colombian postgraduates studying neo-natology, nephrology and paediatrics, Chilean and Uruguayan medicine had a particular appeal. Chilean medicine had a large European (especially German) component with a strong emphasis upon patient-centred low-cost investigation and treatment. Santiago had teaching hospitals where clinical histories were meticulously recorded, where all patients that died received autopsies, and where students experienced small-class teaching. On graduating Chilean physicians were required to

work in the public sector for four hours per day for three years. Paediatricians, in particular, were impressed by the importance attached to the speciality and to the way it strengthened the notion of the 'family doctor' who transcended specialisms. Both Chilean and Uruguayan medicine were conducted within a framework of strong political commitments to social welfare improvement, and the public health sector received clear ministerial leadership. Moreover, university professors, notably in paediatrics, were imbued with a powerful sense of community commitment. Thus, from Uruguay was brought to Medellín the idea that a mother should be encouraged to remain with her ill child in hospital.[131] In the 1930s a small group of Antioqueños had gone to Argentina to study respiratory diseases and tuberculosis. For the new generation tuberculosis had romantic connotations combined with the allure of new technology.[132] While particular Argentine institutions and teachers were admired by Colombian postgraduates, they believed Argentine hospitals and faculties to be weakened and distorted from the mid-1940s to the mid-1950s by *peronista* patronage politics.[133]

New medical faculties began to appear in the confessional universities in the 1940s. The Society of Jesus and the Archdiocese of Medellín were cautious about establishing medical faculties associated with the Universidad Javeriana in Bogotá and the Universidad Pontificia Bolivariana in Medellín, principally because a medical faculty was a heavy investment and failure would reflect badly upon the Church. There was no particular Catholic thrust behind the evolution of the medical faculty at the Universidad Javeriana. The main stated motives behind its foundation were to enhance the reputation of the university and to arrest a perceived decline of medical ethics. Conservatives and Catholics expressed alarm that control of medical education was slipping into the hands of the Liberal left in the Universidad Nacional during the 'Marxist' rectorship of Gerardo Molina, and were angered by the influence wielded over limited student places at the university by a woman psychologist and Communist refugee from Spain, Carmen Rodrigo. Protests, some of them from professors of the Universidad Nacional whose sons were excluded because the admissions regulations were enforced inflexibly, culminated in a small group of professors making an approach to Padre Félix Restrepo, the Jesuit rector of the Universidad Javeriana and the outstanding Colombian ideologue of Catholic corporatism. They argued that it was imperative to found a medical faculty where all students attended compulsory classes in Catholic morals and ethics and where Marxists and Communists had no influence. The teaching priorities of the Society of Jesus were theology, philosophy and law; and medicine was not an area in which it had a special interest. However, the proposal was put in such a way that the Jesuits could hardly resist it, even given the practical problems – a 'colonial cloister' for accommodation where laboratories had to be improvised, and the lack of an operating theatre. The first dean of the new faculty had briefly been dean of the national faculty, and faithfully emulated the teaching programme of the Universidad Nacional.

The Universidad Javeriana was open to two criticisms: that the faculty was founded out of personal pique cloaked in an intellectual rationale; and that the Society of Jesus, committed to teaching, had no commitment to the evolution of public health services for the less privileged sectors of society. The corollary of a medical faculty, namely a teaching hospital, was an expensive proposition, which the Society resisted, instead encouraging the faculty to make contracts with private and public hospitals for the study of clinical surgery, as well as obstetrics and gynaecology. When a commission of students protested to Padre Restrepo that they felt limited by the absence of a teaching hospital, and that they were compelled to travel long distances to attend few patients, Restrepo replied that the state would not allocate resources to a private institution and that the Society of Jesus could not fund a hospital. Having calculated the relative costs and benefits of making payments to other hospitals for assistance to its students and of building its own, the Society opted for the former.[134] In Medellín in spite of claims that teaching at the Universidad de Antioquia was out-of-date, the first attempt to establish a confessional medical faculty failed after one year, and its students were transferred to the Universidad Javeriana.[135]

A pharmacy school intended to supply the need for pharmacists to compound and dispense medicines was founded as a dependency of the medicine faculty of the National University. As in medicine the main influences were French, and a handful of postgraduates studied in Montpellier, Paris and Lyons. During the 1930s student pressure enlarged the curriculum so that it included more scientific content, and the period of study before graduating was extended from two to four years. The school became a faculty that enjoyed more independence: but its functions remained the same – to develop a small corps of professional pharmacists, with a status inferior to the physician, who would elaborate pharmacopoeial formulae from books giving directions for their preparation. Practical experience in weighing, mixing and compounding drugs was obtained in the pharmacy of the teaching hospital.[136] A prominent trained pharmacist, who acquired professional qualifications at Lyons and Clermont-Ferrand between 1931 and 1934, became founder-dean of the pharmacy faculty of the Universidad Nacional, a member of the national committee controlling the price of pharmaceutical products during the Second World War, founder-manager of a pharmaceutical enterprise, the author of a compilation of pharmaceutical legislation and the director of the journal of the pharmacy faculty at the Colegio Nacional de Farmaceúticos. One pharmacy graduate of the Universidad de Antioquia, who did postgraduate study in Brazil and Argentina, went on to be Inspector General de Salubridad of the departments of the Caribbean coast between 1934 and 1936 and managing director of Picot Laboratories in 1938. Among other activities he established the technical division of the joint Colombian-Brazilian enterprise Incobra (Instituto ciéntifico colombo-brasileiro), which aimed to substitute Latin American products for imported medical-laboratory products. His career

illustrated the beginnings of a major shift among pharmacy graduates. In the 1930s and early 1940s their ambition was usually to establish a pharmacy business where they sold drugs that they compounded themselves. By the mid-1950s the general trend was for pharmacy graduates to be employed as salesmen to retailers without a formal pharmacy training who sold pre-formulated pharmaceuticals produced and packaged by national subsidiaries of transnational firms. These trends were accompanied by a growth in self-prescription of mass-produced proprietary remedies and the beginnings of pharmacy chains.

The professionalisation of nursing was a recurring theme of public debate; but little enduring achievement was evident till the 1940s. A nursing school founded in 1905 in Cartagena by a professor who had worked with professional nurses in France had come to nothing, because it was proscribed by the Archbishop of Cartagena on the grounds that it challenged the monopoly of care of the religious orders.[137] Discussion of Rockefeller-assisted nursing education in the late 1920s was aborted by the World Depression. The nurses trained in the late 1930s by the national organisation of the International Red Cross in accordance with its international statutes had difficulty in obtaining official recognition of their qualifications. Some *ad hoc* courses in nursing were arranged in the light of recommendations for a *bachillerato* for girls drawn up after a German pedagogic mission advised on a curriculum and the training of women teachers.

In the 1940s, however, the position in nursing changed significantly, thanks to a series of initiatives to train senior nurses for teaching and higher staff positions and to establish hierarchies of auxiliary nurses, midwives and health visitors. Both Rockefeller and official US-PASB advice and funding complemented Colombian initiative in the first stages of a programme to consolidate a modern base in nursing education that took twenty-five years to complete.[138] The Dean and several professors of the Nursing School (later Faculty) at the Universidad Nacional were from the United States and Canada between 1945 and 1958. Such external influences signified the introduction of a regimen meting out discipline in the tradition of Florence Nightingale. Duty, deference, order, sanitarian ideals and practical work were extolled, along with the sexual division of labour. A stress on character-training and the monitoring and regulation of the behaviour of student nurses marked them off from other students until the early 1970s. Students of nursing were rigidly segregated from male students, including medical students, even for the teaching of microbiology.

New legislation in 1946 was designed to end the certification of nurses by hospitals or physicians on the basis of on-the-job experience, to replace it with formal education and professionalisation, and to establish clear categories of General Nurse, Hospital Nurse, Auxiliary Nurse, Nurse-Midwife and Health Visitor. However, the implementation of these decisions

was impeded by the absence of schools of nursing – only that of the Universidad Nacional was officially recognised – with the consequence that several self-styled private 'nursing schools' came into existence. A shortage of nursing professionals competent to teach meant that results in nursing schools outside Bogotá were 'something less than deficient'.[139] Other obstacles to the evolution of a professional body of nurses included the ambiguous status connotations of nursing and domestic labour and fears of middle-class parents for the safety of their daughters in hospitals – institutions inhabited by the poor and destitute where men and disease were rife.[140] Hospital work was acceptable to a patriarchal society only because a cloistered regimentation assured a compliance with normative behaviour and the hospital was seen as an extension of the domestic boundary. Other factors favoured the rise of modern nursing: a determination among civilian elites to feel and be part of the West in the post-war order; pressures from middle-class women of capital city and provincial origins for professional openings; the pressures too of progressive physicians concerned to raise the quality of attention and management; and the manifest inadequacies of care and administration in the hospitals as cities grew. Among the first nurses and 'social visitors' were daughters and nieces of physicians.

Nursing became a theme fuelling tensions between the religious orders and lay professionals. At times anticlerical laypeople alleged that self-trained nuns, entrenched in senior positions, placed the priorities of their orders – for example, unfailing religious attendance at 6 pm – higher than attention to patients. They were accused too of attaching more importance to an appearance of discipline – keeping buildings and equipment neat and locking objects up – than to science – precision in measuring doses, giving injections punctually, applying sterile techniques conscientiously and arranging instruments and medications expertly. Anti-clericals claimed that some nuns insisted that young women in labour should not be given prophylactics to reduce their pain because the mother had sinned in order to have the child.[141] The religious orders and their allies answered by arguing that since nuns were not preoccupied with the length of the working day and had no competing commitments like family obligations, their dedication to patient-care and hospital administration was unswerving and complete. Moreover, they continued, since nuns did not work for a salary, there was more personnel stability in hospitals run by them because they were not tempted by better remunerated positions. Nursing teaching at the Universidad Javeriana, evolving from *cursos de hogar* that emphasised first aid and domestic management[142] came about as a response to fears of lay hegemony at the Universidad Nacional and the lay challenge to Catholic control of nursing practice. Lay nurses distancing themselves from the partisan attachments of the 1940s and 1950s today concede that the religious orders provided useful examples of discipline and community work, which, in Bogotá, were partly lost.

In Medellín the Hermanas de la Congregación responded to the lay challenge by professionalising themselves, some of them attending courses in nursing at Catholic universities in the United States. The main initial impetus to a nursing school came from a French nun, Thérèse des Anges, and a group of eleven Hermanas de la Presentación, who, backed by the Dean of the Medical Faculty of the Universidad de Antioquia, used the syllabus and experience of the nursing faculty of the Universidad Nacional as a professional yardstick while resorting to the discipline of their order so as to establish a *mística de profesión*.[143] In Cartagena by 1950 conditions had altered, and the power of the Church diminished. Professional nursing at the new university nursing school was more socially acceptable than in the uplands, and recruited prominent women like wives of the leaders of the dockers unions. The advocates of modern nursing won public support from women journalists and some backing from the departmental and city authorities, but encountered resistance from entrenched interests in the medical profession.[144] Throughout Colombia opportunities for nursing employment were limited. The first generation of professional nurses worked for the most part with medical practitioners in private work and in health centres, and not in the hospitals. By 1950, because professional and patient pressures prompted hospital directors to appoint graduate nurses in order to improve the training of nursing auxiliaries and to raise the quality of attention, the place of qualified nurses in hospitals was better established.[145]

Few career openings existed for women even in the health care sector before the 1940s. Two exceptions to this general observation stand out. One nurse, born in Medellín in 1916, who studied with the nuns of the Instituto de la Presentación in Medellín between 1938 and 1942, was active in local charity and philanthropic organisations – the Sociedad de Mejoras Públicas, Junta Directiva Pro-Mendicidad de Antioquia and Sociedad Cívica Manuel José Cayzedo – and contributed to the building of the municipal maternity clinic of Medellín and two pavilions in the Casa de Pobres of the adjacent town of Belencito. Another nurse who joined the Red Cross as a volunteer in 1928 and served the armed forces during the Leticia War in Caquetá was briefly director of the nursery of both the Bavaria Brewery and the central market place in Bogotá. In the late 1940s new career opportunities were made available with the beginnings of the national social security institution, the ICSS (Instituto Colombiano de Seguros Sociales). Nursing teams – a qualified nurse accompanied by an auxiliary – were soon identified by the medical leadership of the ICSS as having explanatory skills often lacked by doctors, that could be used to bridge any gap between professionals and workers and small businessmen. The ICSS management assigned nurses various roles. They were expected to explain the significance of the ICSS to affiliated workers, to dispel the image of hospitals as preparatory stages before death and to undertake vaccination campaigns against smallpox among shop, brewery and chocolate factory workers. They encouraged pregnant women

to seek attention from the maternity services before childbirth and taught mothers about breast- and bottle-feeding and the upbringing of infants.[146] A small number of new opportunities in nutrition offered openings for professional women. One, in particular, after specialist studies in Buenos Aires, returned as a university professor of nutrition, undertaking pioneering studies of dietary patterns of personnel in the national police and 500 'standard families', while also working in the Laboratorio de Nutrición y Alergia. One of the first social workers associated with the Nursing School undertook specialist courses in Argentina and Chile.

The history of nursing in its first stages in Colombia was not that of a *gran lucha*, but of gradual evolution.[147] Far from posing a challenge to the entrenched hierarchies within the health care professions, the first generation of professional nurses accommodated and reinforced them. Inhibited by patriarchal constraints from above and differences among women, especially between the lay and ecclesiastical sectors, nursing practice did not break down barriers of status among health workers. The fact that graduate nurses were outnumbered by medical doctors gave nurses the value of scarcity, which they could use to establish a niche in a rapidly evolving *status quo*. But gender prejudices remained potent.

The main features of medical practice included a tendency towards the concentration of specialist knowledge and care in Bogotá and, to a lesser extent, Medellín, where specialist facilities existed. A proclivity existed among medical practitioners to gravitate to the urban centres where private practice was profitable, and better opportunities for the schooling of their children beckoned. And there was a marked propensity among medical faculties, following external examples, to train specialists rather than general practitioners. A growth in the number of professional organisations reflected both growing self-confidence and trends towards specialisation within the profession. Thus the broad-based Federación Médica Colombiana and Colegio Médico de Cundinamarca were established by the mid-1940s, together with specialist societies in such areas as respiratory diseases, radiology, obstetrics and gynaecology, and work medicine. These societies sometimes had their own specific connections with philanthropic organisations like the Sociedad de San Vicente de Paúl and Sociedad de Mejoras Públicas, the Asociación de Médicos Católicos Colombianos, and such local bodies as the Club Rotario of Cartagena and the Junta de Asistencia Social of Popayán. The modernisation of professional education and practice among physicians did not meet the needs of most of the poor who lacked the resources to enjoy 'modern' provision: as previously, measures to curtail the activities of *curanderos* could only offend those groups who depended on their services. And, indeed, a marked unevenness between sub-sectors within health care existed (a precocious record in cancer but an unimpressive one in malaria, for example), which was to some extent

merely a national manifestation of an international phenomenon, but could be explained too by particular domestic factors, like a willingness to spend official funds upon leprosy rather than upon intestinal diseases.

The precocious record of Colombia in public sector cancer research and treatment occurred because Colombian students were exposed to French pioneering in cancer. Effective pressure within the civilian elite of a small core of specialists with managerial skill and a dedicated commitment to institutional innovation assured the genesis of a modern cancer service during the late 1920s. On returning from Paris where he won recognition from the Académie de Medicine for his discovery of the Pasta Colombia (1920-4) and was a laboratory assistant at the Institut de Radium, Alfonso Esguerra Gómez founded the radiotherapy service of the Hospital de San Juan de Dios in 1928. Following a French advisory mission the Instituto de Radium was founded between 1930 and 1934 as a dependency of the Universidad Nacional, modelled largely upon the institutes of radium founded in Paris in 1909 and in London and Manchester in 1914. The practice of diagnostic radiology and radiotherapeutics using X-ray installations which gave physicians opportunities to examine the internal anatomy of patients without recourse to surgery was well established internationally by the 1930s. In Colombia new career opportunities arose with new specialisations. With radiology came new positions for interns in the radiodiagnosis services at the Hospitals of San Juan de Dios and La Misericordia in Bogotá and the *lazareto* of Agua de Dios in the 1930s. New openings were found for young specialists in small cities like Girardot and Armenia in the 1940s.

Career possibilities for young graduates expanded in the 1930s and 1940s. The quality of public health personnel was limited by a high turnover in many positions in the public sector, especially at departmental and city level, which resulted from poor remuneration, the prevalence of short-term contracts and political pressures. In the philanthropic sector, efficiency was at times impaired by the frequency of part-time, honorific positions, such as regional chief of the National Red Cross. New appointments were made at national, departmental and municipal levels and by private enterprise.[148]

Medical practice reflected broader patterns outside the large cities. In a provincial capital like Pasto the family doctor often received payment in kind, usually chickens and other produce, from peasant clients. He had his own pharmacy where his wife and children helped to prepare medicines, and he showed an interest in botany.[149] In Tunja in the 1930s professional practice was hardly different. For the incipient middle class and some artisans the medical practitioners was a family friend with an intimate knowledge of the medical and psychological history of the family. Seldom was he consulted at the early stages of an illness, since professional attention was considered justified only when the condition of the patient had deteriorated seriously. Because few patent drugs were fabricated in laboratories, most were made up

by pharmacists. Nuns played a vital role as midwives and nurses and as managers of orphanages and asylums. Because the charity hospital was acknowledged as the *antesala de muerte*, the more prosperous classes were cared for at home and nuns were sent to work in it as a punishment.[150]

Changing Patterns of Disease: the 1930s and 1940s

In the late 1940s the main killer diseases remained the same as before. In 1946, according to official statistics, there were 160,460 recorded deaths in Colombia; 36 per cent of death certificates were signed by a physician. The leading diagnosed causes of death were diarrhoea, enteritis, etc., 19,671; congenital malformations and premature births, 14,201; pneumonia and bronchial pneumonia, 10,657; and bronchitis, 9,166. Heart diseases (all forms), malaria, nephritis and tuberculosis (all forms) each represented between 4,000 and 5,999 deaths; accidents (other than motor vehicles), cancer (all forms), whooping cough, measles, typhoid and paratyphoid fever and intracranial lesions of vascular origin each represented between 2,000 and 3,999 deaths. Diseases of pregnancy, childbirth and puerperium, dysentery, homicide and typhus each represented between 1,000 and 1,999 deaths. Certain other diseases, such as syphilis, smallpox and diphtheria represented fewer than 1,000 deaths each. 29,492 (about 18 per cent) of total deaths had unknown or unspecified causes.[151] A high proportion of deaths was attributed to causes amenable to known methods of control: intestinal diseases, dysentery, malaria and acute infectious disease, like whooping cough and measles. Table One shows the incidence of selected illnesses in 1948 in Colombia for 209 municipalities which reported to the hygiene ministry (out of 815); these 209 represented approximately 5,420,010 persons in an estimated total population for that year of 10,998,920.

In 1944 a technically proficient yellow fever service was established, fifty per cent funded from national sources, fifty per cent by the Rockefeller Foundation. The case for a comparable malaria service was established, with over 52,000 cases diagnosed in 1944. The budget assigned to combat tuberculosis had expanded significantly since the mid-1930s, but was still estimated to be only one-tenth of that needed. However, the inference can be drawn that the positive value of many public health measures, for example those resolutions of 1920 which outlined 'petrolisation' practices in mosquito-breeding pools and prophylactic measures to counter typhus and typhoid fever, remained more educational than directly enforceable in the late 1940s.[152]

The Carlos Finlay Institute founded in 1935 assumed the main responsibility for action to counter yellow fever. Its laboratory produced the

vaccine against yellow fever that was used in a ten year campaign of mass immunisation beginning in 1937 during which 1,120,000 persons were immunised, in spite of breakdowns of equipment that was difficult to replace during the Second World War. All military personnel, oil workers and prisoners were vaccinated. Vaccine was also exported by air to nine neighbouring countries. No cases of urban yellow fever were diagnosed after the Institute was established; but a risk of epidemic remained in the late 1940s because most towns were inflected with the mosquito *Aedes aegypti* which contains the reservoir of infection and transmits it transovarially through infected eggs.[153]

The malaria position was uneven. In 1947 it was reported in Cali that malaria was now effectively controlled; its incidence in Cartagena had been reduced by the introduction of cement channels; in Barranquilla mosquito breeding-grounds had been controlled by paving and channelling the Rebelo water-course, and Magoon traps (named after the US Governor of occupied Cuba) had been successfully used. DDT fumigation was proceeding in one suburb of Santa Marta and on the outskirts of the city; and a fall in the incidence of the disease was registered in La Dorada and Puerto Salgar thanks to new engineering works. In Medellín a new anti-malaria works project had been signed between the city and the SCISP (Servicio Cooperativo Interamericano de Salud Pública); and a high incidence of malaria was registered on the Ferrocarril de Antioquia near Puerto Berrío. In Buenaventura studies of one anopheles were proceeding to define whether or not it was a vector of malaria.[154] Yet by 1950 there was cause for considerable disquiet regarding malaria. Programmes of control were obstructed by shortages of trained personnel and even of funds to import insecticides and drugs. The geographical coverage of departmental programmes was too restricted to bring about an effective reduction in national malaria incidence. Doubts were expressed as to whether it was practicable to eliminate mosquito breeding-places outside the cities through drainage and land-filling projects. One alternative – the use of newer drugs possessing suppressive and curative properties – was giving encouraging results in experimental areas. DDT was also being used.

Although tuberculosis mortality statistics were not especially impressive (3,966 deaths through pulmonary disease, 514 caused by other diseases in 1948), well-substantiated medical evidence combined with the everyday experience of physicians suggested otherwise. Between 1944 and 1948 about 1,350,000 persons were examined, usually with the help of X-rays, among whom 51,000 new cases of tuberculosis were found and 80 required active treatment. However, isolation continued to be the main feature of hospital treatment for tuberculosis, so that according to an ICSS survey, over one-half of patients died in hospital. The tuberculosis hospital of Medellín was almost a fortress, where patients – textile-workers, jewellery-makers, and other artisans – were subject to a system of reclusion, because tuberculosis

remained taboo and its victims were the objects of fear.[155] Imperfect data for pulmonary tuberculosis in Colombia demonstrated mortality rates of 10-25 deaths per 10,000 persons; and morbidity studies conducted in Medellín indicated especially high rates among children (12.3 per cent positive) and minors (41.5 per cent positive). The beginnings of mass-screening and case-finding gave grounds for cautious optimism. And a national expansion in the diagnosis, treatment and prophylaxis of tuberculosis was occurring despite problems at local level. A decline in the tuberculosis services of Cúcuta and Bucaramanga was caused by breakdowns in radiodiagnostic equipment and difficulties in obtaining spare parts; and the virtual closure of the service in Ocaña (Norte de Santander) was caused by the resignation of doctors and difficulties in replacing them due to poor remuneration. The drive to arouse public consciousness of the dangers posed by tuberculosis met with some response in the establishment of a model school for child victims and special wards for children and adults in two Bogotá hospitals. But whereas public opinion had a probably exaggerated fear of the risks posed by leprosy for which the case for the segregation of patients was not proven, the risks posed by tuberculosis - pulmonary and extra-pulmonary - were underappreciated, so that insufficient funding, either philanthropic or official, was available to build a tuberculosis hospital.

By the 1930s the framework was set for investigations with modest resources into immediate disease problems, conducted by a senior professor accompanied by a junior researcher, who, in the absence of laboratory assistants, did the essential microscope work together. Luis Patiño Camargo, who researched into the mosquito vectors that transmitted diseases, gave an essential impetus to an emphasis upon the home and occupational environment of the ill person to complement the hospital and laboratory-based traditions; and he contributed significantly towards shaping an intellectual environment where public health as a study could acquire impetus. Patiño Camargo invited one recent graduate, Hernando Groot, to join him in studying an unidentified disease that was rampant in the south-west in 1939-40. The disease was established to be bartonnellosis (*verruga peruana*); and Groot was left in Pasto by Patiño to continue the study alone.[156]

One brilliant career, that of Jorge Boshell Manrique, illustrates some broader trends in the relationships of public health, external influences and research into tropical diseases. Having taken his first degree at Lausanne in Switzerland, Boshell specialised in hygiene and tropical illnesses in Brussels between 1928 and 1930, beginning his career as a doctor employed by a diamond mine in the Belgian Congo. At 28 Boshell established himself in Villavicencio with the aim of undertaking research into tropical diseases in the Llanos Orientales and jungle regions; and in 1934 he made his first diagnoses of jungle yellow fever, isolating the virus in 1935.

Table 1
Incidence of Selected Reported Illnesses in Colombia, 1948

Disease	Number of Cases	Rate per 100,000
Total	504,618	
Malaria	89,727	1,655
Influenza	75,756	1,398
Intestinal Parasites	72,421	1,336
Hookworm Infestation	40,228	742
Amoebic Dysentery	38,395	708
Gonorrhoea	29,614	960
Syphilis	27,158	501
Whooping Cough	20,057	859
Typhoid and Paratyphoid Fever	11,207	207
Measles	11,169	478
Scabies	10,273	189
Tuberculosis of the Lungs	8,667	160
Pneumonia	8,599	158
Chancroid	7,802	253
Smallpox	7,356	71
Diarrhoea and Enteritis (under 2 yrs)	6,875	1,459
Erysipelas	5,255	97
Mycosis	3,883	71
Typhus	3,471	90
Pinta	3,395	62
Relapsing Fever	3,085	57
Chickenpox	2,954	54
Mumps	2,790	51
Yaws	2,357	43
Diphtheria	2,238	96
Impetigo Contagioso	2,126	39
Opthalmia Purulent	1,940	36
Lymphogranuloma	1,517	49
Granuloma Inguinale	822	27
Puerperal Fever	813	77
Infectious Hepatitis	640	12
Bacillary Dysentery	445	8
Tuberculosis (other forms)	416	7
Tetanus Infantile	301	171
Rubella	287	13
Leishmaniasis	270	5
Dengue	95	2
Poliomyelitis	67	3
Filariasis	59	1
Epidemic Meningitis	24	0.4
Bartonellosis	25	0.5
Scarlet Fever	23	0.4
Trichinosis	12	0.2
Undulant Fever	4	0.07

Source: IBRD, *The Basis of a Development Program for Colombia* (Baltimore, 1952), Table 52

In 1940 Boshell found the mosquito transmitting yellow fever in the Llanos Orientales, and in 1946 captured the insect in the *selva*. He also went to La Goajira and the Pacific coast of Chocó to study the characteristics of malaria in the early 1940s; and he studied beriberi among Colombian troops in the frontier river-port of Leticia. Winning international recognition, Boshell obtained Rockefeller support for laboratory development, taught courses about yellow fever in Brazil, and studied it in the Andean highlands of north-west Argentina. He returned to Colombia in 1947-9 as director of the Instituto Samper Martínez, subsequently working at the Escuela Superior de Higiene.

Towards a Modern Social Security System?

Social security in Colombia had its roots among the military. *Montepíos militares*, military charitable funds to protect the widows and orphans of soldiers, had been founded in 1827 by Bolívar; and the need for labour law and social security, with an emphasis upon the bereaved of the civil wars, was underlined by the Liberal *caudillo* General Rafael Uribe in 1904. However, despite the pressure of the International Labour Office to adopt legally binding international labour standards in such areas as the protection of the life and health of workers and the prevention of work hazards, Colombia was a Latin American latecomer to social security provision.[157] Three legislative projects had been introduced between 1926 and 1930. The first sought to establish a Caja de Seguros de Trabajo that would cover maternity care and risks of invalidity, old age, illness and death for all wage workers. The second aimed to create a system of cash benefits for work-related disabilities. The third revived the main features of the first project. All were shelved.

The same fate befell a series of similar projects between 1935 and 1941, only one of which became law; but this never came into force, and was suspended by a subsequent law. Out of the legislative projects of the 1930s emerged only a modest patchwork of provision that was financed entirely by employers. Coverage embraced only a very small proportion of the working population, and those covered tended to belong to middle-income groups, mainly public sector employees. For this minority provision was comprehensive, covering particular contingencies and more general questions, and embracing severance pay and paid vacations, as well as old age, occupational illness and accident benefits.[158] Only in 1944-5 were there moves to enlarge the system of protection and coverage, to impose broad responsibilities on employers and to generalise a system of contributions.[159] Law 90 of 1946 established the Colombian Institute of Social Security (ICSS), supplemented by the Caja Nacional de Previsión for

official employees. It was intended that the ICSS should administer an ambitious programme which combined health, maternity, disability, work accident, occupational illness and retirement insurance, but which excluded unemployment insurance and relief for low-income groups. It was envisaged that many functions previously covered by company welfare services, the *Beneficencias* and *ad hoc* budgetary welfare allocations would be taken over gradually by the ICSS, a quasi-public body intended to operate free of political pressures, whose management contained representatives of the national government, the medical professions, and affiliated employers and workers. The aim was to establish, with Brazilian advice, a bold programme, but to proceed slowly, launching the Institute after four years preparation. The first ICSS services were confined to some 50,000 workers in Bogotá and its environs, and were financed by imposing a tax equivalent to eight per cent of the payroll to which the employer paid four per cent, the employee two per cent and the government two per cent. By June 1950 90,000 workers were covered.

The initiative in Bogotá was followed by feasibility studies in Medellín. A directory of enterprises indicated a potential of over 7,000 affiliated enterprises in Medellín and its satellite towns, and a census indicated over 65,000 potential affiliated workers. A maternity clinic was purchased, which, in keeping with the Social Catholic thrust of the ICSS in Medellín, was renamed the Clínica León XIII. A central dispensary was established, and consultancy rooms were opened in the manufacturing centres of the Valle de Aburrá. In 1950 a Caja Seccional was founded too for the Quindío and northern Valle del Cauca, that had the significantly different function of reaching out to far-flung coffee-producing municipalities.

From its inception the ICSS confronted acute problems. There was resistance from some medical practitioners, who, fearing both a threat to their livelihood and a loss of independence, expressed concern that, as state employees with standardised hours and pay, they would be unable to define their own jobs, be denied the liberty to fix their own fees and be subject to administrative decisions that curbed their clinical independence. Financial problems, outstanding among them the failure of the state to pay the contributions laid down by Law 90 and also delays in payment by affiliated enterprises and workers, were exacerbated by accountancy difficulties – the absence of clear budgets outlining income and expenditure and of an auditing office. To increase medical benefits hospital facilities controlled by the ICSS were needed; and it was calculated that the cost of new hospitals would be defrayed by using a large part of the excess of contributions over payments in the old age insurance programme during the early years of the scheme. Yet, as early as 1956, this was to prove a miscalculation: the building of a new clinic in Bogotá, that was intended as a symbol of ICSS success, had to be halted.

Political problems also beset the ICSS. It is unclear how far urban unrest and the *bogotazo*, coupled with astonishingly high levels of turnover in public office, influenced the ICSS programme. There was the possibility that its implementation was speeded up, because the exponents of Social Security provision used the socio-political upheaval to argue that instability would be alleviated by granting organised labour an expanded stake within the *status quo*. However, it seems likely that the impact of processes accelerating change was outweighed by that of factors decelerating it. Managerial confidence was dented by uncertainty about the financial viability of the Social Security programme and by the difficulties encountered in maintaining records for the covered population that arose from a scarcity of competent accountants and statisticians. Inadequate population data, the unjustified assumption of a currency with stable purchasing power, continuing infighting about levels of contributions and divisions within the ruling Conservative party aggravated uncertainties further. The authoritarian *laureanista* faction, which came to power in 1950, suspected all worker representation, even Catholic trade unions, as evidence of subversion. The Gómez-Urdaneta administration (1950-3) perceived the branch of the ICSS in Medellín as part of the power-base of the more conciliatory *ospinista* Conservative faction and the branch in Bogotá as a means by which the *ospinista* faction hoped to build support among *bogotano* organised labour before the 1954 presidential campaign. Thus conditions were hardly auspicious for the ICSS. There was no drive to dismantle it altogether but it received little encouragement to expand its activities.[160] A sectional office in Cali was closed immediately after its inauguration owing to funding difficulties. The accomplishments of the ICSS in its early years were modest: among them were some of the first scholarships for training in social security and hospital administration, a drive to raise levels of domestic hygiene, and the first work on bio-statistics, especially patterns of mortality and morbidity, among affiliated workers. Perhaps the most important achievement consisted of the first steps towards a programme for the prevention of occupational risks.[161]

The foundation of the ICSS was probably mistimed and its structure and organisation misconceived. The ICSS was beset by problems of financial stringency, conceptual weakness – a model hastily borrowed from Mexico with insufficient concern for Colombian conditions – and political expediency. The notion of a disinterested management presiding over a quasi-public body free of partisan political interference was utopian in the years of polarisation between 1948 and 1958. Furthermore, an initiative of the dimensions of the ICSS required powerful backing from the state which the chronically unstable Ospina Pérez government could not provide and that was anathema to large parts of the right-wing Gómez-Urdaneta administration. Initially the ICSS won widespread employer support. Ideologically, there was some appeal in Social Security arrangements where benefits were a matter of contract rather than charity and thus were compatible with a stance of

economic individualism. The ICSS won the endorsement of the industrialist pressure group (Asociación Nacional de Industriales - ANDI), on the grounds that it was in the interests of the manufacturing sector to have a more healthy workforce. There was also the less highminded attraction of offloading some of the costs of social security provision onto the state, but this wore off when the state failed to comply with its statutory contributions. Some entrepreneurs preferred company provision, not least because they controlled its range, cost and quality directly. Thirty-six Antioqueño enterprises, including the largest textile firm Coltejer, had already by 1950 sought exemptions; and now the ANDI shifted its position, claiming that the ICSS made more demands of manufacturing industry than it could meet and that the powers of the ICSS manager were excessive.[162]

Social security provision needed the active support of departmental government, which was notably unforthcoming in Valle del Cauca, crucial as a region containing a fast-growing manufacturing base in Cali linked to an increasingly powerful agribusiness sector - especially in sugar-cane - and about to embark on a major hydroelectricity project. Support from the trade union confederations was also essential; but one, the Confederación de Trabajadores Colombianos (CTC) was being dismantled both physically and juridically, and its members, especially *bogotanos* of *gaitanista* leanings distrusted the initiative as a palliative from an alien government desperate for electoral support in the large cities rather than as a victory for worker militancy. The other, the Unión de Trabajadores Colombianos (UTC), lacked credibility and a following among large parts of the organised workforce except in Medellín. Arguably the ICSS diverted scarce personnel from improvements in public health and preventive medicine that had benefits for the population as a whole to provision for a minority with some ability to pay on a contributory basis.

Health Care at mid-Century

By 1950 health policy had some clarity of purpose, only intermittently evident in the inter-war decades. It was broadly accepted that the public health structure should be strengthened and measures to prevent disease fortified; that more health professionals should be recruited and employed; that environmental health, especially the construction of such sanitation facilities as water purification and waste disposal systems, should be given high priority; and that the system of hospitals and, imprecisely defined, the broader public welfare system should be enhanced. There was a general consensus that the hygiene ministry should operate some national institutions, and should undertake direct campaigns against yaws, for example, which

gave it an impact in some outlying parts of Colombia, like Chocó, where other ministries had none. But otherwise, it should aim only at assuming broad areas of responsibility like the issuing of regulations and setting of standards, the distribution of funds and the provision of consultants, and information-gathering. Policy should aim at devolving the greatest possible measure of administrative and financial responsibility to the departments and municipalities. At the same time, innovation should not be overstressed. It was more important to make a health care system that was functioning inadequately, especially with regard to food precautions – meat inspection, milk pasteurisation and the refrigeration of meat, fish and dairy products – work better. Private initiative was to be welcomed where it complemented public policy, as for example, in hospitalisation for tuberculosis.[163]

In 1950 there was some cause for cautious optimism in Colombia about health care. The gradual recovery of the economy and the permanence of that recovery at least meant that few initiatives were abandoned for lack of finance. The Colombian health status compared favourably with that of Venezuela and Ecuador. The hygiene ministry had some successes to its credit; and, even if its functions were more normative, advisory and technical than operative, its performance gained more respect than that of the other new post-war ministry, the ministry of justice. The ICSS, greeted with more caution than the ministry of hygiene, had yet to prove itself. More than just a piece of rhetoric, the first national hospital plan of 1950 was an attempt to turn haphazard into systematic arrangements. For the first time, in the report made by the World Bank Mission headed by Lauchlin Currie, the health care sector experienced a coherent attempt to analyse current conditions, forecast future needs and allocate resources rationally. The World Bank Mission reported a growing awareness of poor health as a drain on resources and one reason for failure to reach maximum productivity, and of inadequate nutrition as a factor debilitating the labour force.

Another source of optimism was the relative freedom of health care from the polarisation of Conservatives and Liberals that divided Colombia. Why was this? The reorganisation of health care did not jeopardise the position of the ruling elite, and thus concessions to the principle of equity were more readily made than in, for example, agriculture. There were memories of disinterested medical practitioners in the War of the Thousand Days (1899-1902) who had served the wounded of both sides and for whom the conservation of life was more important than partisan commitment. Most professional leaders attached more significance in the late 1940s and 1950s to long-term health improvements than to day-to-day politics and professional friendships built across the partisan divide survived *la violencia*. External funding of essential campaigns against endemic and recurring diseases played a role too: projects containing an element of foreign funding were for the most part free from politicisation because external donors would not countenance the partisan selection of personnel. (The anti-malaria campaign

was exceptional, but only briefly in 1952.) Perhaps too the shortage of medical practitioners played a part. Whereas lawyers abounded in the small towns where *la violencia*, thrived and competed for business and government positions, medical practitioners were in short supply and could afford to be politically aloof. Indeed, the position in health care ran contrary to Paul Oquist's influential thesis that the partial collapse of the Colombian state constituted the main explanatory cause of *la violencia*. Oquist's emphasis on the military, policing and judicial functions of the state overlooked vital questions of its presence and efficacy in areas of hygiene, primary education and public works.[164]

The international context was favourable too. The Second World War had aroused an urgent interest in subjects like traumatisms and aviation medicine, and had given an impetus to the modernisation of nursing education and practice. Western countries, alert both to their failures in social policy after the First World War and the emphasis laid upon social experiment by the Soviet Union, placed health care at the heart of welfare state experiments at home; and the foundation of the World Health Organisation and its proclamation of 'enjoyment of the highest standards of health' in 1948 placed health care more centrally on the international agenda than before. In his Fourth Point, President Harry Truman attributed poverty in South America to poor living conditions and an insufficient labour supply; and his government set the pattern of exporting missions to Colombia to advise on community health issues. Public health was establishing itself as a recognised specialism. In the late 1940s the first Colombians went abroad to study it, at for example the Escuela de Salubridad y Higiene in Mexico City;[165] and in the early 1950s the Rockefeller Foundation helped to fund a new National School of Public Health in Medellín. A trickle of postgraduates studying in Britain was influenced by the example of the National Health Service set up by the Labour administration of Clement Attlee. Social democratic arguments that government had an obligation to provide primary health care and to resolve such financial problems as the cost of expensive artificial limbs for the war-wounded had some purchase. Beveridgian, like Keynesian, ideas were, indeed, to have an enduring impact.[166]

New medical technology, especially penicillin, played a valuable role. Young doctors went out to the countryside to prove the positive qualities of penicillin, which they hoped would eradicate yaws among 1.5 million Colombians who inhabited the Pacific littoral from Ecuador to Panama. Diagnosis was simple, barely requiring medical competence; and once the first laboratory tests demonstrated the efficacy of the new drug, the campaign, conducted by sea and river in the absence of roads and railways, was, with Ecuadorian collaboration, underway. At the same time some aspects of the wartime experiences of the British and US armed forces had Colombian application: for example, in the treatment of hepatitis among patients sent to Bogotá from the oil-producing zone of Casabe, west of

Barrancabermeja.[167] The efficacy of public health policy was restricted by budgeting. Leprosy – not an epidemiologically significant disease – still represented in 1949 over one-quarter of the budget of the hygiene ministry. This was spent on a programme of leprosy control, especially three leprosaria where infected persons were segregated, and the care by the ministry of the children of leprous parents. Local surveys conducted in 1938 had indicated about 17,000 persons suffering from leprosy; and the director of the national leprosy programme believed that ten years or so later the number of leprous persons was increasing more slowly than the population as a whole. The World Bank mission argued that the assignment of so large a portion of the national health budget to one disease that constituted only a small fraction of the total burden of illness was unjustified.[168] Progressive legislation, influenced by unfavourable comparison with the quality of treatment at sanatoria in São Paulo and Argentina, was introduced in 1945 and 1947. This sought to break with traditions of concealing lepers and thus perpetuating leprosy and of giving the poor a treatment distinct from that of the prosperous, and won the praise of the World Health Organisation. But the new legislation was not acted upon, for lack of resources. Instead, an antileprosy campaign that was admitted officially to be anachronistic and inefficacious survived, venerated for its age and reliant on the generosity and disinterest of religious orders and state functionaries. The definitive abandonment of the idea of regional sanatoria coincided with the completion of a new building for the leper colony at Agua de Dios that was acquired by a private philanthropist and the Congregación de Sagrados Corazones. Thus, in the absence of genuine official initiative, philanthropic endeavour perpetuated anomalous treatment.[169] Public anxiety about leprosy was heightened by a mass flight of lepers to obtain improved rations, followed by protests by lepers against managerial changes. Unrest within the leper colonies, caused by inflated prices of essential goods, high levels of alcohol consumption, inadequate sanitation and infestation of their homes, had a resonance among adjacent populations. Proposals of the central government to open a new leper colony on the borders of Santander and Boyacá, the two departments of highest leprosy rates, had met with alarm in the mid-1940s.[170] Only in the early 1950s were traditions of total confinement relaxed, in line with better knowledge of the epidemiology of leprosy and the risks of contagion.[171]

The broader picture was, however, uneven. There were doubts about the impact of the PanAmerican Health Organisation, whose budget and influence upon policy-makers were growing rapidly. Performing the functions in Latin America and the Caribbean that the World Health Organisation undertook in Africa and Asia, the PAHO characteristically made a fragmented, primarily technical response to health problems. Using the language of public health programmes the PAHO selected a particular disease as a realistic target for eradication and concentrated its activities on narrowly conceived campaigns to achieve that goal, but failed to stress broader strategies to improve the

living and working material conditions of poor populations or to devote material and human resources to them.[172]

In Colombia a mosaic of modest welfare institutions and uncoordinated departmental initiatives which drew upon public funding was not effectively audited and brought about improvements that were not always sustained.[173] The effectiveness of the ministry of hygiene was vitiated by under-funding; by discontinuous financing as policy priorities shifted or recession precipitated retrenchment in social spending; and by a high turnover of personnel caused by factional conflict and poor remuneration. As in the 1930s private consultancy had the appeal to capable professionals of social prestige and better pay combined with a high measure of self-reliance and freedom from political interference. Thus the personnel position in health care caused misgivings. Since there was no register of health personnel, the 1951 census figures had to be used by the World Bank mission. These indicated 3,327 physicians (i.e. a physician-population ratio of 1: 3,310 in Colombia, compared to 1: 730 in the USA in 1949), 1,000 graduate dentists and 600 licensed dentists, 400 general nurses, 200 nurse-midwives and 200 health visitors. Public health services were weakened by personnel problems: the lack of public health specialists with a systematic and standardised training that included supervised field training, apprenticeships and residency that was formally planned and budgeted and used to positive effect to enhance the quality and number of personnel. There was an awareness of problems in general terms – the need for a pure water supply and milk pasteurisation, for example – but there were not the qualified personnel to attend to them.[174] Turnover of personnel thwarted effective public health administration. One city health officer stated that during one year the equivalent of two-thirds of the staff changed approximately every four months. It was claimed too that 50-55 per cent of the employees of the ministry of hygiene were replaced in 1948. The fear of arbitrary dismissal among qualified personnel meant that they opted for the private sector. The position in sanitary engineering was especially bad: frequent turnover of undereducated personnel obstructed the formation of an adequate professional staff. At the same time the profession of social worker existed only in embryo. The Currie Mission recommended a shift from an institutional to a fieldwork approach to social work and a programme of home-care and the mobilisation of community resources. Formal training and recruitment patterns and career structures were needed for social workers, along with systems of tenure and promotion on merit.[175]

Public health was the junior partner of private medicine. Daniel Pécaut has argued persuasively that continuity in the liberal development model in Colombia made for a high degree of autonomy of the producer associations as well as a profound disorganisation of the popular sectors.[176] The high level of autonomy enjoyed also by the liberal professions was evident in priorities regarding public health. The number of physicians who specialised in public health was small, and even recent graduates were discouraged

because salaries were low for public employees and prospects were poor. There were no clear career structures, poor conditions of recruitment and service, little executive authority and no security of tenure. Meanwhile, many physicians were untrained in the most serious problem of many locations, namely sanitation, and were concerned with clinical cases rather than prevention and immunisation. Every doctor needed some training in epidemiology, vital statistics, personal hygiene, industrial, educational and mental hygiene, sanitary engineering and the protection of mothers and infants.[177] But the Colombian medical profession, culturally bound by private practice, was, like the English medical profession a century before, ambivalent to public health, relegating it to a secondary priority and showing a general indifference to preventive, occupational and environmental medicine.[178] Furthermore, it is unclear how far new administrative structures and attitudes in public health acted in such a way as to ameliorate conditions for the poor and how far to reinforce middle-class fears of poverty and dirt and demands for patterns of residential segregation by social class as cities grew, thus isolating and perpetuating patterns of urban poverty.[179]

A shortage of public health personnel was compounded by a poor record in public health practice. Legislation in 1948 (Ley 49 de 1948) created a national emergency relief agency, and handed the responsibility for its administration to the Red Cross, but did not provide funds. Only minimum measures for food protection had been taken by the end of the 1940s. Success with milk pasteurisation measures was limited by equipment of obsolete design and in poor repair that was probably poorly operated. The water supply position was especially dismal. Contaminated water had been responsible for over 1,000 recorded cases of typhoid per annum in Medellín between 1943 and 1948, with a further 1,282 recorded in the first five months of 1949. Conditions in public markets were poor: food was not protected from insect and human contamination; and there was a high spoilage rate which had adverse consequences for peasant incomes. Refrigeration of meat was hardly known in the slaughter-houses.

The inefficacy of public health policy was exemplified by a failure to curb venereal diseases in spite of heavy publicity in the large cities since the 1920s. Many sufferers were identified as having the disease only when they entered public hospitals for treatment of other illnesses or when they received physical examinations to obtain work certificates. The anti-VD campaign had three main features: prophylactic posts, several of which had been unable to complete the treatment of patients in 1944-5 because they ran out of drugs; public campaigns which ran into difficulties because paper was scarce during the Second World War and propaganda films could not be obtained;[180] and the registration, licensing, examination and treatment of prostitutes, which did not function as intended. Of 9,703 'public women' examined in a sample study, 8,349 were found to have gonorrhoea, and many had multiple infections - combinations of gonorrhoea, syphilis, chancroid and tropical

bubo (or lymphogranuloma inguinale). Even in the one city where the registration programme was operating well, only 889 of the 1,703 registered prostitutes reported regularly to the control clinics. The failure of zones of tolerance and regulation of prostitution to contain the spread of venereal diseases provided a context for authoritarian measures against prostitutes in Bogotá as part of the right-wing offensive after the *bogotazo*. In 1951 the Academia Nacional de Medicina gave its formal support to attempts to suppress prostitution (outside Bogotá it was still tolerated) on medical, moral and religious grounds and in order to defend the women of the 'economically and educationally weak classes'.[181] One cause for optimism with regard to syphilis in the early 1950s lay in the application of penicillin. (Gonorrhoea, however, could develop strains resistant to penicillin.) In other respects, there was less cause for optimism as moral fervour blurred policy.

The national mortality picture was grim. A high proportion of deaths was attributable to causes that were amenable to known methods of control: malaria, intestinal infections (diarrhoea, enteritis, typhoid and paratyphoid fevers, dysentery) and acute infectious diseases (whooping cough, measles). Childbirth was especially hazardous, and infants were notoriously vulnerable to deaths from intestinal disorders. (Although tropical anaemia was often diagnosed, it was only a manifestation of heavy parasitic infestation.) Official statistics, reporting a high incidence of malaria, intestinal parasites, anaemic dysentery and diarrhoeal disorders were, the Currie Mission reported, confirmed by impressionistic field observations by physicians. Indeed, one obstacle to economic growth consisted of the high incidence of disease preventable by immunisation (smallpox, diphtheria, whooping cough). Additionally, growth was impeded by, and limited resources squandered upon, recurring conditions, especially yaws, pinta and typhus fever. Albert Berry and Miguel Urrutia indicate a pattern of increasingly unequal income distribution between about 1930 and the early 1950s, with rural labour and urban construction workers suffering a stagnant or deteriorating position while that of government employees and manufacturing workers improved. Furthermore, between 1945 and 1953 wages for white-collar workers in manufacturing rose at twice the rate of blue-collar workers. If, as this preliminary analysis suggests, the groups enjoying an improved income tended to have greater access to social policy provision and the groups suffering a stagnant or deteriorating income were excluded from official provision, then the overall gap in the quality of life between the included and the excluded was broadening significantly, and official health care was doing precious little to assist the groups in greatest need.[182]

The pattern of operation of public health was not uniform. In four departments – Boyacá, Nariño, Santander and Tolima – the ministry operated all public health services directly; formerly these, as in all other departments, were autonomous. The ministry allocated specific sums to particular areas, some distributed as grants, some under contracts, and others used to defray

in part the costs of services that the ministry provided in lieu of funds. Similar arrangements prevailed for special programmes organised by the ministry, for example, to control malaria, tuberculosis and venereal diseases, along with maternal and child health care. Whereas in the mid-1940s the SCISP provided external funds that were then matched by Colombian funds, by 1950 the responsibility for financial support and management was passed to the hygiene ministry and local institutions as the national economy grew. Rockefeller assistance had facilitated other work. Matching arrangements had financed yellow fever campaigns; the Carlos Finlay Institute in Bogotá and the Roberto Franco Institute in Villavicencio (where laboratory research was conducted in an environment close to the field), had been built largely with Rockefeller funds, but by 1950 were supported almost entirely by the ministry. And Rockefeller endeavour had shifted elsewhere; it had provided some aid to the National Nursing School, and was now supporting the National School of Public Health, a co-operative venture designed to rectify the acknowledged lacuna of training of both physicians specialising in public health and laboratory technicians.

Effective public health organisation was impaired by the absence of working arrangements between the national, departmental and municipal health authorities and also the *beneficencias*. What co-ordination existed occurred as a result of such devices as interlocking budgets, the sharing of personnel and premises, the cross-referral of clienteles and overlapping membership on directing boards and advisory councils. *Beneficencia de caridad* arrangements were the products of elaborate legal compromises reached after conflicts between the secular authorities and the religious orders over the ownership of hospitals and the control of their incomes and endowments. The scope for conflict was considerable. In the 1930s and 1940s it was increasingly clear that notions of charity underpinning the concept of *beneficencia* were at odds with concepts of social welfare that included a right to medical aid which the state provides through tax collection. Public lotteries, supplemented by earmarked taxes usually on *beneficencia* income, were the main source of income. While the government set the general pattern of regulation, administrative authority was vested in a committee representing the ministry, department, civil and professional interests, and usually the diocese. In Cundinamarca *beneficencia* spending was allocated to institutions – hospitals and custodial institutions – and also as direct relief for children supported in orphanages, most of whom received primary schooling and vocational training and some of whom received scholarships to attend secondary schools. The deficiencies of *beneficencia* institutions were numerous: the age and size of buildings; overcrowding, especially in mental hospitals and orphanages; and ill-trained staff barely capable of providing active therapy in mental hospitals. A system of financing whose yield was unpredictable exacerbated difficulties, making in particular for frequent delays in the completion of hospitals and other buildings and in equipping

them.[183] Charity boards were reluctant to change established practices and hesitant to devolve to the state a range of benefactions for the poor, partly from an instinctive resistance to change arising from a reluctance to lose opportunities for displays of disinterested benevolence which won social esteem,[184] and also from scepticism about state competence that would have been more justified if their own competence had not been sorely in doubt.

The hygiene centre movement in the cities had acquired some momentum since the mid-1930s. But owing to weak municipal administration and poor staffing and premises, many hygiene centres were closed by the mid-1940s, with the itinerant departmental health service as the only substitute in small municipalities. Some attempts at reviving the centres under municipal or joint municipal-*beneficencia* management were commencing after the Second World War. But there was no uniformity: some centres were multi-purpose, others had a single aim, like child health. In 1949 legislation to reinvigorate the system of hygiene centres laid down that in towns of under 20,000 inhabitants the minimum service should consist of a health post, manned by a physician, an auxiliary nurse, a public hygiene visitor and a hygiene inspector. In towns where a hospital existed a health centre had the functions of co-ordinating health posts with hospitals and with specialist hygiene services. The centres were to be manned by two doctors, one dentist, two public hygiene visitors, one laboratory assistant and one inspector of hygiene.[185] The fragility of the system of hygiene centres meant a continuing heavy reliance on hospitals even for minor ailments.

The hospital system was haphazard and fragmented. A survey by the ICSS in 1947 found that of 253 hospitals, 125 were equipped for surgery, 153 contained maternity wards, 63 had a laboratory and 22 had X-ray facilities. Of 20,200 beds recorded, no more than 10,000 at an optimistic estimate met reasonable standards for active hospital care. While high-income groups used 26 private hospitals and twelve enterprises ran hospitals for the use of their own employees, the remainder of the population depended on public and charity hospitals (the charity hospitals, despite their name, being supported in part by fees paid by or on behalf of patients). The gravity of administrative problems was exemplified by the 1,500-bed departmental hospital in Cali which once complete remained idle for over two years for lack of furnishings and equipment. In 1950 an ambitious hospital programme was proposed by which seven hospital service areas would be established and the quality of care raised incrementally in seven major urban centres. This scheme met with considerable scepticism, given the profound difficulties in maintaining existing facilities and incomplete data upon them. Twenty-four hospitals had no medical attention in the early 1950s; the fatalistic assumption of the hospital as an *antesala de muerte* was slow to die; and some hospital boards resisted the opening of radiology services and pathology laboratories on the grounds that they were 'hijos innecesarios en hospitales pobres'. Furthermore, rising costs of imported hospital equipment and

pharmaceuticals distorted budgets. The scene was set for an unresolved debate over the relative merits of financing hospitals and health posts. The managers of many hospitals argued a prior claim on funding to assist people of scarce resources who needed a therapy or diet that the home could not provide. The advocates of primary health posts stressed their cost-effectiveness, their potential for outreach to the community and their superior effectiveness in preventive health measures. Medicine was progressing in Colombia, but the status of the nation's health was more uncertain.

Perspectives

As Colombia entered the second half of the twentieth century, ministers and senior officials were confident that Colombian health conditions could improve incrementally in line with rising incomes and food consumption, increased spending on health care, sanitation and housing, and evidence that grassroots action to counter killer diseases had some enduring impact. The Gómez administration did not differ from its Liberal predecessors in backing a pragmatic blend of private and public initiative in health care. And, following the trend set in developed countries and by the international agencies, official documents from the hygiene ministry spoke of equity as an objective, a concept ruled out of discussion in areas of vital interest to the ruling elite, like agriculture, where discussion of equity was seen as subversive. The 1950s were to witness the importation and implantation of the Flexnerian model in medical education, some significant modernisation and expansion of hospital provision and the consolidation of the presence of the modern pharmaceutical industry. Some improvements in patient care followed the establishment of the first group surgeries in Bogotá and the application of lessons gained from the experience of treating the casualties of *la violencia*. Each of these changes raised new problems that were to erupt in the 1960s and 1970s.

Yet at times the proponents of gradualism encountered entrenched interests and attitudes that obstructed all change. Dr Juvenal Urbino, one of the leading figures in Gabriel García Márquez's *Love in the Time of Cholera* (*El amor en los tiempos del cólera*), could, indeed, have been present in a provincial city of the 1950s. Accused of an 'illusory passion' for public hygiene and a 'maniacal sense of civic duty', Dr Urbino campaigned for aqueduct construction and water purification, strenuous disinfection of homes and cleanliness in the market-place. He confronted the inertia of city fathers, who proclaimed their proud social origins, 'the historic merits of the city, the value of its relics, its heroism, its beauty, but...were blind to the decay of the years' – attitudes hardly conducive to careful diagnosis and appropriate prescription as the demographic crisis of the 1960s loomed.

Notes

1. For a valuable recent monograph, see Suzanne Austin Alchon, *Native Society and Disease in Colonial Ecuador* (Cambridge, 1991).

2. See especially, Virginia Gutiérrez de Pineda, *Medicina Tradicional de Colombia* (2 vols., Bogotá, 1985).

3. See, for example, Jorge Vivas Reyna, *Recesión, ajuste económico y política de salud* (Bogotá, 1986); Jorge Vivas Reyna, Eugenio Tarazona Betancourt, Carlos Caballero Argáez and Nancy Marrero, *El Sistema Nacional de Salud: Administración, presupuestación, gasto y financiamiento* (Bogotá, 1988); and José Fernando Pineda, *El Financimiento del Sector Salud en Bogotá 1961-1981* (Bogotá, 1984).

4. See especially P. E. M. Engelkes, *Health for All? Evolution and Monitoring in a Comprehensive Primary Health Care Project in Colombia* (Amsterdam, 1989); David Bersh, *Estudios de Diarrea en el Quindío, Aspectos epidemiológicos y de comportamiento* (Bogotá, n. d., probably 1983); Antonio Ordóñez Plaja, Gloria Elena Ochoa González and Helena Páez de Tavera, *Situación de la Vejez en Colombia* (2nd edn., Cali, 1990). For a general view of the late 1980s, see Christopher Abel, 'Salud, sociedad y política en la Colombia actual: una perspectiva general', *Revista médica*, Bogotá, vol. 19, no. 4 (1988), pp. 168-72.

5. See also Emilio Quevedo V., *Historia Social de la Ciencia en Colombia,* Tomo VII *Medicina (1) Institucionalización de la Medicina en Colombia 1492-1860: Antecedentes de un proceso* (Bogotá, 1993) and Néstor Miranda Canal, Emilio Quevedo Vélez and Mario Hernández Alvarez, *Historia Social de la Ciencia en Colombia*, Tomo VIII *Medicina (2) La Institucionalización en Colombia* (Bogotá, 1993).

6. For general context, see David Bushnell, *The Making of Modern Colombia: A Nation in spite of Itself* (Berkeley, Ca., 1993); Malcolm Deas, 'Colombia, Ecuador and Venezuela, c. 1880-1930', in Leslie Bethell (ed.), *Cambridge History of Latin America*, vol. V, *c. 1870 to 1930* (Cambridge, 1986), pp. 641-84; Christopher Abel and Marco Palacios, 'Colombia, 1930-58', in Leslie Bethell (ed.), *Cambridge History of Latin America*, vol. VIII, *Latin America since 1930: Spanish South America* (Cambridge, 1991), pp. 587-628.

7. See, in particular, Frank Safford, *The Ideal of the Practical: Colombia's Struggle to Form a Technical Elite* (Austin, 1976); Aline Helg, *Civiliser le peuple et former les élites: L'education en Colombie, 1918-1957* (Paris, 1984) and Aline Helg, 'Education and Training in Colombia, 1940s to 1960s', in Christopher Abel and Colin M. Lewis (eds.), *Welfare, Poverty and*

Development in Latin America (London, 1993), pp. 239-56.

8. These themes are explored in comparative perspective in Abel and Lewis (eds.) *Welfare, Poverty and Development in Latin America.*

9. Philip D. Curtin, *Death by Migration: Europe's Encounter with the Tropical World in the Nineteenth Century* (Cambridge, 1989), p. 44.

10. Curtin, *Death by Migration*, p. 69.

11. Jorge Díaz Briquets, *The Health Revolution in Cuba* (Austin, Tx, 1983), chapter one.

12. Fernando Serpa Flórez, 'Historia de una enfermedad: la fiebre amarilla', *Tribuna médica*, separata de octubre (1) (1984), pp. 25-8.

13. Alfredo Naranjo Villegas, 'La expedición de la vacuna (O Expedición de Balmis)', Lectura en la Academia de Medicina de Medellín, unpub. MS., 30 October 1985.

14. James J. Parsons, *Antioqueño Colonization in Western Colombia* (revised edn., Berkeley, Ca., 1968), *passim.*

15. Fernando Serpa Flórez, 'Apuntes para la historia de la lepra en Colombia', *Consulta* (Abril 1984), pp. 14-18; Serpa, 'Estado actual de la lepra en Colombia', *Tribuna médica*, tomo LX, no. 4 (August 1979), pp. 21-6.

16. Alfred W. Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492* (Westport, Conn., 1972), esp. p. 209; Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900-1900* (Cambridge, 1986), esp. p. 215.

17. For general context, see Bushnell, *The Making of Modern Colombia*, pp. 81-2. See especially, José Celestino Mutis, *Viaje a Santa Fé* (Madrid, 1991) and the translation by Ernesto Guhl of Alexander Von Humboldt and A. Bonpland, *Ideas para una geografía de las plantas más un cuadro de la naturaleza de los países trópicos* (Bogotá, 1985), published by the Jardín Botánico de Bogotá 'José Celestino Mutis', from the German *Ideen zu einer geografie der pflanzen nebst einem naturgemalde der tropenlander* (Tubingen, 1807).

18. John Leddy Phelan, *The People and the King: The Comunero Revolution in Colombia, 1781* (Madison, Wis., 1978), pp. 232-5.

19. Emilio Quevedo, 'José Celestino Mutis y la educación médica en el Nuevo Reino de Granada', *Ciencia, Tecnología y Desarrollo*, Bogotá, vol. 8, nos. 1-4 (January-February 1984), pp. 69-115.

20. Thomas F. Glick, 'Science and Independence in Latin America (with Special Reference to New Granada)', *Hispanic American Historical Review*, vol. 71, no. 2 (May 1991), pp. 307-34.

21. Works of hagiography continue to be published. For an example of such a study of Humboldt, see William F. Stearn (ed.), *Humboldt, Bonpland, Kunth and Tropical American Botany: A Miscellany on the 'Nova Genera et Species Plantarum'* (Stuttgart, 1968).

22. Emilio Quevedo and Amaryllis Zaldúa, 'Antecedentes de las Reformas Médicas del Siglo XVIII en el Nuevo Reino de Granada: una polémica entre médicos y cirujanos', in Colciencias, Sociedad colombiana de epidemiología, 45 Congreso de Americanistas, *Historia social de las ciencias en Colombia. Sabios, médicos y boticarios* (Bogotá, 1986), pp. 61-94. For peninsular comparisons, Antonio Lafuente and Javier Puerto Sarmiento, 'Las profesiones sanitarias tras su identidad en la Ilustración Española', *Ibid.*, pp. 41-59.

23. Alfredo Naranjo Villegas, 'Algunos hechos y figuras de la medicina en Antioquia', *Antioquia médica*, vol. 21, no. 7 (1971), pp. 483-96.

24. Guillermo Hernández de Alba, 'Five Outstanding Medical Personalities' (pamph., Laboratorios Undra S.S., n.d.), p. 3.

25. Jaime González, 'Medical Plants in Colombia', *Journal of Ethnopharmacology*, vol. 2 (1980), pp. 43-7.

26. Alfonso Vargas Rubiano, 'La enseñanza de la pediatría en la UN', *Pediatría. Revista de la Sociedad Colombiana de Pediatría*, vol. 22, no. 3 (Bogotá, May 1987), pp. 8-25.

27. Cf. Matthew Ramsey, *Professional and Popular Medicine in France, 1770-1830: The Social Worlds of Medical Practice* (Cambridge, 1988), esp. pp. 74-5.

28. Tiberio Alvárez, 'La anatomía en Medellín', *Antioquia médica*, vol. 33, no. 1 (1976), pp. 41-6.

29. Vargas Rubiano, 'La enseñanza de la pediatría en la UN'.

30. Emilio Robledo, *Aproximaciones sobre la medicina en Colombia* (Bogotá, 1959), p. 105; Manuel Angel Robledo, *La medicina en Antioquia* (Bogotá, 1936).

31. Jaime J. Gómez, 'Doctor Ninian Richard Cheyne: Profesor Escocés de la Cirugía en Colombia, Trabajo presentado en la Academia Nacional de medicina...26 de marzo de 1982'.

32. Cf. Olive Checkland, *Philanthropy in Victorian Scotland: Social Welfare and the Voluntary Principle* (Edinburgh, 1980), esp. p. 157.

33. Cf. William Cohen, 'Malaria and French Imperialism', *Journal of African History*, vol. 24 (1981), pp. 23-36; Anne Markovich, 'French colonial medicine and colonial rule: Algeria and Indochina', in Roy MacLeod and Milton Lewis (eds.), *Disease, Medicine and Empire: Perspectives on Western Medicine and the Experience of European Expansion* (London, 1988), pp. 103-18.

34. From its inception the London School of Hygiene and Tropical Medicine was concerned with the better training of colonial medical officers and the development of specialisms like protozoology and helminthology connected to biology, while the Liverpool School of Tropical Medicine started as an investment in the expansion of colonial trade, aiming to export the progressive public health philosophy of the city of Liverpool, and developed its own epidemiology, programme of expeditions and practical health measures for application by imperial administrators. Michael Warboys, 'Manson, Ross and colonial medical policy: tropical medicine in London and Liverpool, 1899-1914', in MacLeod and Lewis (eds.), *Disease, Medicine and Empire*, pp. 21-37.

35. Humberto Rosselli, *Historia de la Psiquiatría en Colombia*, tomo I (Bogotá, 1968), pp. 32, 60, 113.

36. Theodore Zeldin, *France, 1848-1945.* Volume One, *Ambition, Love and Politics* (Oxford, 1973), p. 28.

37. When put into general international use, the adoption of quinine in Antioquia was limited to the most unhealthy patients because its price rose. Alvaro Cardona, *Problemática médica Antioqueña y su marco sociopolítico en la primera mitad del Siglo XX* (Medellín, 1984), pp. 94-5.

38. 'La historia de la medicina en sus textos. Primera operación cardiaca por el Profesor Pompilio Martínez. Sutura del corazón', *Boletín de la Sociedad Colombiana de Historia de Medicina*, vol. 5, no. 2 (Julio 1986), n. p.

39. Jaime Restrepo Cuartas, *Ensayo sobre la historia de la medicina en Antioquia* (Medellín, 1984); Carlos Eduardo Jaramillo, *Higiene y asistencia públicas* (Manizales, 1929).

40. Luis María Rivas, cited by Laurentino Muñoz, *Historia del Hospital San José 1902-1956* (Bogotá, 1958).

41. Emilio Robledo, *Aproximaciones sobre la medicina en Colombia*, p. 107.

42. The impact of the Rockefeller missions will be the subject of a future publication of the author. For an invaluable guide see Marcos Cueto, 'El Rockefeller Archive Center y la medicina, la ciencia y la agricultura latinoamericanas del siglo veinte: una revisión de fondos documentales', *Quipu*, Lima, vol. 8 (January-April 1991), pp. 35-50.

43. This topic, especially with regard to linguistics, is explored by Malcolm Deas, *Gramática y Poder y otros ensayos* (Bogotá, 1993).

44. Cf. Anthony S. Wohl, *Endangered Lives: Public Health in Victorian England* (London, 1983), pp. 334-5.

45. Jorge Bejarano, *La delincuencia infantil en Colombia y la profilaxis del crimen.... Conferencia* (Bogotá, 1929). A shift towards specialist judges trying minors and towards legislation to rehabilitate minors was general in the continent between 1914 and 1930. Carlos de Avenaza, 'La delincuencia infantil: su legislación en América', *Serie salubridad pública y previsión social*, no. 62 (PanAmerican Union, May 1931).

46. Bejarano, *La madre y el primer bebé* (Bogotá, 1919), esp. pp. 23, 40, 55.

47. Interview, retired health official, Bogotá, 3 December 1987.

48. Especially, Muñoz, *op.cit.*, *passim.*

49. As Safford has stressed, traditions of philanthropy were ambiguous. In the mid-nineteenth century philanthropy was undertaken both from a sense of social obligation and for honorific reasons; the depth of elite commitment to philanthropy was open to question. Frank Safford, *The Ideal of the Practical. Colombia's Struggle to Form a Technical Elite* (Austin, Tx, 1976), esp. p. 53.

50. República de Colombia, Ministerio de Salud, Instituto Nacional de Salud, *Reseña Histórica del Laboratorio Nacional de Salud 'Samper-Martínez' 1917-1982* (Bogotá, 1982), pp. 2-4.

51. Myriam Jimeno S., 'Medicina Institucional y Saber Indígena, Conclusiones de los Talleres de Salud', in Fundación Comunidades Colombianas, *Medicina, Shamanismo y Botánica* (Bogotá, 1983), pp. 11-19.

52. Rosselli, *Historia de la psiquiatría en Colombia*, tomo I, p. 28.

53. Virginia Gutiérrez de Pineda, *Medicina tradicional en Colombia*, vol. 1: *El Triple Legado* (Bogotá, 1985), esp. pp. 226-7.

54. *Ibid.*, vol. 2: *Magia, Religión y Curanderismo*, p. 18.

55. *Ibid.*, vol. 1, esp. pp. 79-83.

56. Gerardo and Alicia Reichel-Dolmatoff, *The People of Aritama* (London, 1961), p. 310.

57. Cf. Gwyn Prins, 'But what was the disease? The present state of health and healing in African Studies', *Past and Present*, no. 125 (November 1989), pp. 159-79.

58. Libbet Crandon-Malamud, *From the Fat of Our Souls: Social Change, Political Process and Medical Pluralism in Bolivia* (Berkeley, Cal., 1991). There was published in Bogotá in 1858 a work *El médico en Casa o la Medicina sin Médico* with the subtitle *Recetas experimentadas para toda clase de enfermedades, sin necesidad de drogas de Bótica*. It was later reprinted in Honda.

59. Gonzalo Sánchez, 'The Criminalization of Popular Protest in Colombia', unpub. paper given at ILAS workshop, London, on History of Colombia, 30 May 1990.

60. Frank Safford, 'Race, Integration and Progress: Elite Attitudes and the Indian in Colombia', *Hispanic American Historical Review*, vol. 71, no. 1 (1991), pp. 1-33.

61. In Britain during the industrial revolution accelerating migration had signified an erratic and patchy spread of diseases. Cf. Roy Porter and Dorothy Porter, *In Sickness and in Health. The British Experience 1650-1850* (London, 1985), *passim*.

62. Malcolm Deas, 'A Colombian Coffee Estate: Santa Bárbara, Cundinamarca, 1870-1912', in Kenneth Duncan and Ian Rutledge (eds.), *Land and Labour in Latin America: Essays on the Development of Agrarian Capitalism in the Nineteenth and Twentieth Centuries* (Cambridge, 1979), p. 277; Marco Palacios, *Coffee in Colombia 1850-1970 - An economic, social and political history* (Cambridge, 1980), pp. 73-4.

63. For comparative material, especially on Uruguay and Mexico, see the essays contained in Christopher Abel and Colin M. Lewis (eds.), *Latin America, Economic Imperialism and the State. The Political Economy of the External Connection from Independence to the Present* (reprint, London, 1991).

64. Carlos Andrés Escudé, 'Health in Buenos Aires in the second half of the nineteenth century', in D. C. M. Platt (ed.), *Social Welfare 1850-1950: Australia, Argentina and Canada Compared* (London, 1989), pp. 60-70.

65. I owe this observation to Marco Palacios, 'On co-authoring a textbook on the history of Colombia', unpub. paper, ILAS London workshop on the history of Colombia, 30 May 1990.

66. Rahnarayan Chandavarkar, 'Plague panic and epidemic politics in India, 1896-1914', in Terence Ranger and Paul Slack (eds.), *Epidemics and Ideas: Essays on the historical perception of pestilence* (Cambridge, 1992), pp. 203-40.

67. Restrepo Cuartas, *Ensayo sobre la historia de la medicina en Antioquia.*

68. P. L. Bell, *Colombia - A Commercial and Industrial Handbook* (Washington, DC, 1921), p. 47.

69. Jorge Díaz Briquets, *The Health Revolution in Cuba* (Austin, Tx, 1983).

70. Ronn F. Pineo, 'Misery and Death in the Pearl of the Pacific: Health Care in Guayaquil, Ecuador, 1870-1925', *Hispanic American Historical Review*, vol. 70, no. 4 (November 1990), pp. 609-37; Robert H. Jackson, 'The Treatment or Mistreatment of Disease? Comments on Ronn F. Pineo's "Misery and Death...."', *Hispanic American Historical Review*, vol. 71, no. 2 (May 1991), pp. 769-74.

71. Carlos Arturo Jaramillo, *Higiene y asistencia pública* (Manizales, 1929), pp. 1-67.

72. Jaramillo, *op. cit.*, pp. 68, 175-8; Decreto Ley 46 de 1918 (19 November), cited in Eduardo Villegas (comp.), *Disposiciones generales sobre higiene y sanidad* (Medellín, 1946), pp. 18-9.

73. Resolución No. 57 de 1920.

74. Francisco José Yepes (director) and Emilio Quevedo V. (co-ordinator), *La Salud en Colombia: Análisis sociohistórico*, Estudio sectorial de Salud (Depto Nacional de Planeación, Bogotá, 1990), pp. 24-31.

75. On comparative themes, Barbara Weinstein, 'The Industrialists, the State and the Issues of Worker Training and Social Services in Brazil, 1930-1950', *Hispanic American Historical Review*, vol. 70, no. 3 (August 1990), pp. 379-404.

76. I am indebted to Catherine Le Grand for this observation. History of modern Colombia session, AHA meeting, New York, 30 December 1990.

77. The problem of disease during the civil wars was a recurring problem. The hazards of disease for upland troops in the lowlands were acknowledged in the wars of independence. David Bushnell, *The Santander Regime in Gran Colombia* (Newark, Del., 1954), pp. 252-3. In 1901 many government troops in La Mesa, Cundinamarca, were sick, or recovering from yellow fever, dysentery or smallpox – a major factor that lowered discipline and morale. Charles W. Bergquist, *Coffee and Conflict in Colombia, 1886-1910* (Durham, NC, 1978) p. 164.

78. Stuart D. Brandes, *American Welfare Capitalism 1880-1940* (2nd edn., Chicago, 1976). For Peruvian comparisons, see Christopher D. Scott, 'Bonos, Beneficios y Bienestar: A Study of Wages, Work and Welfare on Peruvian Sugar Plantations', in Abel and Lewis (eds.), *Welfare, Poverty and Development in Latin America*, pp. 149-74.

79. Bell, *Colombia*, p. 137.

80. *Ibid*, esp. pp. 42-7.

81. Roso Alfredo Cala Hederich, *Médicos Ilustres de Santander: Martín Carvajal Bautista* (MS, Bucaramanga, 1980).

82. David Sowell, 'The Early Latin American Labor Movement. Artisans and Politics in Bogotá, Colombia, 1832-1919', unpub. PhD thesis, University of Florida, 1986, esp. p. 311.

83. Ley 99 de 1922 (7 December).

84. Resolución No. 214 de 1939, Min. de trabajo, higiene y previsión social. This contrasted with arguments powerfully presented in the early 1890s that state-supported, low-cost housing in Bogotá would serve only to attract migrants from the countryside, thus aggravating the problems of overcrowding and poor sanitation. David Sowell, *The Early Colombian Labor Movement: Artisans and Politics in Bogotá, 1832-1919* (Philadelphia, 1992), p. 124.

85. Jeffrey D. Needell, 'The "Revolta contra vacina" of 1904: the Revolt against "Modernization" in *Belle-Epoque* Rio de Janeiro', *Hispanic American Historical Review*, vol. 67, no. 2 (May 1987), pp. 233-74; Teresa Meade, 'Living Worse and Costing More: Resistance and Riot in Rio de Janeiro, 1890-1917', *Journal of Latin American Studies*, vol. 21 (May 1989), pp. 241-66.

86. Marcos Cueto, 'Sanitation from Above: Yellow Fever and Foreign Intervention in Peru, 1919-1922', *Hispanic American Historical Review*, vol. 72, no. 1 (1992), pp. 1-22.

87. Thomas L. Karnes, *Tropical Enterprise: Standard Fruit and Steamship Company in Latin America* (Baton Rouge, La., 1978), p. 74. There were recent memories of the disruption of trade in the US South by fifteen-day fumigation periods for ships, and of rotten bananas being thrown in the River Mississippi. The last appearance of yellow fever in the USA (1905), when 452 deaths were recorded in New Orleans alone, played a part in the decision to found a school of tropical diseases at Tulane University to which a parasitology unit was added in the 1920s. Karnes, *Tropical Enterprise*, esp. pp. 8-9, 26-7, 172.

88. Bell, *Colombia*, p. 46.

89. Paul W. Drake, *The Money Doctor in the Andes: The Kemmerer Missions, 1923-1933* (London, 1989).

90. Yepes and Quevedo, *La salud en Colombia*, pp. 24-31.

91. Cala Hederich, *Médicos Ilustres de Santander*, p. 30.

92. Cf. Colin Jones, *The Charitable Imperative. Hospitals and Nursing in Ancien Regime and Revolutionary France* (London, 1987), *passim*.

93. Hospital San Juan de Dios, *Programa de Investigación Toxicológica* (Bogotá, 1987), n.p.

94. Guillermo Lozano Bautista, *Beneficencia y medicina en El Hospital San Juan de Dios y la Universidad Nacional de Colombia* (Bogotá, 1983), *passim*.

95. Compare the Scottish experience, Olive Checkland, 'Maternal and Child Welfare', in Olive Checkland and Margaret Lamb, *Health Care and Social History - the Glasgow Case* (Aberdeen, 1982), pp. 117-22.

96. Interview, Red Cross manager, Bogotá, 5 November 1987.

97. Aline Helg, *Civiliser le peuple et former les élites*, esp. pp. 44, 55-6, 66-7, 71, 95, 103-4.

98. Tiberio Alvárez E., 'Diario de la medicina, Medellín, 1-2-3 de octubre de 1987' (MS, 1987), n. p.

99. Roger Brew, *El desarrollo económico de Antioquia desde la independencia hasta 1920* (Bogotá, 1977), p. 349.

100. Alfredo Naranjo Villegas, 'Uribe Angel y la medicina en Antioquia', MS, n. d.

101. Restrepo Cuartas, *Ensayo sobre la historia de la medicina en Antioquia, passim.*

102. Brew, *El desarrollo económico de Antioquia*, esp. pp. 72-7; Catherine Le Grand, 'Agrarian Antecedents of the Violence', in Charles Bergquist et al., (eds.), *Violence in Colombia: the Contemporary Crisis in Historical Perspective* (Wilmington, Del., 1992), pp. 31-50.

103. Alfredo Naranjo Villegas, 'Algunos hechos y figuras de la medicina antioqueña', *Antioquia médica*, vol. 21, no. 7 (1971), pp. 483-96; Naranjo, 'Uribe Angel y la Medicina en Antioquia', unpub. MS, n.d.

104. Cf. David Roberts, *Victorian Origins of the Welfare State* (Hamden, Conn., 1960), esp. p. 86.

105. *Anexos a La Memoria del Ministro de Trabajo, Higiene y Previsión Social 1944-1945* (Bogotá, 1945), p. 37.

106. Interview, academician, Bogotá, 16 December 1987; Rosselli, *op. cit.*, vol. I, pp. 333-4.

107. Departamento Nacional de Higiene, *Unidades sanitarias y comisiones rurales* (Bogotá, 1936).

108. Eduardo Villegas R. (comp.), *Disposiciones generales sobre higiene y sanidad* (Medellín, 1945).

109. Resolución No. 84 de 1934 (28 May), No. 52 de 1935 (12 March).

110. Cf. A. S. Wohl, *Endangered Lives: Public Health in Victorian Britain* (London, 1983).

111. Interview, retired health official, Bogotá, 18 November 1987.

112. Interview, retired health official, Bogotá, 17 November 1987.

113. *Ibid.*

114. Interview, nurse, Bogotá, 16 December 1987.

115. Interview, health administrator, Bogotá, 22 December 1987.

116. Herbert Braun, *The Assassination of Gaitán: Public Life and Urban Violence in Colombia* (Madison, Wis., 1983), pp. 169-71.

117. On broader issues of US policy, see David Bushnell, *Eduardo Santos and the Good Neighbor, 1938-42* (Gainesville, Fla., 1967).

118. Norman Howard-Jones, 'The PanAmerican Health Organization: Origins and Evolution' (pamph., WHO, Geneva, 1981); Miguel E. Bustamante, *The PanAmerican Sanitary Bureau. Half a Century of Health Activities 1902-1954* (Washington DC, 1953).

119. *Memoria...Salud Pública 1952*, esp. pp. 182-5.

120. *Memoria....Higiene I 1947, passim.*

121. Interview, cardiologist, Medellín, 2 March 1988.

122. Interview, importer of medical equipment, Medellín, 4 March 1988.

123. Interview, medicine professor, 20 November 1987.

124. República de Colombia, *Informe de la misión francesa contratada por el gobierno nacional sobre la Organización de la Facultad de Medicina de Bogotá* (Bogotá, 1931).

125. Interviews, medicine professors, Bogotá, 6 November 1987, 4 December 1987. One Antioqueño professor, a dermatologist and clinician, used specialist works from Argentina as reference works but not as texts for students.

126. Based in *Quién es quién en Venezuela, Panamá, Ecuador, Colombia* (Bogotá, 1952).

127. Interview, academician, Bogotá, 10 December 1987.

128. Interview, medicine professor, Bogotá, 9 February 1988. Movement in the opposite direction was barely important, owing to the absence of a tradition of European immigration to republican Colombia. One significant exception was a surgery professor from Barcelona and Madrid, a Spanish Republican refugee and member of Acción Catalana Republicana, who came to Bogotá and became a professor at the Universidad Nacional.

129. These included the Mayo Clinic (Rochester, Minnesota) to study gastroenterology and the surgery of digestive illnesses; the Bellevue Hospital (New York) and the Neurological Hospital (New York) for neurosurgery; Harvard School of Medicine for ophthamology; Johns Hopkins University for

gynaecology; the Institute of Pathology, Western Reserve University (Cleveland), Cornell University and the Rockefeller Institute in New York to study pathological anatomy and yellow fever; public hygiene, laboratory work and tuberculosis at Johns Hopkins, Los Angeles, Chicago and Temple School of Medicine (Philadelphia); ophthamology at the Manhattan Eye, Ear and Throat Hospital (New York) and Temple University (Philadelphia); public health at both Yale and Johns Hopkins; gastroenterology at New York Polyclinic Hospital and Duke University School of Medicine; tropical medicine and general surgery at Tulane University; endocrinology at Johns Hopkins and Columbia Universities; and aviation medicine at the School of Randolph Field, Texas. Other students went to Columbia University, the Polyclinic Hospital of New York, Boston City Hospital and Harvard Medical School.

130. Interview, microbiologist (son of pathologist), Medellín, 21 February 1988; interview, former dean of medical school, Medellín, 23 February 1988.

131. Interview, paediatrician, Medellín, 4 March 1988.

132. Interview, son of specialist in tuberculosis and pulmonary diseases, Medellín, 24 February 1988.

133. Interview, medicine professor, Bogotá, 4 December 1987.

134. Interview, retired professor (Universidad Javeriana), Bogotá, 3 February 1988.

135. Interview, former dean, UPB medical school, Medellín, 5 March 1988.

136. Interviews, pharmacy professors, Bogotá, 30 November 1987, 9 December 1987.

137. One widow from the closed elite society of Cartagena travelled alone in 1906 to study nursing and obstetrics in France and returned to become the midwife of the upper class.

138. In the early 1940s women students could choose between studying for nursing or for social work, and most rejected the latter. For an institutional celebration of nursing education developments that understates the role of Colombians, see AID, *Historical Survey. United States Technical Assistance to Nursing*. Part III, *Latin America 1942-1966*, pp. 1-64. On US nursing, see Susan H. Reverby, *Ordered to Care: The Dilemma of American Nursing, 1856-1945* (Cambridge, 1987).

139. *Anexos a la Memoria del Ministro de Trabajo, Higiene y Previsión Social 1944-1945*, pp. 196-200.

140. Interview, retired nurse, Bogotá, 12 January 1988. Cf. Shula Marks, 'Paradoxes of Apartheid in Nursing in South Africa', unpub. paper, Institute of Commonwealth Studies, London, 7 March 1991.

141. Interview, social anthropologist, Bogotá, 2 December 1987.

142. Interview, nurse (Universidad Javeriana graduate), Bogotá, 16 December 1987.

143. Interview, nursing leader (member of religious order), Medellín, 26 February 1988.

144. Interview, nurse, Bogotá, 16 December 1987.

145. Interview with two nurses, one trained in lay, other in ecclesiastical environment, Bogotá, 16 December 1987.

146. Interview, nurse (previously with ICSS), Bogotá, 16 December 1987.

147. Interview, nursing leader, Bogotá, 30 November 1987.

148. Some new appointments were made at national level. Doctors were needed by the National Police, the Contraloría General de la República; and the ministry of mails and telegraphs employed a head of the medical services. The army required *médicos de sanidad*; and the cavalry and each barracks – La Pedrera near Bogotá, Pereira, Neiva – had a doctor on the payroll, and the Escuela Superior de Guerra, a medical officer. A doctor was appointed to accompany commissions delineating frontiers with Brazil and Panama and to the corrective institutions for young offenders in Buga; appointments were made to a national sanitary commission in 1930 in the River Magdalena and its tributaries; a head of sanitation and hygiene was appointed to the maritime terminal at Barranquilla; and a hygienist expert was attached to the Comisión de Cultura Aldeana in the mid-1930s. Other career initiatives were opened by decisions to conduct campaigns against targeted diseases. The establishment of the ICSS brought the appointment of medical advisers in Antioquia in 1950.

Initiatives were sectoral too. The expansion of aviation brought a need for a medical expertise at the military airbases of Cali and Villavicencio and the civil airline Avianca in the 1940s; and the air cable from Gamarra to Ocaña employed a doctor too. The railways appointed doctors: the Ferrocarriles de Medellín had a hospital chief; Ferrocarriles Nacionales a surgeon. Breweries required a medical practitioner on the staff, even at Cervecerías Bavaria in Pamplona. Empresa Minerva de Zancudo, the newspaper *El Tiempo*, United Dredging Co. in Cali and Cemento Diamante all complied with national legislation and projected themselves as modern enterprises by appointing a doctor. The soft drinks factory of Boyacá and the textiles factory at Samacá

hired a surgeon. In road construction a *médico-jefe* was appointed by the Carreteras Nacionales in Valledupar. Oil companies – Gulf Oil, Shell, Socony Vacuum Oil Co – all employed doctors. Sandos Engineers Corporation, the firm which built the Bogotá aqueduct in the mid-1930s, hired a medical practitioner. The Rubber Development Corporation employed a doctor in Meta and Vaupés in 1943-4; so too did the sugar-cane enterprises, like La Manuelita in Valle. Some firms, like Tropical Oil, also required laboratory chiefs and assistants. There were sectoral appointments to handle specific sectors of health care provision: directors of the leper colony of Contratación and the Asilo de Mujeres Indigentes in Bogotá; visitor of the leper colony and director of anti-leprosy dispensary of Norte de Santander; director of the mental hospital (*manicomio*) of Sibale and the Casa de Reposo in Chía; and a doctor responsible for convulsion therapy services in the women's mental hospital (*frenicomio*) in Bogotá.

Departmental governments slowly expanded their range of positions. A regional director of hygiene and chiefs of campaigns against yaws and exanthematic typhus were appointed in Caldas. And doctors were appointed to the Caja de Previsión Social of the departmental employees and tax collectors of Cauca; the Oficina de Medicina Legal in Santander; the campaign against child tuberculosis in Antioquia; the mission against rickettsial diseases in Cundinamarca; the Boyacá Penitentiary; the prisons of Cundinamarca; and the schools and public assistance in Casanare. There were city initiatives too: a food and drugs inspector for Bogotá, a surgeon for the Caja Nacional de Previsión in Ibagué; the Hospice in Bogotá; *dispensarios antivenéreos* in Manizales, Neiva and San Vicente, Santander; heads of child clinics, nurseries and children's homes; the head of cleansing of a sea- or river-port. There were municipal appointments: heads of hygiene centre in Armenia, Balboa (Caldas), Tocaima, Ubate, Malagá; a director of surgery for skin diseases in El Socorro; the head of an anti-tuberculosis dispensary in Montería; the hospital director and trustee in Duitama; and director of the municipal hospital of Barrancabermeja. Some departmental capitals had appointed *jefes médicos* in the early 1910s; they were followed in the 1910s and 20s by the main western coffee municipalities. Then in the 1930s the practice spread to the outlying towns of Cundinamarca; and from there to Boyacá, the Santanderes and Valle in the 1940s.

149. Interview, nurse, daughter of medical practitioner, Bogotá, 10 December 1987.

150. Interview, medicine professor, Bogotá, 12 November 1987.

151. International Bank for Reconstruction and Development (IBRD), *The Basis of a Development Program for Colombia. Report of a Commission headed by Lauchlin Currie...* (Baltimore, 1952), Table 51.

152. Resolución No. 57 de 1920, Resolución No. 31 de 1920.

153. *Anexos a la Memoria del Ministro de Trabajo, Higiene y Previsión Social 1944-1945*, pp. 87-8; *Mem....higiene 1947 Tomo I*, esp. pp. 132-5.

154. *Memoria de Higiene...1947, Tomo I*, pp. 112-8.

155. Interview, retired health official, Bogotá, 15 December 1987.

156. Interview, medical researcher, Bogotá, 10 December 1987.

157. For comparative context, James Midgley, *Social Security, Inequality and the Third World* (London, 1984); Carmelo Mesa-Lago, *Social Security in Latin America: Pressure Groups, Stratification and Inequality* (Pittsburgh, 1978); James A. Malloy, *The Politics of Social Security in Brazil* (Pittsburgh, 1978); Colin M. Lewis, 'Social Insurance: Ideology and Policy in the Argentine, c. 1920-66', in Abel and Lewis (eds.), *Welfare, Poverty and Development in Latin America*, pp. 175-200.

158. ISS, *Evolución histórica del seguro social 1949-1989* (Bogotá, 1989), pp. 27-37.

159. IBRD, *The Basis of a Development Program for Colombia*, pp. 492-8; Jorge Restrepo Hoyos, *Aspectos económicos de la Seguridad Social en Colombia* (Bogotá, 1960), esp. p. 62.

160. Christopher Abel, *Política, Iglesia y Partidos en Colombia: 1886-1953* (Bogotá, 1987), p. 281.

161. IBRD, *The Basis of a Development Program for Colombia*, esp. pp. 492-8; ISS, *op. cit.*, pp. 37-72.

162. Abel, *Política, Iglesia y Partidas en Colombia.*

163. Interview, ex-minister, Bogotá, 7 December 1987.

164. See Paul Oquist, *Violence, Conflict and Politics in Colombia* (New York, 1980).

165. Interview, retired health official, 17 November 1987.

166. On Beveridgian ideas in Latin America, see Abel and Lewis (eds.), *Welfare, Poverty and Development in Latin America*, esp. pp. 3-21, 149-52, 175, 183.

167. Interview, specialist in tropical diseases, Bogotá, 16 December 1987.

168. IBRD, *The Basis of a Development Program for Colombia*, pp. 492-3.

169. *Memoria....1953*, pp. 150-1.

170. *Anexos a la Memoria del Ministro de Trabajo, Higiene y Social Previsión 1944-1945* (Bogotá, 1945).

171. Interview, ex-minister, Bogotá, 7 December 1987.

172. Lesley Doyal with Imogen Purcell, *The Political Economy of Health* (London, 1979), pp. 230-90.

173. *Memoria....Higiene I 1947* (Bogotá, 1947), p. 25.

174. *Ibid.*, esp. p. 97.

175. IBRD, *The Basis of a Development Program for Colombia*, pp. 492-8.

176. A continuous theme of Daniel Pécaut, *L'Ordre et la Violence. Evolution socio-politique de la Colombie entre 1930 et 1953* (Paris, 1987).

177. Recommendations by Robert L. Cherry, Director of SCISP, contained in *Memoria....Higiene I 1947*, pp. 99-102.

178. Cf. Roy Porter, *Disease, Medicine and Society in England. 1550-1860* (2nd edn., London, 1989), p. 60.

179. Cf. Paul Slack, 'Introduction', in Ranger and Slack (eds.), *Epidemics and Ideas*, pp. 1-20.

180. *Anexos....Trabajo....1944-1945*, esp. p. 70.

181. Rosselli, *Historia de la psiquiatría en Colombia*, tomo I, pp. 404-5.

182. Albert Berry and Miguel Urrutia, *Income Distribution in Colombia* (New Haven, 1976), pp. 87-123. Unfortunately evidence does not exist for food spending patterns which could be used to corroborate conclusions drawn from income distribution figures regarding health care (only from the 1970s does such data exist). See on Cali, Miguel Urrutia, *Winners and Losers in Colombia's Economic Growth of the 1970s* (New York, 1985), pp. 61-5.

183. IBRD, *The Basis of a Development Program for Colombia*, pp. 492-8; *Memoria...salud pública 1953*, esp. p. 124.

184. Cf. the experience of the North of England during the Industrial Revolution. Hilary Martland, *Medicine and Society in Wakefield and Huddersfield, 1780-1870* (Cambridge, 1987), *passim*.

185. Decreto No. 3842 de 1949 (3 December).

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